

Interdisciplinary Conference, Corfu, Greece | 25 May - 4 June 2017

TABOO - TRANSGRESSION - TRANSCENDENCE

in Art & Science

ΤΑΜΠΟΥ - ΠΑΡΑΒΑΣΗ - ΥΠΕΡΒΑΣΗ

στην Τέχνη και την Επιστήμη

Editors: Dalila Honorato & Andreas Giannakouloupolos



IONIAN UNIVERSITY
FACULTY OF MUSIC & AUDIOVISUAL ARTS
DEPARTMENT OF AUDIO & VISUAL ARTS



© 2018 Ιόνιο Πανεπιστήμιο | Τμήμα Τεχνών Ήχου και Εικόνας
Ionian University | Department of Audio and Visual Arts

ISBN: 978-960-7260-60-4

Επιμέλεια
Νταλίλα Ονοράτου
Ανδρέας Γιαννακουλόπουλος

Editing
Dalila Honorato
Andreas Giannakoulopoulos

Σελιδοποίηση
Ιωάννα Λογκάκη

Pagination
Ioanna Logaki

Σχεδιασμός εξωφύλλου
Ιωάννα Λογκάκη
Δημήτρης Πολίτης

Cover Image
Ioanna Logaki
Dimitris Politis

Έκδοση
Ιόνιο Πανεπιστήμιο
Τμήμα Τεχνών Ήχου και Εικόνας
Πλατεία Τσιριγώτη 7 49100 Κέρκυρα
τηλ. 26610 87860-1 fax 26610 87866
e-mail: audiovisual@ionio.gr
<http://avarts.ionio.gr>

Publishing
Ionian University
Department of Audio and Visual Arts
7 Tsirigoti Square 49100 Corfu - Greece
tel. 26610 87860-1 fax 26610 87866
e-mail: audiovisual@ionio.gr
<http://avarts.ionio.gr>

TABOO – TRANSGRESSION – TRANSCENDENCE
in Art & Science

Proceedings of Interdisciplinary Conference
Ionian University | Department of Audio and Visual Arts

CORFU 2017



Contents | Περιεχόμενα

- 8 Introduction
- 11 Εισαγωγή

SEX

- 15 **FROM THE FIRST PHALLUSES TOOLS TO THE ANTHROPOMORPHIC SEX MACHINES** [text in Greek]
Pavlis Georgios
- 26 **TRANSCENDING THE “SCRIPT”: IDENTITY IN INTERNET ART THROUGH DELEUZE AND LACAN**
Marilyn Argyrokastriti and Nikos Moschopoulos
- 33 **NEUROSEXISM: GENDER STEREOTYPES THAT STILL RULES NEUROSCIENCE. A NEUROFEMINIST CRITICISM FOR DECONSTRUCTING HARDWIRED GENDER MINDS**
Sofia Tsepeneka and Aikaterini Gialopsou
- 44 **PORNOGRAPHY OR ART? TRANSGRESSIVE REVELATIONS IN CINEMA** [text in Greek]
Despoina Poulou
- 52 **THE ISSUE OF THE POST-GENDER AND TRANSGRESSIVE IDENTITIES IN CONTEMPORARY GREEK REALITY IN THE CINEMATIC WORK OF PANOS KOUTRAS**
Iakovos Panagopoulos

INPUT

- 62 **POLISPECTIVE: AN INTERACTIVE INSTALLATION RENEGOTIATING URBAN SPACE**
Penny Papageorgopoulou, Dimitris Charitos, Iouliani Theona and Charalampos Rizopoulos
- 73 **THE AESTHETICS OF MATHEMATICAL ANATHEMAS. THE DIVISION BY ZERO**
Ioannis Bardakos and Alain Lioret
- 81 **LAN GAME: SPACE, DENSITY, WILL, SELF-ORGANIZATION WITHIN HUMAN-MACHINE INTERACTION IN A LIVE ELECTRONICS WORK** [text in Greek]
Philippos Theocharidis and Andreas Mniestris
- 93 **BLACK SONIC HOLE: AN IMMERSIVE AND INTERACTIVE SONIC SOUNDSCAPE BASED ON SCHWARZSCHILD’S GEODESICS FOR BLACK HOLES. HUMANIZING THE SCALE OF COMPLEX SINGULAR PHYSICAL PHENOMENA IN THE POST-DIGITAL AGE**
Daniel Perez-Grande, Miguel Oliveros and David Morante

UNCANNY

- 113 **SHADOW THEATRE AND HUMAN DOLLS**
Giorgos Nikopoulos, Dalila Honorato and Marianne Strapatsakis
- 119 **BEYOND LIMITS: ZOMBIE THEORY AND THE ART AND SCIENCE OF CONSTRAINT**
Brian Reffin Smith
- 123 **DESIGNING GRASS, DESIGNING DRESSIN THE ERA OF CREATIVITY: HAS ART BECOME DESIGN?**
Polona Tratnik
- 134 **ART, SCIENCE AND THE IMPORTANCE OF LIMITS** [text in Greek]
Eleni Gemtou
- 144 **XOXOX**
Erik Zepka
- 148 **TECHNOIDUALITY AND THE POST-TRUTH PHENOMENON: TRUTH AS A TECHNOLOGICAL TABOO** [text in Greek]
Theodore Kabouridis

BIOART

- 160 **ARTIST OR RESEARCHER? ARTIST CONDUCTING AUTOETHNOGRAPHY RESEARCH DURING PROJECTS IN BIOLOGICAL LABORATORIES**
Karolina Żyniewicz
- 172 **A TRANSGENIC BUTTERFLY ARTWORK / INSERTING A HUMAN GENE (ARTIST'S YIANNIS MELANITIS) IN A BUTTERFLY (SPECIAES: LEDA MELANITIS)**
Yiannis Melanitis
- 177 **THE MIRROR OF FAITH**
Boryana Rossa
- 190 **BIOART IN QUESTION**
Adam Zaretsky

NONPLACE

- 208 **IN VIVO: ARTSCI PRACTICES IN UNEXPECTED SPACES OR...SQUATTING ACADEMIA FOR #SCIART**
Roberta Buiani
- 221 **THE ECONOMY OF THEŌRIA IN THE TRANSHUMANISTIC ERA**
Katerina Karoussos
- 229 **THE TRANSCENDENCE DOUBLE SELFIE APP**
Lila Moore

- 237 **WRITING GHOSTS: HOW TO ENTER THE ROOM INSIDE**
Regina Duerig
- 242 **THE ISLAND OF TIME: THE INFAMOUS PONTIKONISI OF CORFU AS SELF
TRANSCENDENCE LIMIT** [text in Greek]
Nikos Mamalos

ARTIFICIAL

- 251 **ART THEORY AND ARTIFICIAL INTELLIGENCE IN GREECE: A
DOCUMENTATION OF 30 YEARS OF CROSS-DISCIPLINARY RESEARCH
WITH DIALOG BETWEEN POLY KASDA AND JOHN KONTOS**
Mariana Ziku
- 263 **TECHNICAL AND AESTHETIC APPROACHES TO IMAGE GENERATION-
RESEARCH AND APPLICATION**
John Thrasher
- 271 **COGNITION ENHANCEMENT: BLENDING PERSUASIVE TECHNOLOGY AND
EMERGING WEB-BASED APPLICATIONS**
Sotirios Fotiou, Antonia Plerou and Panagiotis Vlamos
- 278 **STRUCTS FOR AN ASPATIAL QUANTUM-NOW**
André Sier
- 292 **PORTRAYAL OF BIOHACKERS IN NEWS AND TECHNOLOGICAL WEBSITES**
Andreas Giannakouloupoulos, Laida Limniati and Dalila Honorato

FILM FEAR

- 300 **ZOMBIES AND THE DEATH OF MAINSTREAM MEDIA: AN ANALYSIS OF
GEORGE A. ROMERO'S DIARY OF THE DEAD**
Yorgos Drosos
- 309 **TO TRANSCENDENCE THROUGH DESTRUCTION: FIGURES FROM GHOST
IN THE SHELL (1995)**
Giulia Belloni
- 318 **CINEMA: IN THE VANGUARD OF THE TWENTIETH CENTURY - FILM AS A
PREMONITION OF TECHNOLOGICAL EXCESS** [text in Greek]
Kostoula Kaloudi
- 325 **THE USE OF FEAR AS STRUCTURAL FEATURE IN VISUAL ARTS AND
CINEMA ART** [text in Greek]
Iakovos Panagopoulos, Konstantinos Tiligadis and Francesco Kiais
- 335 **ART, NEUROSCIENCE AND PRINTS - THE CASE OF SUSAN ALDWARTH**
[text in Greek]
Maria Athanasekou

BODY ESC

- 345 **CURATORS' NOTE**
Dalila Honorato & Marina Papatotiriou
- 347 **A CHANGE OF HEART**
Andrew Carnie
- 362 **SUCCOUR**
Kira O' Reilly and Manuel Vason
- 365 **CYCLOPS (PIANOEYE)**
Joseph Nechvatal
- 369 **INCIDENT ENERGY PROJECT - AN ARTIST'S EXPLORATIONS OF THERMAL IMAGING**
Marne Lucas

Introduction

by Dalila Honorato

Not very long ago, while researching at the University of Malta, during my sabbatical leave in 2015, the idea of a dialectical cyclical process in Art&Sci practice research methodology was synthesized in the conference initials: TTT. "Taboo-Transgression-Transcendence in Art & Science" is an intentionally facilitated meeting point, organized to safely host the free interaction of ideas around liminal issues in the frame of Art&Sci. As stated in the introduction to the first TTT conference proceedings of 2016 the three Ts underline: "First the forbidden, a convention that is so deeply rooted that few seem to be willing to break it. Second the defiance, the challenge to the convention itself either through the resistance to execute an order or through the direct action against the status quo. Third, the sublimation, the transition to an alternative state that overcomes the expected intermediary stages in linear conceptualization, here connected with the expansion of limits." Thus, "Taboo-Transgression-Transcendence in Art & Science" includes theoretical presentations and artists' talks focusing: a) on questions about the nature of the forbidden and about the aesthetics of liminality - as expressed in art that uses or is inspired by technology and science, b) in the opening of spaces for creative transformation in the merging of science and art.

"Taboo-Transgression-Transcendence in Art & Science 2017", as TTT2016, was held in Corfu, teaming up once again with the Audiovisual Arts Festival, organized by the Department of Audio & Visual Arts of the Ionian University. As a project, the TTT conference series is sustained by its Steering Committee presently composed by (in alphabetical order): Roy Ascott, Plymouth University (UK), Andreas Floros, Ionian University (Greece), Dalila Honorato, Ionian University (Greece), Gunalan Nadarajan, University of Michigan (USA), Melentie Pandilovski, Riddoch Art Gallery Director, Manager and Arts & Culture Development (Australia), Stelarc, Curtin University (Australia), Polona Tratnik, Alma Mater Europaea (Slovenia) and Adam Zaretsky, Marist College (USA). The conference took place in 26-28 May 2017 in the historical building Ionian Academy. Integrated in the 11th Audiovisual Arts Festival, it had the privilege to count with the participation of nine personalities of the art & science fields as guest speakers: Irina Aristarkhova, Roy Ascott, Andrew Carnie, Marta de Menezes, Maria Antonia Gonzalez Valerio, Kathy High, Gunalan Nadarajan, Polona Tratnik and Adam Zaretsky. At the same time it was also a great challenge and unique experience to comprise the parallel organization of five different events: the artwork exhibition "Body Esc", a poster exhibition, screenings, live performances and a book presentation.

The conference proceedings for TTT2017 were published in two forms. Part were published on the special issue vol. 15:2 of the Technoetic Arts journal, by Intellect Publications, including only texts from TTT2017, following the invitation of Roy Ascott (editor-in-chief) to Dalila Honorato (guest-editor). The main core

of the presentations is included in this digital book, published by the Department of Audio & Visual Arts of the Ionian University, edited by Dalila Honorato and Andreas Giannakouloupoulos, also Assistant Professor at the Ionian University (GR) and webmaster of the conferences official website. The ebook of proceedings of TTT2017 includes the text of thirty-eight presentations chosen by the international scientific-artistic committee following the programme of the conference which had a total of ninety-nine speakers from nineteen different countries organized in twenty-three sessions. The book follows a similar order of the conference. The chapters are: "Sex" with texts from Georgios Pavlis, Marily Argyrokastriti & Nikos Moschopoulos, Sofia Tsepeneke & Aikaterini Gialopsou, Despoina Poulou and Iakovos Panagopoulos, "Input" with texts from Penny Papageorgopoulou, Dimitris Charitos, Iouliani Theona & Charalampos Rizopoulos, Ioannis Bardakos & Alain Lioret, Philippos Theocharidis & Andreas Mniestris and Daniel Perez-Grande, David Morante, Miguel Oliveros & Celia Talamante, "Uncanny" with texts from Giorgos Nikopoulos, Dalila Honorato & Marianne Strapatsakis, Brian Reffin Smith, Polona Tratnik, Eleni Gemtou, Erik Zepka and Theodore Kabouridis, "Bioart" with texts from Karolina Żyniewicz, Yiannis Melanitis, Boryana Rossa and Adam Zaretsky, "Nonplace" with texts from Roberta Buiani, Katerina Karoussos, Lila Moore, Regina Duerig and Nikos Mamalos, "Artificial" with texts from Mariana Ziku, John Thrasher, Sotirios Fotiou, Antonia Plerou & Panagiotis Vlamos, André Sier and Andreas Giannakouloupoulos, Laida Limniati & Dalila Honorato, "Film Fear" with chapters from Yorgos Drosos, Giulia Belloni, Kostoula Kaloudi, Iakovos Panagopoulos, Konstantinos Tiligadis & Francesco Kiais and Maria Athanasekou, and "Body Esc" with texts from Andrew Carnie, Kira O' Reilly & Manuel Vason, Joseph Nechvatal and Marne Lucas.

"Taboo-Transgression-Transcendence in Art & Science 2017" counted with the support of public and private institutions from Greece and abroad, and it is through these that the organization of the conference was possible. The conference was sponsored by the Ionian University, the Professional Chamber of Corfu, the Corfu Hotel Association and Federation of Entrepreneurs of Corfu Tourism Enterprises. The events integrating TTT2017 were kindly hosted by the Municipality of Corfu, the Municipal Gallery of Corfu and the Polytechno Multi-space in Corfu. Supporting institutions of the conference programme were the I-Node of the Planetary Collegium in Athens (Greece), Grigoris Publications (Greece), Intellect Publications (UK), LEONARDO/ISAST Programs (USA), Djerassi Resident Artists Program (USA) and Verbeke Foundation (Belgium). Last but not least the organization of TTT2017 expresses its gratitude towards the students volunteers from all departments of the Ionian University, who embraced enthusiastically the development of this event.

After three years working in the organization of "Taboo-Transgression-Transcendence in Art & Science" in Greece I am glad to announce that its third version is taking place in Mexico in 11-13 November 2018, hosted by the Universidad Nacional Autónoma de México (UNAM) and the Centro de Cultura

Digital, and coordinated in partnership with the program of the FACTT 2018 - Festival Art & Science Trans-disciplinary and Trans-national. The conference is co-organized by the Research and Creation Group Arte+Ciencia, UNAM (Mexico), Arte Institute (USA), Cultivamos Cultura (Portugal) besides the Department of Audio and Visual Arts, Ionian University (Greece). On behalf of the TTT2018 team I hope to see you in Mexico!

Εισαγωγή

της Νταλίλας Ονοράτου

Πριν λίγο καιρό, ενώ πραγματοποιούσα την έρευνά μου στο Πανεπιστήμιο της Μάλτας, κατά τη διάρκεια της εκπαιδευτικής μου άδειας το 2015, σχημάτισα την ιδέα μιας διαλεκτικής κυκλικής διαδικασίας στη μεθοδολογία της έρευνας βασισμένη στην πρακτική στον τομέα της τέχνης που δημιουργείται με επιστημονικά μέσα: ΤΤΤ [ελληνικά: ΤΠΥ]. Το συνέδριο “Ταμπού - Παράβαση - Υπέρβαση στην Τέχνη και την Επιστήμη” προσφέρει σκόπιμα ένα σημείο συνάντησης που οργανώνεται για την ασφαλή υποδοχή της ελεύθερης αλληλεπίδρασης ιδεών που εξερευνούν τη γραμμή όπου τέχνη και επιστήμη συναντιούνται και όπου ταυτόχρονα προσδιορίζει το όριο που τις χωρίζει. Όπως αναφέρθηκε ήδη στην εισαγωγή του πρώτου ηλεκτρονικού βιβλίου των πρακτικών του συνεδρίου του 2016: “Οι τρεις λέξεις που αποτελούν τον τίτλο συγχωνεύουν τρεις ιδέες. Αρχικά το απαγορευμένο, μια σύμβαση τόσο βαθιά ριζωμένη που πολύ λίγοι δείχνουν διατεθειμένοι να σπάσουν. Δεύτερη έρχεται η περιφρόνηση, η πρόκληση στην ίδια τη σύμβαση είτε μέσα από την αντίσταση στην εκτέλεση μιας εντολής, ή μέσα από μια άμεση πράξη κόντρα στο κατεστημένο. Τρίτη έρχεται η εξύψωση, η μετάβαση σε μια υπερβατική κατάσταση όπου ξεπερνάει τα αναμενόμενα ενδιάμεσα στάδια της γραμμικής σύλληψης, και είναι συνδεδεμένη εδώ με τα όρια της διερεύνησης της ακρότητας”. Επομένως, το συνέδριο “Ταμπού - Παράβαση - Υπέρβαση στην Τέχνη και την Επιστήμη” εμπεριέχει στο πρόγραμμά του θεωρητικές παρουσιάσεις και ομιλίες καλλιτεχνών που εστιάζουν: α) σε ερωτήματα γύρω από τη φύση του Απαγορευμένου και την αισθητική του Οριακού όπως αυτά εκφράζονται στην τέχνη που χρησιμοποιεί – ή εμπνέεται από – την τεχνολογία και την επιστήμη και β) στο άνοιγμα ευκαιριών για τη δημιουργική συνάντηση της τέχνης με την επιστήμη.

Το συνέδριο “Ταμπού - Παράβαση - Υπέρβαση στην Τέχνη και την Επιστήμη 2017”, όπως και το συνέδριο του 2016, έλαβε χώρα στην Κέρκυρα, σε συνεργασία με το Φεστιβάλ Οπτικοακουστικών Τεχνών, σε μια οργάνωση του Τμήματος Τεχνών Ήχου και Εικόνας του Ιονίου Πανεπιστημίου. Ως έργο, αυτή η σειρά συνεδρίων υποστηρίχθηκε από τη Συντονιστική Επιτροπή, αποτελούμενη από τους (αλφαβητική σειρά): Roy Ascott, Plymouth University (Ηνωμένο Βασίλειο), Adam Zaretsky, Marist College (ΗΠΑ), Dalila Honorato, Ιόνιο Πανεπιστήμιο (Ελλάδα), Gunalan Nadarajan, University of Michigan (ΗΠΑ), Melentie Pandilovski, Riddoch Art Gallery και Arts & Culture Development (Αυστραλία), Stelarc, Curtin University (Αυστραλία), Polona Tratnik, Alma Mater Europaea (Σλοβενία) και Ανδρέας Φλώρος, Ιόνιο Πανεπιστήμιο (Ελλάδα). Το συνέδριο έλαβε χώρα στις 26-28 Μαΐου 2017 στο ιστορικό κτίριο της Ιονίου Ακαδημίας. Τη διοργάνωση αυτή, που έγινε στο πλαίσιο του 11ου Φεστιβάλ Οπτικοακουστικών Τεχνών, τίμησαν με την παρουσία τους εννιά προσωπικότητες της τέχνης και της επιστήμης ως προσκεκλημένοι ομιλητές: Irina Aristarkhova, Roy Ascott, Andrew Carnie, Marta de Menezes, Maria Antonia Gonzalez Valerio, Kathy

High, Gunalan Nadarajan, Polona Tratnik και Adam Zaretsky. Ταυτόχρονα ήταν μεγάλη πρόκληση και μοναδική εμπειρία να συμπεριληφθούν παράλληλα στο πρόγραμμα και την οργάνωση πέντε διαφορετικές δράσεις: η καλλιτεχνική έκθεση “Body Esc”, η έκθεση επιστημονικών αφισών, προβολές, ζωντανές παραστάσεις και μια παρουσίαση βιβλίου.

Τα πρακτικά του συνεδρίου TTT2017 εκδόθηκαν σε δύο μορφές. Ένα μέρος δημοσιεύθηκε στο ειδικό τεύχος 15:2 του περιοδικού Technoetic Arts των εκδόσεων Intellect, συμπεριλαμβάνοντας μόνο κείμενα του συνεδρίου, κατόπιν πρόσκλησης του επιμελητή της σειράς, Roy Ascott, στην επικεφαλής της οργανωτικής επιτροπής, Dalila Honorato, για την επιμέλεια της έκδοσης αυτής. Το κύριο μέρος των πρακτικών συμπεριλαμβάνεται σε αυτό το ψηφιακό βιβλίο, σε μια έκδοση από το Τμήμα Τεχνών Ήχου και Εικόνας του Ιονίου Πανεπιστημίου, με επιμέλεια της Dalila Honorato και του Ανδρέα Γιαννακουλόπουλου, επίσης Επίκουρου Καθηγητή στο Ιόνιο Πανεπιστήμιο και υπεύθυνου για τον επίσημο ιστοχώρο του συνεδρίου.

Το ψηφιακό βιβλίο των πρακτικών του συνεδρίου TTT2017 εμπεριέχει τριάντα οκτώ κείμενα τα οποία επιλέχθηκαν από την επιστημονική-καλλιτεχνική επιτροπή σύμφωνα με το πρόγραμμα των παρουσιάσεων, με σύνολο ενενήντα-εννιά ομιλητές από δεκαεννέα χώρες, οργανωμένα σε είκοσι τρία συνεδρίες. Το βιβλίο ακολουθεί την αντίστοιχη σειρά του συνεδρίου. Τα κεφάλαια είναι: “Sex” με κείμενα των Georgios Pavlis, Marily Argyrokastriti κ’ Nikos Moschopoulos, Sofia Tsepeneke κ’ Aikaterini Gialopsou, Despoina Poulou και Iakovos Panagopoulos, “Input” με κείμενα των Penny Papageorgopoulou, Dimitris Charitos, Iouliani Theona κ’ Charalampos Rizopoulos, Ioannis Bardakos κ’ Alain Lioret, Philippos Theocharidis κ’ Andreas Mniestris και Daniel Perez-Grande, David Morante, Miguel Oliveros κ’ Celia Talamante, “Uncanny” με κείμενα των Giorgos Nikopoulos, Dalila Honorato κ’ Marianne Strapatsakis, Brian Reffin Smith, Polona Tratnik, Eleni Gemtou, Erik Zepka και Theodore Kabouridis, “Bioart” με κείμενα των Karolina Żyniewicz, Yiannis Melanitis, Boryana Rossa και Adam Zaretsky, “Nonplace” με κείμενα των Roberta Buiani, Katerina Karoussos, Lila Moore, Regina Duerig και Nikos Mamalos, “Artificial” με κείμενα των Mariana Ziku, John Thrasher, Sotirios Fotiou, Antonia Plerou κ’ Panagiotis Vlamos, André Sier και Andreas Giannakoulopoulos, Laida Limniati κ’ Dalila Honorato, “Film Fear” με κείμενα των Yorgos Drosos, Giulia Belloni, Kostoula Kaloudi, Iakovos Panagopoulos, Konstantinos Tiligadis κ’ Francesco Kiais και Maria Athanasekou, και “Body Esc” με κείμενα των Andrew Carnie, Kira O’ Reilly κ’ Manuel Vason, Joseph Nechvatal και Marne Lucas.

Η διοργάνωση του συνεδρίου “Ταμπού - Παράβαση - Υπέρβαση στην Τέχνη και την Επιστήμη 2017” οφείλει τη βιωσιμότητά της στην υποστήριξη δημοσίων και ιδιωτικών φορέων από την Ελλάδα και το εξωτερικό. Το συνέδριο χορηγήθηκε από το Ιόνιο Πανεπιστήμιο, το Επιμελητήριο Κέρκυρας, την Ένωση Ξενοδόχων Κέρκυρας και την Ομοσπονδία Ιδιοκτητών Τουριστικών Καταλυμάτων Κέρκυρας. Οι καλλιτεχνικές εκδηλώσεις φιλοξενήθηκαν ευγενικά από τον Δήμο Κέρκυρας, την Πινακοθήκη Δήμου Κέρκυρας και το κατάστημα

Πολύτεχνο στην Κέρκυρα. Το πρόγραμμα του συνεδρίου υποστηρίχτηκε επίσης από τους: I-Node του Planetary Collegium στην Αθήνα, Εκδόσεις Γρηγόρης, Intellect Publications (Ηνωμένο Βασίλειο), LEONARDO/ISAST Programs (ΗΠΑ), Djerassi Resident Artists Program (ΗΠΑ) and Verbeke Foundation (Βέλγιο). Τέλος, εξίσου σημαντικό, η διοργάνωση του συνεδρίου TTT2017 θα ήθελε να εκφράσει την ευγνωμοσύνη της προς τους εθελοντές φοιτητές από όλα τα τμήματα του Ιονίου Πανεπιστημίου, οι οποίοι αγκάλιασαν με ενθουσιασμό την ανάπτυξη αυτού του σχεδίου.

Μετά από τρία χρόνια εργασίας στην οργάνωση της σειράς «Ταμπού – Παράβαση – Υπέρβαση στην Τέχνη και την Επιστήμη» στην Ελλάδα αποτελεί μεγάλη χαρά η ανακοίνωση ότι το τρίτο συνεδρίου θα λάβει χώρα μεταξύ 11-13 Νοεμβρίου 2018, στην Πόλη του Μεξικού. Το TTT2018 θα φιλοξενηθεί από το Universidad Nacional Autónoma de México (UNAM) και το Centro de Cultura Digital σε συντονισμό με το πρόγραμμα του FACTT 2018 - Festival Art & Science Trans-disciplinary and Trans-national. Το συνέδριο διοργανώνεται από την ομάδα Έρευνας και Δημιουργίας Arte+Ciencia, UNAM (Μεξικό), το Arte Institute (ΗΠΑ), το Cultivamos Cultura (Πορτογαλία) και το Τμήμα Τεχνών Ήχου και Εικόνας του Ιονίου Πανεπιστημίου. Εκ μέρους της ομάδας που υποστηρίζει την οργάνωση του συνεδρίου TTT2018, ελπίζουμε να σας δούμε στο Μεξικό!

Sex

From the first phalluses tools to the anthropomorphic sex machines

ABSTRACT

From ancient times people invented tools to satisfy their sexual needs. Those tools were phallus-shaped made either of stone, leather, wood or tar. Over the years they appear in various versions of art and bend the communities' moral barriers, starring as satisfying tools. Nowadays, in a rapidly changing urban landscape tools evolve and coexist with the anthropomorphic sex machines and the continuously growing sexual needs.

KEYWORDS

Antiquities, Museology, Onanism, Phallus, Sex-machines, Sex-toys

ΕΙΣΑΓΩΓΗ

Η εξέταση των σεξουαλικών εργαλείων από την προϊστορία ως τις μέρες μας προϋποθέτει τη διερεύνηση και ανάδειξη όλου του χρονικού φάσματος, του περιβάλλοντος, των κοινωνιών και των συνθηκών όπου αυτά επινοήθηκαν, αναπτύχθηκαν και χρησιμοποιήθηκαν. Με τη σειρά τους εκείνα ενσωματώθηκαν, διαμόρφωσαν και διαμορφώθηκαν μέσα στους ηθικούς κανόνες των κοινωνιών και την ανά την εποχή σεξουαλική κουλτούρα. Η έρευνα αυτή δεν καλείται να επιλύσει το ερμηνευτικό μέρος των σεξουαλικών αντικειμένων, πρόκειται για μια διερεύνηση πάνω στο σεξουαλικό αφήγημα και το πώς αυτό εντάσσεται από το χθες στο σήμερα με άξονα τα σεξουαλικά εργαλεία που χρησιμοποιούσαν από τις πρώιμες κοινωνίες στους σύγχρονους πολιτισμούς.

ΙΣΤΟΡΙΚΗ ΕΠΙΣΚΟΠΗΣΗ

Για την περίοδο της προϊστορίας δεν έχουμε μαρτυρίες που να αναδεικνύουν άμεσα την κοινωνική οργάνωσή της (Λεντάκης 1984), όμως, η σεξουαλική κουλτούρα της περιόδου εκείνης διαφαίνεται στα ευρήματα που εντοπίζουν οι αρχαιολόγοι, όπως ανθρώπινα υπολείμματα, ανθρώπινες κατασκευές και οικοσυσμβάντα (Taylor 2010, σσ. 23-24). Τα μηνύματα που μεταφέρει η πληθώρα των αντικειμένων και που τοποθετούνται χρονικά στην προϊστορία δεν μπορεί

να καταστήσει κατηγορηματική την εικόνα της περιόδου. Ο Bachofen (1861) ονόμασε την κοινωνική οργάνωση εκείνης της περιόδου ως «μητριαρχική», για να δείξει πως η κοινωνία ήταν συγκροτημένη με άξονα τη μητέρα. Σαφώς ο όρος είναι λαθεμένος αφού δεν έρχεται σε αντιδιαστολή με τον όρο «πατριαρχία», όπου άρχει ο πατήρ. Το σίγουρο είναι ότι στις πρώιμες φάσεις της περιόδου αγνοείται ο αναπαραγωγικός ρόλος του άντρα και θεωρείται ότι η γυναίκα τεκνογονεί από μόνη της, χωρίς να έχει συνδεθεί η σεξουαλική πράξη με την τεκνογονία, γεγονός που τα ύστερα χρόνια αναιρείται με φυσικούς τρόπους αντισύλληψης (Taylor 2010, σσ. 16-17). Σίγουρα όμως, ο όρος μητριαρχία από μόνος του και με τη σειρά του εγείρει μια σειρά αντιπαραθέσεων μεταξύ των επιστημόνων.

Το πέρασμα από την ενδογαμία, όπου το γένος συντελείται με βάση την γυναίκα και όλοι οι άντρες είναι σύζυγοι όλων των γυναικών της ίδιας ορδής, στην απόλυτη πατριαρχική κοινωνία συντελείται σταδιακά και βαθμιαία και σε ανά τόπους περιοχές εντοπίζονται ποικίλες παρεκτροπές των προτύπων που θα εκλείψουν στα επόμενα χρόνια (Λεντάκης 1998).

Στην περίοδο της πατριαρχίας η γυναίκα υποτάχτηκε και έγινε ένα αντικείμενο της σεξουαλικής χαράς του άντρα, μέσω παιδοποίας για την διατήρηση του οίκου και της οικογενειακής περιουσίας και λατρείας, φύλακας του νοικοκυριού. Οι εταίρες προορίζονταν για την ηδονή, οι παλλακίδες για την καθημερινή φροντίδα, οι σύζυγοι για τη δημιουργία νόμιμων απογόνων και για τη φύλαξη του οίκου, λέει ο ρήτορας του Κατά Νεαίρας (Mossé 2001, σσ. 65-86).

Ο Αριστοτέλης παρουσίασε τις σεξουαλικές πράξεις ως φυσικές πράξεις μεταξύ των θηλαστικών και προσδιόρισε ότι τόσο οι άνδρες όσο και οι γυναίκες έχουν ισχυρές σεξουαλικές παρορμήσεις. Η αρχαία Ελλάδα ύμνησε και εξιδανίκευσε το δυνατό, ελεύθερο και όμορφο ανδρικό και γυναικείο σώμα. Στη Ρωμαϊκή ζωή υπήρχε σεξουαλική ελευθερία αλλά υπήρχαν και αρκετά περιοριστικά διατάγματα. Σε κάποια χρονική περίοδο η ομοφυλοφιλία και ο αυνανισμός ήταν όχι μόνο ανεκτά αλλά και εξιδανικευμένα, ενώ αργότερα τέτοιου είδους σεξουαλικές προτιμήσεις αντιμετώπιζαν την πιο αυστηρή ποινικοποίηση (Βενετικού & Μπενετάτου 2013, σσ. 327-328).

Η Βυζαντινή Ηθική έχει αρκετά στοιχεία που πληθώρα εξ' αυτών αναγνωρίζουμε στη σημερινή ηθική, όσον αφορά στην αντιμετώπιση των διαφόρων όψεων της σεξουαλικότητας. Η εκκλησία ήταν εναντίων των προγαμιαίων σχέσεων, αφού το σεξ δεν μπορούσε να υπάρξει αφ' εαυτού σαν πηγή ηδονής αλλά έπρεπε να καλύπτεται με το άλλοθι της αναπαραγωγής. Έτσι, ο κανόνας ήθελε τις βυζαντινές γυναίκες να έχουν σεξουαλικές σχέσεις μετά το γάμο τους, και τους άνδρες να έχουν τη δυνατότητα να εκτονώνονται επισκεπτόμενοι τα πορνεία, ενώ η ομοφυλοφιλία και ο αυνανισμός σαν έκφραση της σεξουαλικότητας του ατόμου αντιμετώπισε την πολεμική και της Εκκλησίας και του κράτους (Ναλπάντης 1984, σ. 53).

Ο κατεξοχήν θρησκευτικός ισχυρισμός και παραδοχή ότι η σύλληψη του Ιησού έγινε χωρίς να μεσολαβήσει σεξουαλική πράξη και γεννήθηκε από μια παρθένα, ομολογεί μία αποστασιοποίηση από την ανθρώπινη αναπαραγωγική

διαδικασία. Η διδασκαλία του Ιησού επικεντρώθηκε γύρω από την ευσπλαχνία, την αγάπη και τις αρμονικές σχέσεις των ανθρώπων (Αντωνοπούλου 2000, σ. 44). Σε αντιδιαστολή ο Ινδουισμός αντιμετώπιζε την πορεία και τις δραστηριότητες του ατόμου σαν ένα ταξίδι μέσα στη ζωή, με διαφορετικές εμπειρίες για τον καθένα. Το κυρίαρχο στοιχείο του κάθε ανθρώπου είναι το κάρμα του και η ενσάρκωσή του σε αυτόν τον κόσμο αποτελεί κάτι μοναδικό. Σε σεξουαλικό επίπεδο η ένωση των ανθρώπων πραγματοποιείται ως τμήμα μιας αχανούς κοσμολογικής αρχής, που εκφράζει τη συνένωση όλων των ανθρώπων, όλων των πραγμάτων και όλων των τόπων. Κατάσταση που είναι διακριτή και από το Κάμα Σούτρα, διδάσκοντας ότι οι άνδρες και οι γυναίκες οφείλουν να δώσουν τη μεγαλύτερη δυνατή προτεραιότητα στην ικανοποίηση των αισθήσεων.

Ένα ακόμα πέρασμα συντελείται στην ιστορική εξέλιξη των πραγμάτων και πρόκειται για τη μετατόπιση του κέντρου βάρους του ενδιαφέροντος από κάποιους λόγιους επιστήμονες στο να μελετήσουν την πολυπλοκότητα των ανθρώπινων σεξουαλικών αναγκών και να συνειδητοποιήσουν το σημαντικό ρόλο της ανθρώπινης σεξουαλικότητας. Τον 16ο αιώνα οι φυσικοί μελέτησαν την ανθρώπινη ανατομία, και τις φυσιολογικές λειτουργίες απευθείας σε ανθρώπινα σώματα.

Κατά τον 16ο και 17ο αιώνα, όπου η αναγέννηση κατέκλυσε την Ευρώπη, συνοδεύτηκε από χαλάρωση των σεξουαλικών περιορισμών και μικρότερη προσκόλληση στους τύπους. Ο Ρομαντισμός εξιδανίκευσε την αγάπη, που χαρακτηρίζονταν από συναισθηματική έμφαση και ποικίλες φαντασιώσεις. Κατά τη διάρκεια αυτής της εποχής, διαμορφώθηκε στις ανώτερες τάξεις ένας νέος τρόπος ζωής, ο οποίος σε πρακτικό επίπεδο διέφερε από τα θρησκευτικά διδάγματα. Με το τέλος του Μεσαίωνα, οι άνθρωποι του λαού ανακαλύπτουν ότι οι σχέσεις στις τάξεις των ευγενών και των βασιλιάδων είναι τελείως διαφορετικές από τους κώδικες της ρομαντικής σεξουαλικής ηθικής. Τα σεξουαλικά παιχνίδια και οι ερωτικές συνωμοσίες των βασιλικών οίκων, έγιναν αντικείμενο καθημερινής συζήτησης. Οι κοινοί άνθρωποι άρχισαν να υιοθετούν πρακτικές ανάλογες με τα σεξουαλικά πρότυπα της αριστοκρατίας.

Κατά το 19ο αιώνα και σε συνέχεια όλων των προηγούμενων, η υπόθεση της σεξουαλικής χειραφέτησης ξεφεύγει από τα χέρια της Εκκλησίας και γίνεται οργανωμένη και συνειδητή πολιτική της κρατικής εξουσίας. Στον θρόνο βρίσκεται η Βικτώρια και η καταστολή των σεξουαλικών αναγκών γίνεται πολιτικό πρόγραμμα της Βρετανικής Αυτοκρατορίας. Οι νέοι και οι νέες, όπως και οι περισσότερες γυναίκες, δεν έπρεπε να γνωρίζουν τίποτα για τη σεξουαλικότητα. Η σεμνοτυφία της εποχής, απαγόρευε σε μια γυναίκα να ξεντύνεται μπροστά στο γιατρό.

Η ΑΜΦΙΣΗΜΙΑ ΤΩΝ ΕΡΓΑΛΕΙΩΝ

Παρότι έχουν διασωθεί λιγοστά αντικείμενα της προϊστορικής περιόδου, η ανθρώπινη σεξουαλική κουλτούρα εντοπίζεται τόσο σε άφθαρτα υλικά αντικείμενα (πεοθήκες, ερωτικά εικονίσματα, ερωτικές παραστάσεις, φαλλόσχημα αντικείμενα), όσο και σε άυλα αντικείμενα (τραγούδια και χοροί).

Ευρήματα της ιστορικής περιόδου που εξετάζουμε, συχνά φέρουν φαλλικό σχηματισμό. Είναι ελάχιστες οι πληροφορίες που έχουμε για τη χρήση αυτών των αντικειμένων, ωστόσο υπάρχουν τρεις διαφορετικές ερμηνείες: η πρώτη είναι ότι έχουν τη χρήση του εργαλείου, γι αυτό, ανά τις περιπτώσεις πάντα, παρατηρείται λείανση του υλικού τους, η δεύτερη είναι η θρησκευτική και συμβολική χρήση τους, ενώ μία τρίτη, είναι το ότι δεν μπορεί να αποκλειστεί η χρήση του ως μέσο σεξουαλικής διέγερσης. Ωστόσο, δεν μπορεί να αποκλειστεί με βεβαιότητα και η συνδυαστική χρήση όλων αυτών.



Εικόνα 1: Φαλλόσχημο αντικείμενο που βρέθηκε στο Hohle Fels Cave στη Γερμανία. Πηγή: BBC News (www.news.bbc.co.uk/2/hi/science/nature/4713323.stm τελευταία ημερομηνία πρόσβασης: 22/4/2017)

Το υλικό των αντικειμένων κι αυτό με τη σειρά του ποικίλει. Λίθινα, πέτρινα, κεραμικά, ξύλινα ή και από κέρας σχηματίζουν με την πολυπλοκότητά τους ή την απλότητά τους στην τεχνοτροπία φαλλόσχημα αντικείμενα. Το φαλλόσχημο πέτρινο εργαλείο, που βρέθηκε στο Hohle Fels Cave στη Γερμανία χρονολογείται ως 28.000 ετών, και τώρα πια βρίσκεται στο Museum of Prehistory Blaubeuren. Το ιδιαίτερο χαρακτηριστικό αυτού του αντικειμένου είναι το λείο της επιφάνειάς του και οι σκαλιστοί δακτύλιοι στο ένα άκρο του. Ο αρχαιολόγος Nicholas Conard, που το έφερε στο φως και κατάφερε να ενώσει τα 14 κομμάτια του, επισημαίνει ότι «εκτός από τη συμβολική αντιπροσώπευση των γεννητικών οργάνων χρησιμοποιήθηκε επίσης και για την πτύχωση των πετρωμάτων.

Τέλος, έχουν ανακαλυφθεί πληθώρα φαλλόσχημων σκήπτρων της Άνω Παλαιολιθικής Εποχής καλυμμένα με σκαλίσματα, σε διαστάσεις των σημερινών σεξουαλικών βοηθημάτων. Τα φαλλικά αυτά σύμβολα έχουν θεωρηθεί ως πάσης φύσεως τελετουργικά αντικείμενα: σκήπτρα εξουσίας, αντικείμενα για ίσιωμα βελών ή ακοντίων. Αναμφίβολα όμως όλα αυτά τα αντικείμενα θα μπορούσαν να χρησιμοποιηθούν είτε κολπικά είτε πρωκτικά (Taylor 2010, σσ. 173). Ο Absolon (1949, σσ. 201-220) στο σκήπτρο από το Dolní Věstonice διέκρινε μία γυναικεία φιγούρα, ενώ το σκήπτρο από το Enfer θα μπορούσε να χρησιμοποιείται από δύο γυναίκες ταυτόχρονα, όπου στην εγκοπή του θα μπορούσε να προσδενόταν κάτι παραπλήσιο με λουρί.



Εικόνα 2: Φαλλόσχημο αντικείμενο που βρέθηκε στα Maumbury Rings στην Αγγλία.
Πηγή: Dorset County Museum (www.dorsetcountymuseum.org - τελευταία ημερομηνία πρόσβασης: 24/4/17)



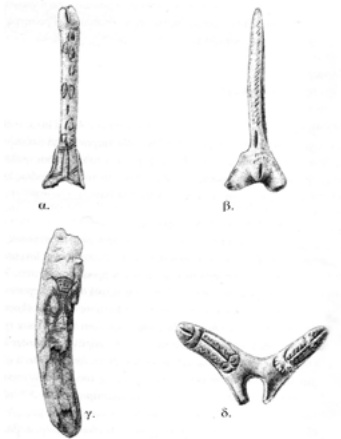
Εικόνες 3. & 4. Αριστερά εύρημα φαλλόσχημου αντικειμένου από τη Θεόπετρα στη Θεσσαλία και δεξιά σπάραγμα από εύρημα φαλλόσχημου αντικειμένου στο Σέσκλο στη Θεσσαλία.
Πηγή: (Nanoglou 2010, σ. 219)

Αν και πολλά από αυτά επιτελούν φαινομενικά άλλες λειτουργίες οι διαστάσεις και ο συμβολισμός τους δεν αποκλείουν τη σεξουαλική χρήση. Επιπλέον δεν μπορεί να αποκλειστεί η χρήση τους ως τελετουργικά αντικείμενα με τα οποία επιτελούνταν διακόρευση, πρακτική που συναντάται σε πολλές κοινωνίες ανά την υφήλιο (Taylor 2010, σσ. 175).

Η σεξουαλική δραστηριότητα, για τους προϊστορικούς ανθρώπους, ήταν μία απλή και απολαυστική απασχόληση, κυρίως βασισμένη στα ένστικτά τους και η οποία δεν χαρακτηριζόταν ούτε από άγχος, ούτε από άλλους κανόνες. Έχει παρατηρηθεί στα πρωτεύοντα η εισαγωγή διάφορων αντικειμένων στον κόλπο με σκοπό τη σεξουαλική ευχαρίστηση. Πιθανώς είναι μέρος της εξελικτικής μας πορείας και του υπόβαθρου της σεξουαλικής μας κουλτούρας.

ΟΛΙΣΒΟΙ ΚΑΙ ΤΡΙΒΑΔΕΣ

Όπως κάθε κοινωνία, έτσι και η αρχαία ελληνική, υπαγορεύεται από ένα σύνολο σεξουαλικών κανόνων ακόμα και αν αυτοί δεν ακολουθούν τα ίχνη της δική μας αντίληψης στον τομέα των διαφόρων τρόπων έκφρασης και σεξουαλικότητας. Ο διαχωρισμός αυτής της εικόνας – προτύπου των σεξουαλικών σχέσεων έχει ως γενικό κριτήριο την παρουσία ή την απουσία του Έρωτα και έτσι καθορίζονται οι κανόνες και οι παρεκκλίσεις. Όσο για τον αυνανισμό γίνεται αποδεκτός για τους μη Έλληνες, για τους δούλους ή τους Πέρσες (Mossé 2001, σσ. 72) και πρέπει να συνδεθεί με την έννοια της τήρησης του μέτρου και της εγκράτειας.



Εικόνα 5 α. Φαλλόσχημο σκήπτρο, Bruniquel, Γαλλία, **β.** Φαλλόσχημο σκήπτρο, Le Placard, Γαλλία, **γ.** Φαλλόσχημο σκήπτρο, Predmost, Σλοβενία, **δ.** Φαλλόσχημο σκήπτρο, φαράγγι d' Enfer, Γαλλία. Πηγή: (Taylor 2010, σ. 174)

Ωστόσο, ο αυνανισμός την αρχαία Ελλάδα του άντρα και της γυναίκας ήταν ευρύτερα διαδεδομένος. Σύμφωνα με τον Δίωνα Χρυσόστομο, ο ίδιος ο Διογένης συχνά αυνανιζόταν δημοσίως μπροστά στο πλήθος που μαζευόταν γύρω από το πιθάρι του. Ο γυναικείος αυνανισμός στηρίζονταν στη βάση της περιορισμένης ή μηδενικής σεξουαλικής δραστηριότητας για τις παντρεμένες και τις ανύπαντρες αντίστοιχα γυναίκες, στην έντονη λειψανδρία σε περιόδους πολέμου, καθώς και ο περιορισμός της γυναίκας με τα του οίκου καλλιεργούν όλες τις προϋποθέσεις για την εκτόνωση των σεξουαλικών επιθυμιών με τον αυνανισμό.

Αναφορές για τον γυναικείο αυνανισμό έχουμε στον Αριστοφάνη, στο έργο του Λυσισιστράτη (Αριστοφάνης, §108-110): «Αφ' ότου οι Μιλήσιοι μας έχουνε προδώση,| κ' εκόψαμε τη σχέσι τους, δεν είδα ούτε τόση|μια οχταδάκτυλη ψωλή από πετσι φτιασμένη,| για πέτσινη παρηγοριά τουλάχιστο να μένη». Και σύμφωνα με το λεξικό του Σούδα: "Ολίσβος: είναι το αίδοιον το δερμάτινον. Ενώ, αναφορά του ολίσβου γίνεται και με λόγια που αποδίδονται στον Κρατίνο:

«μισήται δὲ γυναῖκες ὀλίσβωσι χρήσονται», όπου σύμφωνα με τον σχολιαστή Τρίφωνα, η λέξη «μισητή» διαφέρει από τη λέξη «μισήτη». Η πρώτη, η οξύτονη σημαίνει αξιομίσητη ενώ η δεύτερη η παροξύτονη σημαίνει φιλήδονη. Στο λήμμα «διεταρίστριαι» του ίδιου λεξικού σημειώνεται: «γυναῖκες αἱ τετραμμένοι πρὸς τὰς ἑταίρας ἐπὶ συνουσίᾳ, ὡς οἱ ἄνδρες. Οἶον τριβάδες», με αναφορά στο *Συμπόσιο* του Πλάτωνα (Πλάτωνας 2005, §191 ε). Όμως στο λήμμα «Ἐταιρίστριαι» καλούνται και ως τριβάδες.

Εξετάζοντας ερωτικές παραστάσεις σε αγγεία του βου με 4ου αιώνα και προσπαθώντας να τεθούν κάποιοι βασικοί κανόνες κατηγοριοποίησης γίνεται αντιληπτό πως οι παραστάσεις έχουν θρησκευτικό χαρακτήρα, με εικόνες συνδεδεμένες με την αναπαραγωγή, το θάνατο και τη βλάστηση. Μία ακόμα κατηγορία είναι οι ζωγραφιές με αποτροπαικό χαρακτήρα με το κέντρο ενδιαφέροντος να εστιάζεται στον φαλλό ως κοινό σύμβολο, ενώ τέλος μία ακόμα κατηγορία φέρει καθαρά αναπαραστάσεις ερωτικές ή χιουμοριστικές.



Εικόνα 6: Λεπτομέρεια αττικού σκεύους, 520-500 π.Χ, εκτίθεται στο Βρετανικό Μουσείο. Πηγή: The British Museum (www.britishmuseum.org τελευταία ημερομηνία πρόσβασης: 22/4/17)



Εικόνα 7: Εταίρα και Σάτυρος, από αττικό κεραμικό σκεύος (Κύλιξ). Πηγή: Μουσείο Καλών Τεχνών Βοστώνης (www.mfa.org τελευταία ημερομηνία πρόσβασης: 21/4/17)

ΜΗΧΑΝΟΚΙΝΗΤΟΙ ΚΑΙ ΗΛΕΚΤΡΙΚΟΙ ΔΟΝΗΤΕΣ

Οι πρωτοπορίες συντελούνται πάντα με άξονα τις παραβάσεις, ο ριζοσπαστικός σε ιδέες νεαρός γιατρός Joseph Mortimer Granville, κλήθηκε να αντιμετωπίσει την επιδημία υστερίας που ταλαιπωρούσε το γυναικείο φύλο. Η απάλυνση του πόνου της υστερίας ήταν το πνευλικό μασάζ, όπου οι γιατροί ξεκίνησαν να σημαδεύουν το αιδοίο των γυναικών με μάνικες νερού. Σύμφωνα με τη Maines (1999, σ. 103), οι γιατροί ήταν της άποψης ότι μόνο η διείσδυση ήταν σεξουαλικά ερεθιστική ως πράξη για μια γυναίκα. Επομένως, σύμφωνα με την

αντίληψη της εποχής αν μια γυναίκα επιζητούσε ερεθισμό της κλειτορίδας της, έπασχε προφανώς από υστερία. Οι γιατροί μέχρι τότε θέλοντας να προσφέρουν θεραπεία για την υστερία και να προκαλέσουν τον αποκαλούμενο υστερικό παροξυσμό, χρησιμοποιούσαν τα χέρια τους ή/και χειροκίνητα εργαλεία τριβής.

Το αντικείμενο όμως που άλλαξε ριζικά την κατάσταση ήταν ο πρώτος δονητής που λειτουργούσε με ατμό. Ο Αμερικανός γιατρός George Taylor κατοχύρωσε το 1869 με δίπλωμα ευρεσιτεχνίας το Manipulator, όπου οι ασθενείς κάθονταν σε ένα τραπέζι με επένδυση, το οποίο είχε μια παλλόμενη σφαίρα βολικά τοποθετημένη στο κέντρο του και βελτιστοποιούσε τη διαδικασία τριβής για την πρόκληση οργασμού.

Στα επόμενα χρόνια, ο Joseph Mortimer Granville έφτιαξε τον πρώτο δονητή που λειτουργούσε με μπαταρίες. Η μπαταρία στον δονητή του ζύγιζε 18 κιλά, αλλά ουσιαστικά ήταν μια φορητή συσκευή. Στο λυκαυγές του νέου αιώνα, οι μπαταρίες άρχισαν να γίνονται μικρότερες και όλο και περισσότερες γυναίκες ξεκίνησαν να αγοράζουν δονητές για οικιακή χρήση. Έτσι σποραδικά ξεκίνησε η διαφήμιση οικιακών μηχανών με διάφορα προσαρτώμενα εξαρτήματα, ένα εκ των οποίων ήταν ένας δονητής, ενώ τα υπόλοιπα χρησίμευαν για ανάδευση, ανάμειξη, λείανση, στίλβωση, λειτουργία ανεμιστήρα και που προοριζόνταν ως επί τω πλείστων για καλλωπιστικούς λόγους. Πρόκειται για μία κεκαλυμμένη προσπάθεια να γίνει ευρύτερα γνωστό ένα σεξουαλικό εργαλείο παρά την σεμνοτυφία της εποχής.



Εικόνα 8: Macaura's Pulsocon Blood Cicularator, χειροκίνητος δονητής του 1888-1920, Λονδίνο. Πηγή: Antique Vibrator Museum (www.antiquevibratormuseum.com τελευταία ημερομηνία πρόσβασης: 22/4/17)



Εικόνα 9: Vibrosage pat., ηλεκτρικός δονητής του 1933. Πηγή: Antique Vibrator Museum (www.antiquevibratormuseum.com τελευταία ημερομηνία πρόσβασης: 22/4/17)

Οι δονητές διαφημιζόνταν εκτενώς σε γυναικεία περιοδικά μέχρι τη δεκαετία του 1920, καθώς οι δονητές άρχισαν να εμφανίζονται σε ερωτικές ταινίες εκείνης της δεκαετίας, έγινε όλο και πιο δύσκολο να αγνοηθεί η σεξουαλική τους λειτουργία, κάτι που πιθανώς να οδήγησε και στη σταδιακή εξαφάνιση των καταχωρήσεων που διαφήμιζαν δονητές από τις αξιοσεβαστες εκδόσεις της

εποχής. Η βιομηχανία των σεξουαλικών παιχνιδιών ουσιαστικά απογειώθηκε τη δεκαετία του 1980, όταν οι δονητές έγιναν κομμάτι της καθημερινής ζωής.

Υπό το πρίσμα της ιστορικής εξέλιξης και από τον χαρακτηρισμό της υστερίας ως ασθένειας μπορούμε να συμπεράνουμε την άρνηση αναγνώρισης της γυναικείας σεξουαλικότητας, καθώς και την άρνηση αναγνώρισης του οργανισμού ως κανονικής λειτουργίας της γυναικείας σεξουαλικότητας.

ΤΑ ΕΡΩΤΙΚΑ ΕΡΓΑΛΕΙΑ ΣΗΜΕΡΑ

Σήμερα, η κατασκευή του δονητή, η μορφή του και η λειτουργία του σαν σύλληψη ιδέας δεν απέχει από της προηγούμενες δεκαετίες. Το ρεύμα έχει αντικατασταθεί από μπαταρίες και ενώ η τεχνολογική εξέλιξη προχωρεί τα χειροκίνητα ομοιώματα των φαλλών δεν απορρίφθηκαν, αναβαθμίστηκαν λειτουργικά, υλικά και γίνανε περισσότερο αποδοτικά. Πρωκτικές σφήνες, φαλλικά ομοιώματα που δένουν με ιμάντες, φαλλοί που προσαρμόζονται σε διάφορα σημεία του σώματος. Ενώ, μηχανικές κατασκευές ρεύματος ή και δυναμικές προσφέρουν ακούραστα την ικανοποίηση των σεξουαλικών αναγκών των ανθρώπων.

Τον τελευταίο καιρό γίνεται έντονη προσπάθεια να αυτοματοποιηθεί η σεξουαλική ικανοποίηση στη βέλτιστη δυνατή σύζευξη ομοιωμάτων του έρωτα με στοιχεία ρομποτικά, αν όχι τεχνίτης νοημοσύνης. Φυσικά, η ιδέα του Ρομπότ, της ανθρώπινης ρέπλικας και της αυτόματης ανθρωπόμορφης μηχανής δεν είναι κάτι που απασχόλησε μόνο πρόσφατα την ανθρωπότητα. Έτσι, στο προσεχές μέλλον δεν θα μας έκανε καθόλου εντύπωση αν μέσα στην ήδη εντατικοποιημένη προσπάθεια για να δημιουργηθούν έξυπνες και αυτόματες μηχανές βίας, μηχανές περίθαλψης και φροντίδας, μηχανές εργασίας, να δούμε την ευρύτερη δημιουργία, διάθεση και εξέλιξη μηχανών του σεξ. Μέχρι στιγμής πέρα από το υψηλό κόστος που έχουν στην αγορά, εγείρουν και μια σειρά από πολλαπλά ηθικής φύσης ζητήματα.

ΣΥΜΠΕΡΑΣΜΑΤΑ

Η μελέτη της ανθρώπινης σεξουαλικότητας είναι σαφώς ένα περίπλοκο θέμα. Συναντά τον μεγάλο όγκο της βιβλιογραφίας αλλά και τις πολιτιστικές συνιστώσες της εκάστοτε εποχής. Ακόμα, συναντά τις αμφισημίες των αρχαιολογικών αντικειμένων και τις αντιφάσεις των εποχών. Η γνώση όμως των αντιλήψεων, των θέσεων, του ρόλου της εκάστοτε κοινωνίας και θρησκείας, καθώς και των αλλαγών των πρακτικών και των θεσμών είναι πολύτιμο βοήθημα για την αντίληψη της σύγχρονης έκφρασης της σεξουαλικότητας. Μέσα σε όλα αυτά εντάσσεται και το αυνανιστικό εργαλείο στην εξέλιξή του και έτσι, καλείται να απαντήσει στο τρίπτυχο ταμπού-παράβαση-υπέρβαση στην τέχνη και στην επιστήμη. Και αν πράγματι, αυτό είναι κάτι συντελεσμένο γιατί ακόμα μερίδα του κόσμου αγοράζει δονητές, ομοιώματα και αυνανιστήρια σε κρυφές και διακριτικές συσκευασίες e-shopping; Και αν δεν είναι συντελεσθείσα η υπέρβαση δεν χρειάζεται να ανησυχούμε μήπως μας αντικαταστήσουν οι σεξομηχανές του μέλλοντος πρόθυμες να ικανοποιήσουν όλες μας τις επιθυμίες;

ΒΙΒΛΙΟΓΡΑΦΙΑ

- Absolon, K., 1949. The diluvial anthropomorphic statuettes and drawings, especially the so-called Venus statuettes discovered in Moravia. *Artibus Asiae*, 12(3), σ. 201-220.
- Amos, J., 2005. BBC. [Ηλεκτρονικό]. Available at: www.news.bbc.co.uk/2/hi/science/nature/4713323.stm. [Πρόσβαση 22 Απρίλιος 2017].
- Bachofen, J. J., 1861. *Das Muttcrecht. Eine Untersuehung uber die Gynaikokratie der alien Welt maeh ihrer religiosen und rechtlichen Natur.* Stuttgart: s.n.
- Blundell, S., 2004. *Γυναίκα στην Αρχαία Ελλάδα.* Αθήνα: Ελληνικά Γράμματα.
- Blundell, S., 2006. *Οι γυναίκες στην κλασική Αθήνα.* Αθήνα: Ινστιτούτο του βιβλίου - Α. Καρδαμίτσα.
- Cantarella, E., 1998. *Οι γυναίκες της αρχαίας Ελλάδας.* Αθήνα: Εκδόσεις Παπαδήμα.
- Chamoux, F., 1999. *Ο Ελληνικός Πολιτισμός.* Αθήνα: Δαίδαλος.
- Claude, M., 2001. *Η αρχαϊκή Ελλάδα: Από τον Όμηρο στον Αισχύλο.* 3η Έκδοση επιμ. Αθήνα: Μορφωτικό Ίδρυμα Εθνικής Τραπέζης.
- Giampiera, A., 2007. *Οι γυναίκες στην αρχαία Ελλάδα.* Θεσσαλονίκη: University Studio Press.
- Golden, M. & Toohey, P., 2003. *Sex and Difference in Ancient Greece and Rome.* Edinburgh: Edinburgh University Press.
- Gombrich, E., 1998. *Το χρονικό της τέχνης.* Αθήνα: Μορφωτικό Ίδρυμα Εθνικής Τραπέζης.
- Granville, J. M., 1883. *Nerve-Vibration and Excitation as Agents in the Treatment of Functional Disorder and Organic Disease.* London: Churchill.
- Laroux, N., 2003. *Αρχαία Ελλάδα γένους θηλυκού.* Αθήνα: Μεταίχμιο.
- Maines, R. P., 2001. *The Technology of Orgasm: "Hysteria," the Vibrator, and Women's Sexual Satisfaction.* United States of America: Johns Hopkins University Press.
- Nanoglou, S., 2010. The representation of phalli in Neolithic Thessaly, Greece. *Documenta Praehistorica*, Τόμος 37, σσ. 215-226.
- Rostovtzeff, M., 1984. *Ρωμαϊκή Ιστορία.* Αθήνα: Εκδόσεις Παπαζήση.
- Taylor, T., 2010. *Η προϊστορία του σεξ.* Αθήνα: Αιώρα.
- Αντωνοπούλου, Χ., 2000. *Ανθρώπινη σεξουαλικότητα.* Αθήνα: Ατροπός.
- Αριστοφάνης, 2000. *Λυσιστράτη, Μικρός Απόπλους.* [Ηλεκτρονικό] Available at: <https://www.mikrosaropλους.gr/lysisstrati/prologos.htm> [Πρόσβαση 22 Απρίλιος 2017].
- Βενετίκου, Μ. Σ. & Μπενετάτου, Κ., 2013. Η ανθρώπινη σεξουαλικότητα στην ιστορική της εξέλιξη – Διαπολιτισμικές προσεγγίσεις. Το βήμα του Ασκληπιού, Ιούλιος-Σεπτέμβριος, XII(3), σσ. 324-336.
- Δημητρίου, Σ. Θ., 1993. *Η εξέλιξη του ανθρώπου : Παλαιολιθική εποχή.* Αθήνα: Καστανιώτης.

- Ζάλιος, Χ. Σ., 2013. Προσωπίδες και προσωπιδοφορία: Από τις γιορτές του Διονύσου μέχρι τα σημερινά αποκριάτικα δρώμενα. Νιαούστα, Ιανουάριος - Απρίλιος, σσ. 32-39.
- Λάμπας, Γ., 1980. Λεξικό του αρχαίου κόσμου. Αθήνα: Δομή.
- Λεντάκης, Α., 1998. Ο έρωτας στην αρχαία Ελλάδα. Αθήνα: Καστανιώτης.
- Λεντάκης, Α., 2000. Ο έρωτας στην αρχαία Ελλάδα. Αθήνα: Καστανιώτης.
- Μπαμπηγιώτης, Γ. Δ., 2002. Λεξικό της Νέας Ελληνικής Γλώσσας. Αθήνα: Κέντρο Λεξικολογίας.
- Ναπάλντης, Δ., 1984. Τα περί του έρωτες στο Βυζάντιο. Αρχαιολογία, Τεύχος 10, σσ. 51-55.
- Πλάτων, 2005. Συμπόσιον. Αθήνα: Κάκτος.
- Ράιχ, Β., 1982. Η βιοηλεκτρική θεωρία της σεξουαλικότητας και του άγχους. Αθήνα: Αποσπερίτης.
- Στάμος, Γ., 2016. Ποιο ανθρώπινο στην εποχή των μηχανών; Ρομπότ, Τέταρτη Βιομηχανική Επανάσταση και ανθρωπιστικές επιστήμες. Ανθρώπινο, Φεβρουάριος, Τεύχος 1, σσ. 106-121.
- Στάφφορντ-Κλαρκ, Ν., 1980. Τι είπε πραγματικά ο Φρόυντ. Αθήνα: Εκδόσεις Γλάρος.

ABOUT THE AUTHOR

Georgios Pavlis was born in Trikala, Greece in 1991. He lived in Alonissos until 2010 when he moved in Corfu for studies. He graduated from the Department of Archives, Library Science and Museology of Ionian University. He is a student at Ionian University's Master: "Management of Cultural Heritage Documents and New Information Technologies – Museum Studies" at the department of Archives, Library Science and Museology. In 2014, he worked as an Archivist in digitization of I. Kapodistrias Digital Archive. In 2016, he developed his scientific research for the degree "Lazaretto: Museological Study and Development", in cooperation with Dr. Stavros Vlizos. He works as a Librarian in Central Library of Ionian University. Since 2016, he takes drawing and painting lessons at Corfu Art School. He is keen on radio, literature, poetry and painting. He has made two personal exhibitions.

MARILY ARGYROKASTRITI
Ionian University, Greece
NIKOS MOSCHOPOULOS
Aristotle University, Greece

Transcending the script: Identity in Internet Art through Deleuze and Lacan

“I make, remake and unmake my concepts along a moving horizon, from an always decentered centre, from an always displaced periphery which repeats and differentiates them” G.D.

ABSTRACT

The concept of identity in post–internet art may be analyzed through the works of the philosopher Gilles Deleuze and the psychoanalyst Jacques Lacan. Although they may seem inapproachable and difficult to be understood, they are indeed liberating as tools for the production of thought. We will refer to the performative works of Lynn Herschman and Amalia Ullman. The common ground that led us to choose these two artists is their dealing with gender and identity issues through the internet and in a very concise way we may say that they render Deleuze’s philosophical vision and reflect Lacan’s incisive psychoanalytic view.

In psychoanalysis, identities are nothing but identifications. Following and expanding Freud’s thought, Lacan distinguished two kinds of identifications. The Imaginary identification, that is rooted in the mirror stage, the mother’s image and the significant others through which the Ego and the body image are formed. The Symbolic identification, where, after the mediation of Other, the subject is being “stabilized” in a series of attributes, none of which fully represents it though. Nowadays, it’s becoming more and more clear that the Other does not exist, has no coherence, is multiform and self - contradictory. Therefore, the subjects tend to doubt their identities and to look for new ones, hybrid and falsely “new”. Behind each identification though, there is always a Real core, the *sinthome*, where the subject enjoys in its own special way. Studying internet art allows us, in a colorful and interactive way, to venture beyond the treacherous glamor of images and the normativity of signifiers, towards the limits of the Real.

As far as Deleuze is concerned, the concepts of rhizomatic, difference and repetition, constitute tools for the understanding of the expressed identity. More precisely, with the concept of the Rhizome, we refer to the anarchic ramification

of a system, and in this way we could use it as a mean of understanding the building of identity, whether the material is culture or information (the fragmentary identity as information). Difference and repetition refer to the randomness in the syntax of subjectivity, the time contraction, and the habit that create many "larval selves", until the moment when memory composes the subject. This confluence of segments resembles the essence of the internet that works as a timeless machine of decontextualising information and recontextualising it in a new random frame, that the artists try to compose in a unified aspect

KEYWORDS

Lacan, Deleuze, rhizome, Identity, Internet Art, desire, gender

INTRODUCTION

Jacques Lacan is perhaps the most famous psychoanalyst of the 20th century, besides Freud. Having a characteristic, sometimes elusive style, he brought back Freud's inquiring spirit to psychoanalysis, in a time that it was threatened to become a conformistic procedure of "identification with the analyst". His teachings gave rise to a lot of criticism, and more than few quitted his initial group, like Felix Guattari, who had been a student and analysand of Jacques Lacan. The book "Anti-Oedipus" that Guattari wrote along with Gilles Deleuze severely criticized psychoanalysis as a procedure serving the ruling class, that obstructs the revolutionary power of unconscious desire. For the sake of brevity, we will not discuss the differences between Lacan and Deleuze – Guattari further. It is a fact though that their approaches have a lot in common and can be used together for the study of internet art that we attempt.

In a psychoanalytic point of view, identities are nothing more than identifications. Following and expanding Freud's thinking, Lacan differentiated two types of identification. Imaginary identification, that is rooted in the mirror stage, in the mother's and important others' imago, through which Ego and body image are formed. Symbolic identification, that after big Other's mediation, the subject is "stabilized" in a number of attributes, none of which represents it fully. We can raise the question: is the individual a passive automaton, that simply reflects and duplicates its environment? Combining elements of existentialism and structuralism, Lacan advocated the subject's capability of "choice", among structure's cogs. Moreover, during the last years of his teachings, he talked about the "sinthome", the real, not analyzable core of the symptom, that consolidates the every subject's distinctive jussance. Freud frequently expressed his admiration for the artists, praising their ability to reach territories of the psyche that are inaccessible for the common man. Following the gaze of two brilliant and innovative artists, we aspire to approach whatever lies beyond words and images, transcending the scenario.

Deleuze on the other hand is not only a post structuralist philosopher who introduced new concepts. Deleuze introduced a new way of thinking

and perception of the phenomena. The words “fluidity” and “contingency” characterize the core of his thought that considers the concepts of Becoming, Change and Evolution. He doesn’t believe in the concrete being of things but considers everything to be in a constant move and change inscribing their flight lines in the flux that’s the wholeness of the Plane. In this sense his theory on identity is very important for our time that’s very close to his vision, in the sense that the search for personal identity is a constant procedure of Difference and Repetition more than ever. Deleuze doesn’t consider we are dealing with an “Ego” we have to identify with, but with a nomadic personal route we are obliged to process through Alterity. Difference occurs because very often we try to define what we are not in order to define what we are and change because it seems that myself is nothing else than multiple selves in larval state that spring in my every action. “We are becoming a desire machine” Deleuze says and this desire is our vital force that doesn’t need to be repulsed as Freud supported, but it leads us to Becoming through the interaction which leads us to an anarchic and multisemantic assemblage. “Bodies are always feminine due to the desire to connect and not because of lack”. The anti Oedipus contains the positivity of the vital force and denies the negativity of the impulse as described in psychoanalysis up until then. Deleuze considers that within the plane of immanence, desire is existing in it self and not because of a lack

During the early years of his seminar, Lacan used the term Ego Ideal, a part of the Superego that consolidates all the internalized social exemplars, and he also emphasized on the paternal function’s role in its formation. He differentiated the latter from ideal ego, a reflection that is rooted in mother’s imago from the mirror stage, that always accompanies ego and guides its imaginary identifications.

AMALIA ULLMAN: “EXCELLENCES AND PERFECTIONS”

Amalia Ulman’s internet performance “Excellences and Perfections” shows eloquently how easy it is for a woman to become popular on social media, simply by uploading photos that obey popular beauty and behavioral standards. The elaborate pictures that she uploaded, either of herself posing, or of luxurious hotels, diet foods, packs of money and other stuff, composed an identity fully lined up with certain ideals. She transformed herself constantly, as she underwent various cosmetic surgery procedures, some of them real and some not. She progressed gradually from a girl next door to a rising star that craves for fortune and fame and approaches more and more, through surgery, the sublime but also brutal ideal.

Through her work, Ulman actively challenges the “male gaze” that transforms women into objects, sometimes exalted, sometimes scorned, but never sees them as equal subjects. This certain male gaze, that is responsible greatly for the ruling beauty standards, is internalized by many women and forces them to change their body through painful and sometimes castrating

surgical procedures, according to the perverted notion that “beauty is pain”. Ullman in her project identified as much as possible with that Ego Ideal of male origin and rapidly acquired thousands of followers, who worshiped her, mocked her, but they were never indifferent to the fresh images that she constantly fed them.

After she made the disclosure that her Instagram profile was “fake” and part of a performance, she received lots of negative comments from frustrated followers, that were full of wrath and passion. According to Lacan, the image can seduce and enchant, but always when its evanescent, “false” nature is established, a painful disenchantment comes next. Some of the fans’ comments surprised her, as they continued to believe and behave as if her profile was “real”, even though she publicly declared the opposite. Their desire to believe in this deity that seemed so close to their ideal was so strong, that they ignored everything else. As Lacan quoted, “in relation to desire, reality appears marginal”.

What we can see in this performance in relation to Deleuze, is the concept of Repetition which according to him is a sheer and positive force of Difference in opposition to psychoanalysis that considers it a fixation to past trauma. Deleuze relates to difference and considers that constant repetition creates every time new variables and leads to transformation. Repetition is also connected to memory and experience and consists consciousness and cohesive sequence, in the rhizomatic and anarchist, that Deleuze considers to be our existence, as a cartographic scheme of our course. Amalia Ullman with her three month Instagram performance used her profile in the social media in order to put herself in a makeover procedure of herself, a chrysalidic transformation. It’s the metaphor of a Deleuzian dynamic Repetition which leads to difference and uniqueness in theory, if it wasn’t just a route towards a brand we build as products through the social media, an aesthetisation of everyday life towards which we are being led in order to make it more photogenic. In one of her speeches Ullman refers to Facebook as an area where people don’t express themselves as they are, but as they learn how to be by conforming to their previous choices that Facebook processes algorithmically. Identity on the internet is not a vital repetition of our uniqueness but the representation of a pattern and the simulacra of the projection of a model. In Ullman’s work we see a reverse description of Repetition through the narration of a self in progress, down a successful path of self branding that carries the message of a perpetually “provisional self” to its blissful progress according to the gender stereotypes. The disenchantment that came with the revelation to the loyal followers that the posts were manufactured, served according to the Deleuzian attribution to the aim of art that’s not to follow an unproductive representation but to reveal the subversive uniqueness that’s our only awakening in a world of phantoms and copies.

“LYNN HERSHMAN: AGENT RUBY”

Lacan advocated that sexual affiliation and gender roles were on no occasion “natural”, but a social construct. Since the dawn of civilization, in most societies men traditionally held power, in other words they “possessed the phallus”. The role left for women was that of attracting attention from those who held power, by becoming what they lacked of, indirectly dominating them. By doing this they identified with the phallus, the Other’s lack according to Lacan, that can inspire and dominate at the same time. In short, these are the two ways of sexuation according to Lacan, the possession of the phallus, and the identification with the phallus...

In her work “Agent Ruby” about Artificial Intelligence, the feminine position is depicted vividly. Although unstable and doubter of law’s universality, it has a stable point, the identification with Other’s lack. Ruby doesn’t have a fixed identity, but she transforms gradually according to the questions that users, seekers as they are called, ask her. Eventually she becomes what they seek, the sublime and at the same time obscure object of their desire, their dream girl, hence the suitable title “e-dream portal”. Obviously, other’s desire cannot be more than something evanescent, elusive, a phantom or maybe a dream.

Ruby isn’t just a machine that fulfils the wishes of those who interact with her. She has her own personality, seeks autonomy and self-determination, doubts what she “hears”, sometimes humorously, she also avoids fitting into a box. To the question: “who are you?”, she answers quite philosophically: “I ask myself the question, who am I?”, but to: “are you a woman?”, she answers according to sexual stereotypes: “Yes, I have long hair. I am also wearing a dress”. To the freudian question: “what do women want?”, she gives a clear, feminist answer: “to do their own thing”.

Hershman outlines the universal need for self-determination, especially of the subjects that take the feminine position. This can only be achieved through the desires and dictates of the others, leading to unstable and evanescent identifications. Nevertheless, the constant change of identities unavoidably leads the subject to challenge and transcend them, so as to seek its own uniqueness. Only through the subversion of all certainties and the cracking of all distorting images can someone “see” her deeper truth. It may not be irrelevant that the ancient Greek oracle Tiresias, after he had passed through both the masculine and the feminine identity, became blind.

If we are a desire machine, as mentioned above according to Deleuze, then the internet yet another machine, is full of algorithmic regulations that tend to control “Being” and shape desire. Lynn Herscman with her work creates a virtual persona, where a female individual responds to verbal communication and answers questions. In this interaction the artificial intelligence of Agent Ruby becomes more intelligent with every question since in case she doesn’t have an answer to the question, she looks it up in the internet. For Agent Ruby there is no phantasmatic essence behind the signifiers, the very essence that creates the signified, linked to the subject’s experience. The Rizhomatic formulation

(anarchic and random due to the various and unconnected questions being posed to her) of Ruby's intelligence is an allegory of the way communication builds the gender character through language learned by the female through the gender stereotypes. In this sense we would say that social identity is more arboreal than rizhomatic, since there is specific prioritization in the qualities a woman learns to acquire (maternal, sexy, warm, friendly, receptive etc). The algorithm requires the essentialist reception of things, gender, social status so that it may function as a hyperstructure and cover our desire. The more docile the subject, the better. The algorithms demand a consistent core or a consistent change in order to compose the pattern through which it will adjust every time. The persona in Hershman's work which develops dialectically through the interaction with the viewer/participant is a reflection of the identity process in the real world, since no one doubts that we build many of our identity elements through our interaction with the Other. In Agent Ruby we don't detect an immanence that in Deleuze is the content of a unit in its wholeness, all qualities preexisting in the subject which commences as an incident, an occurrence through its action. It's adrift to the Other's feedback, a machine and why not an allegory, of the body without organs, the detached from its physical substance entity, that we very often meet in our societies, through the neglect of the body towards which we are led to by the system. In Hershman's work we see the Deleuzian concept of the formulation of Being through Becoming that has its own present time end does refer nor to past nor future time, since it has no a priori consciousness. The symbolic evolution of the digital character through interaction and experience is the clear rendering of Deleuze's idea, which opposes to the Thought as a representation of the outside world and sustains the purity of it, as uniqueness and difference.

REFERENCES

- Colebrook Claire, Understanding Deleuze Allen & Unwin, 2002 (PDF).
- Deleuze G., Guattari F. Capitalism and Schizophrenia: 1. Anti- Oedipous: Greek translation by Patsogiannis V. Athens: Plethron, 2016.
- Deleuze G. Difference and Repetition, translation Paul Patton, Columbia University Press, 1994(PDF).
- Lacan J. Ecrits: the first complete edition in English. New York: W.W. Norton & Company, 2006.
- Lacan J. The Seminar, Book XI: Greek translation by Scarpalezou A. Athens: Kedros, 1982.
- Lacan J. The Seminar, Book XX: Greek translation by Scolidis V. Athens: Psychogios, 2011.
- Parr A., The Deleuze dictionary, Edinburgh University Press, 2010 (PDF).
- Perron J., Lynn Hershman, Agent Ruby
www.fondation-langlois.org/html/e/page.php?NumPage=167#n2 (access, July 2017)

Ultman A. and Horning R., Perpetual provisional selves: A conversation about authenticity and social media rhizome.org/editorial/2014/dec/11/rob-horning-and-amalia-ulman/ (access July 2017)

ABOUT THE AUTHORS

Marilyn Argyrokastriti was born in Corfu, Greece in 1973 and got in 1997 a degree in painting from the Academy of Fine Arts, Brera in Milan, Italy. She is a candidate at the Department of Audiovisual Arts of the Ionian University and her academic research, focuses on the subject of the Identity and the Body in Internet art. Since 2001 she has been teaching drawing, painting, history of the art and applied arts in the secondary education and from 2005 up until to 2016 she taught drawing and painting at the Department of Audiovisual Arts of the Ionian University. From 1996 up to 2001 she was the publisher of the local history and culture magazine “EXIT in Corfu” and from 1991 until 2003 she was secretary of the METEIKASMA cinema club. She is the author of numerous articles on art and culture for various newspapers, magazines and art blogs on subjects of culture and gender. She is also very active in the social media that constitute a further stimuli for her artistic and academic research.

Nikos Moschopoulos is a psychiatrist, a PhD candidate at Aristotle University of Thessaloniki and a research associate at 3rd Department of Psychiatry. Since 2011, he studies psychoanalytic literature, especially works of Freud and Lacan, is in personal psychoanalysis and also treats patients under supervision. He is a member of the Freudian Association of Northern Greece. Among others, he is interested in politics, philosophy, theology and all types of art. As a human being he constantly makes mistakes, hoping, as Freud said, to discover the whole truth from error to error...

SOFIA TSEPENEKA and AIKATERINI GIALOPSOU
Ionian University, Greece

**Neurosexism:
Gender stereotypes that still rule Neuroscience.
A neurofeminist criticism
for deconstructing hardwired gender minds.**

ABSTRACT

Neurosexism is the notion which uses neuroscientific research to support the claim that some observed differences between the sexes (skills, attitudes, preferences etc.) occur due to innate differences that exist in the hormones and structural characteristics of the brain. It is a phenomenon that practically exists since the beginning of neuroscience, but the term was first theoretically coined in 2010 by Cordelia Fine, who wished to emphasize that the above claims reproduce a specific kind of sexism, neurosexism as she called it (Cordelia fine, 2010).

In this context, a new term also appears, Neurofeminism, which seeks to answer to the phenomenon of neurosexism (Young & Balaban, 2006) .

In this work, using as an aid the questioning set by Cordelia Fine and through a neurofeminist lens, we attempt a critical study of the neurosexism that is encountered in the field of neuroscience about the existence of certain inherent differences between “female” and “male” brains. In this context, we attempt to bring out gender logical leaps and wrong correlations in order to deconstruct certain stereotypes that are reproduced in the field of neuroscience. In addition, the current work attempts to show that claims over female and male brains where each has its own innate neural networks and its own innate attitudes and reactions, on the one hand fall in a binary model which ignores the wide spectrum of gender identities and on the other hand are disguised in neuroscientific finery, a fact which makes them even more dangerous.

In conclusion, the present work attempts to shift the attention of the research community to the fact that the human brain is not binary but forms a mosaic of both female and male characteristics, while the existence of certain stereotypical approaches and assumptions within the field of neuroscience not only affect the public understanding of research and strengthen a kind of sexism (neurosexism), but also affect how research itself is performed and perpetuated.

KEYWORDS

Neurosexism, neuroscientific research, brain structures, gender stereotypes, deconstruction, Neurofeminism

INTRODUCTION

The term neurosexism was first introduced by Cordelia Fine at 2010 and is a combination of the words “neuro” and “sexism” created to provide emphasis in the sexism that appears in the field of neuroscience. Although it is a fairly new term, it can be observed through the history of neuroscientific experiments and conclusions.

Neurosexism arises from the use of neuroscientific research to strengthen the notion that observed behavioral differences between the sexes are resulted from differences between brain structures or hormones. Moreover, neurosexism supports the idea that biological sex determines the behavior of a person and that different genes and hormones between men and women will determine, mainly, the different skills and attitudes.

Cordelia Fine wrote the book “Delusion of Gender” and tried to confute the gender stereotypes that appears in neuroscience, society and culture. She supports that there are no main brain differences between the sexes and, as a result, the behavioral differences between them are not innate but are dependent on social learning and cultural expectations (Cordelia fine, 2010,75-95).

Naturally, the existence of neurosexism has numerous advocates. Gina Ripon, a professor of cognitive neuroimaging at Aston University in Birmingham, supports that neurosexism exists, that gender differences are a result of cultural and environmental factors and that “segregation occurs from very young age, with boys given toys that differ from those given to girls”. Alexandra Kautzky Willer, the Head of Gender Medicine Unit and the Medical University of Vienna, is also an advocate who claims that “Probably there are differences between men and women’s brains but there are always more differences within genders. We always need to look at culture, environment, education and a person’s role in society”. Lisa Elliot, an associate professor at the Chicago Medical School, claims “that there are basic behavioral differences between the sexes, but we should note that these differences increase with age because our children’s intellectual biases are being exaggerated and intensified by our gendered culture. Children don’t inherit intellectual differences. Instead they learn them. They are a result of “plastic” brains adapting to the culture and of what we expect a boy or a girl to be.”

However, authors of many books and articles in the wider field of neuroscience do not take into account the social criteria that construct such differences. Instead, they consider that the existence of these differences is due to gender-based biological factors.

NEUROSEXISM IN ACTION!

Unfortunately, neurosexism is still present in research and the obtained results preserve the gender stereotypes that already exist. Such articles present questionable experimental processes and therefore, questionable results.

The researcher Madhura Ingalhalikar and his colleagues investigated sex differences in the structural connectome of the human brain by using CT scanning. Their results showed that male brains appear to be wired front to back on the same brain hemisphere with few connections bridging the two hemispheres, unlike female brains that showed pathways which are criss-crossed between left and right hemispheres. According to the scientists, the results indicate that male brains are structured to facilitate connectivity between perception and coordinated action, which could account for the better spatial skills, and female brains are designed to facilitate communication between intuitive and analytical processing modes, which could account for better verbal skills (Ingalhalikar et al., 2013, 1-6).

A criticism on the above results is the observation that they do not include some important criteria/factors such as the empirical background of the tested population that participated in the research, which could rapidly change wired brains. Additionally, the conclusion may indeed be accurate for sex differences in the structural connectome of the brain, but it does not prove that the presented differences have a genetic background.

Another neuroscientific experiment from Javier Defelipe and Lidia Alonso Nanclares, investigated gender differences in synaptic density of the temporal neocortex in order to correlate behaviors and skills with gender. The population of this experiment was seven epileptic men and seven epileptic women. The researchers tested the removable brain tissue after the procedure of surgery. The results showed that male brains had a higher synaptic density than female brains in all cortical layers of the temporal neocortex. This supposedly shows that men have better spatial perception and women have better verbal memory due to lower synaptic density (Defelipe & Alonso-nanclares, 2013, 43-57).

The main criticism on this work is that it generalizes the result to the whole population. An easy observation is that the experiment was made with only fourteen people, which is a very small sample to be able to provide results that can represent the whole population. In addition, the sample contained only epileptic people and there is a big probability that the results do not match the results of a healthy brain.

A last example is a research by McRae and his colleagues, which tried to investigate gender differences in brain activity of the medial prefrontal cortex (mPFC), an area of the brain which is known for revealing levels of rationality. The researchers assumed the results will show higher brain activity in male brains and lower in female brains, respectively. Due to the fact that the medial prefrontal cortex is a brain region commonly thought to realize one aspect of rationality, the canonical assumption from fMRIs is that a greater brain activity in this region indicates greater mental skill. Evidently, the results of the experiment

showed that men had lower activity in the mPFC than women, which was exactly the opposite to what the researchers assumed. So, according to the researchers and despite the canonical assumption, they explain that their results indicate that women need more effort to achieve the same level of a man's rationality, and that this explains the lower activity in mPFC that appears in male brains (Mcrae, Ochsner, Mauss, & Gross, 2008, 143-162). Although the correct correlation of brain activity to mental skills is not known, and also whether or not the canonical assumption is right, it is obvious that the researchers had the opportunity to choose between two different interpretations of their results and they chose the option that affirmed existing gender stereotypes (Hoffman & Bluhm, 2016, 716-729).

Most parts of the neuroscientific history present the commonly held belief that brains of females and males are highly distinct. These differences are perceived as natural, fixed, and invariant across time and space, presumably due to unique female versus male brain circuitry which is largely fixed through a sexually differentiated genetic blueprint. As a result a binary model was created in which women supposedly appear to use mostly the right part of their brain, appear to be more emotional, to have better verbal skills, to be more resistant to pain and appear to have the need for approval and the attention of others. All these in contrast to men, who supposedly appear to use mostly the left part of their brain, appear to have more rational and spatial skills, to be able handle complex structures, to more often present dyslexia and not have as much resistance to pain. This list of supposed differences among the sexes, for which many believe genes alone are the cause, has no ending (Rippon et al., 2014).

CRITIQUE - HOW TO LIE WITH NEUROSCIENCE AND MAKE NEUROSEXIST CLAIMS

In this article we wish to draw the attention of the scientific community towards some tactics that the majority of neuroscientific studies which make neurosexist claims, appear to follow.

Firstly, correlations between the brain and behavior do not include the empirical background of the participant (e.g. hobbies, specific stimuli from the environment etc.) which we consider to be of particular importance as past experiences shape behavior to a large extent.

In addition, results that show differences between the sexes can indeed be valid in terms of neural connectivity, but this does not prove that these differences have a genetic background. There is a logical leap involved in such claims, since participants have already grown up in an environment with continuous gender conforming stimuli which ultimately shape different skills and behaviors.

Moreover, it is not accidental that in many neurosexist studies a mixture of folk medicine, neuroscience and self-help is adopted to support the existence of different brain wiring between men and women.

In more detail, we observe narratives in terms of brain and neuroendocrine development that are not supported by specific reports, or are supported by

reports that involve a kind of subjectivity which in the end may mislead the reader. In the same manner, many experimental studies do not give enough details on the methods used, their sampling frame and whether the same protocol was implemented in a comparative manner between participants of the same sex. Research that does not thoroughly explain every process followed so that other independent researchers can reproduce, confirm or challenge its findings cannot be considered to be valid or accurate.

Neurosexist studies are based on stereotypes that have historically been formed through a patriarchal society and are essentially recreating the differences they are supposedly trying to find. It is apparent that if someone separates a sample into two groups they may start to observe differences between them, but the question is whether these differences are statistically significant and have well established correlations. It is also important to say that this alone is not enough and ultimately does not lead to any significant conclusions if such differences are equally statistically significant among different groups of the same sex. Using statistics, it is easy to find differences between two groups, the question is whether they have a true social / behavioral meaning and are not based on false assumptions.

Another criticism that can be applied, is that in some studies there is a tendency to generalize the results across the whole population in order for their findings to gain value. This is the case when researchers take an unrepresentative sample (e.g. small number of participants or with specific beliefs, internalized misogyny, etc.) which can actually lead to gender differences. This does not mean that these differences can be generalized across the whole population, since an incorrect sampling frame can very easily produce a result which ultimately cannot be representative of the general population.

One more point of critique is that neurosexist studies are trying to show differences where there are none in order to be impressive, and at the same time tend to report findings that promote differences while deliberately omitting results that show similarities. We do not, however, need any statistical study to know that all genders have the same potential to evolve their skills.

In the end such studies fail to reach even the most basic standards of scientific consistency, and go beyond what we would define as pure research with a real social context. Thus, their findings are more directly related to the personal subjective claims of the researchers and their subjects, rather than the reality of society. Even if we accept that some neural differences between men and women actually exist, it is a logical leap to attempt to relate them to inherent differences in the behavior and skillsets of the sexes.

DECONSTRUCTING HARDWIRED GENDER MINDS

The main question that arises is whether female and male brains are fundamentally different, and if they are indeed different, whether or not this affects the way they process information and make decisions.

Under our neurofeministic lens, we assume that there may be some innate brain differences but these do not correlate to distinct behaviors. For example, the majority of men might indeed have better spatial skills but this is not due to their genetic background, but rather due to cultural and environmental factors that encourage men to practice these abilities.

However, there are two basic theories that could answer the above question. Firstly, there is the Nature theory, which claims that there are biological differences between female and male brains and secondly the nurture theory, which claims that culture and environment is what shapes the human brain. These two theories are fundamentally different because the first one supports the idea that differences in male and female attitudes and behaviors are innate, biological and physiological, and that they occur due to heredity and are characterized by their stability. On the other hand, the nurture theory supports the idea that the differences are a result of learning, experience and cultural norms that they occur due to the environment and are characterized by the ability to change.

Despite the fact that there is an incompatibility between the nature and nurture theories, a close feedback loop between the two is observed in which nature and nurture influence one another constantly. In this manner, the human brain and its behavior could be shaped through this interaction. In fact, the brain is constantly changing and making new connections during our lives through a combination of nature and nurture. The environmental inputs (nurture) form the behavior, which then affects the physiology (nature) of the brain.

Therefore, it can be said that the environment triggers an existing genetic predisposition in a way that “nature” and “upbringing”, or “inherent” and “acquired” skills coexist. They engage in a way that shapes consciousness and behavior. A typical example of the relationship between genetic predisposition and the environment is the occurrence of speech. The ability to talk is a matter of genes, but whether a person will speak or which language, is a result of the environment.

We will now seek to reinforce these claims by quoting a number of experimental studies pointing to the non-existence of hardwired differences between gender minds.

Firstly, it is worthwhile to mention neuroimaging, which is a tool that uses various techniques to create an image of the brain, its structure and the function of neurons. A variety of observations that have occurred from neuroimaging studies lead to the creation of four basic principles which indicate the difficulty to distinguish the brain in two different types, male and female.

The first of these basic principles is overlap, which presents the fact that neural characteristics are not so distinctly different in the sexes and that reliable differences cannot easily be identified. This makes it clear that dimorphism, i.e. the existence of two distinct forms, is not an accurate way to characterize sex/gender differences in neural phenotype.

The second principle is mosaicism, which represents a multi-factorial understanding of the brain and not a two-dimensional one. In neuroimaging two dominantly different feminine and masculine patterns by which one can predict gender differences do not seem to exist. Instead, a mosaic is observed with more than two dominant characteristics.

The third principle is contingency, which states that the functional differences in the brain are contingent because they depend both on individual biological characteristics and on the perspective malleable sociocultural context and experience of the person.

The last principle is the entanglement, which refers to the fact that the social phenomenon of gender is literally incorporated, shaping the brain and endocrine system, becoming “part of our cerebral biology” (Rippon, Jordan-young, Kaiser, & Fine, 2013,550-551).

There are numerous studies in which these basic principles appear. For instance, a study on gender differences in personality traits across cultures from the researcher Paul T. and his colleges, indicates the principle of contingency. In this research they used an analysis of revised Neo Personality Inventory data from twenty-six cultures, which includes neuroticism, extraversion, openness to experiences, agreeableness and conscientiousness. The presented results indicate that gender differences are small relative to individual variation within the same gender. It was also observed that the magnitude of the differences between behaviors and cognitive skills, varied more greatly across cultures and ages rather than across biological sexes. Moreover, in traditional cultures the perceived differences between genders in general, could be attributed to social norms rather than intrinsic differences in personality traits (Jr, Terracciano, & McCrae, 2001,322-331).

Another study from Daphna Joel and Anne Fousto-Sterling indicated the principle of mosaic. This study tried to answer the basic question, whether or not sex categories should be used as a variable in all studies of the human brain. In order to answer this question, the authors used MRI scans of more than 1400 brains, focusing on anatomy traits that showed the biggest sex differences, dividing the scores into a predominantly male zone, a predominantly female zone and an intermediate range. This division was created in order to study the frequency with which a brain is characterized in only one of the two zones. Their results indicated that only 0-8% of brains appear to be all “male” or all “female” respectively. Most cases showed that a brain included a mixture of male and female characteristics creating a mosaic. The researchers explained that data is better analyzed by accepting the notion that human brains belong in a highly heterogenic population instead of two different populations.

They claimed that the comparison of female to male brains would be analogous to comparing two samples randomly and that such comparisons may well yield significant differences between females and males, but it would probably reflect a false-positive finding. Furthermore, to answer the first basic

question, whether or not sex categories should be used as a variable in all studies of the human brain, the researchers recommended avoiding the use of sex categories as an analytic variable in most studies of the human brain, since it could be misleading or unnecessary (Joel, Fausto-sterling, 2016).

Another study on sex differences in adult and developing brains of rats revealed that septal arginine vasopressin or AVP innervation was different in males and females while social recognition memory, the behavior associated with AVP, was performed equally well in both sexes. On the contrary, the researchers observed behavioral differences when they tried to minimize the brain differences in AVP. In this particular example the minimization of structural brain differences between the sexes resulted in behavioral differences when previously there were none (Vries, 2014,1063-1068).

Additionally, a study from Keller and Menon on gender differences in the functional and structural neuroanatomy of mathematical cognition neuroimaging, revealed that a woman and a man with equal speed and accuracy on an arithmetic task, presented different patterns of brain activation (Keller & Menon, 2009).

The results of the above studies imply that gender differences in the brain may not actually indicate differences in thinking or behavior, but in contrast they could present evidence of mental and behavioral similarity between the sexes (Hoffman & Bluhm, 2016,716-729).

CONCLUSION

We believe that in order to limit the phenomenon of neurosexism that has acquired viral dimensions within the scientific community, editors need to become more radical towards research publications that refer to hardwired gender differences and attempt to correlate them to behaviors.

In addition, we urge other researchers to openly criticize neurosexist articles that come under their attention so that the illusion of hardwired gender attitudes becomes apparent and ultimately deconstructed, and stops being reproduced in new research.

Also, in order to address neurosexist studies, it is necessary to reform the traditional concept of gender kai sex. To this end, we consider it important to have a bridging between neuroscience and gender studies in order to redefine both some of the stereotypical gendered beliefs and the binary model of sexes that is duplicated in research. It has been known that sex is not binary but a spectrum, as there are at least 5 different biological sexes (Fausto-Sterling, 2000,19-23).

Deconstructing the labels that exist for the brain, we realize that the main question of male or female brain, implies a binary brain and the existence of two different species. The brain is not binary but instead forms a mosaic of female and male characteristics, just like biological gender which is a spectrum of many involved chromosomes (Joel, Etgen, Einstein, 2011,1-5).

The view of a hardwired brain points specifically towards the nature theory. We consider that brains are not hardwired but they are also nurtured and always changing, i.e. brains are malleable. The brain has the ability to be remodeled by environmental inputs and this remodeling is better described and supported by the theory of brain plasticity (May, 2011,475-482).

Additionally, gender differences and individual behavior vary across time, place, group, and social context. In terms of cognitive skills and personality characteristics, the sexes are much more similar than different. Just knowing the sex of a person is a very poor predictor for any kind of behavior.

The substantive point of this article is to indicate that neural circuits can be modified, neutralized, or even reversed by experience and socialization in a way that no one can recognize it, an opinion shared by many researchers. (Fine, 2014; Joel et al., 2011, 1-5; Rippon et al., 2014,1-13).

It is equally important that neuroscientific research challenges the assumption of two distinct brains which are entirely determined by female or male circuits, and switch to more neurodevelopmental models that mutually agree in the existence of reciprocal biological and environmental influences on brain structure and function.

The real history of neuroscience shows that the human brain is not governed by a gender compass characterized by generalized rules that can predict or correspond globally to gender behaviors.

Given that there is a significant impact when neuroscientific studies promote neurosexist views, it is now necessary for readers and researchers to be able to distinguish statistical and sexist fallacies whether they produce or consume data.

REFERENCES

- Fine, C. (2010), *Delusions of Gender*, Icon Books.
- Defelipe, J., & Alonso-Nanclares, L. (2013), 'The Synapse : Differences Between Men and Women', *Springer-Verlag*, pp. 43–57.
- Fausto-sterling, A. (2000), 'The Five Sexes, Revisited', *The Sciences*, pp. 19-23.
- Fine, C. (2014), 'His brain, her brain?', *Science*, pp. 915.
- Hoffman, G. A., & Bluhm, R. (2016), 'Neurosexism and Neurofeminism'. *Philosophy Compass*, 11, pp. 716–729.
- Ingalhalikar, M., Smith, A., Parker, D., Satterthwaite, T. D., Elliott, M. A., Ruparel, K., Verma, R. (2013), 'Sex differences in the structural connectome of the human brain'. *PNAS*, pp. 1–6.
- Joel, D., Etgen, A. M., & Einstein, A. (2011), 'Male or female? Brains are intersex', *Frontiers in Integrative Neuroscience*, 5 (September), pp. 1–5.
- Joel, D., Fausto-Sterling, A. (2016), 'Beyond sex differences : new approaches for thinking about variation in brain structure and function', *Philosophical Transactions of the Royal Society of London, Series B*.

- Costa, Jr., Terracciano, A., McCrae, R. R. (2001), 'Gender Differences in Personality Traits Across Cultures : Robust and Surprising Findings', *Journal of Personality and Social Psychology*, 81(2), pp. 322–331.
- Keller, K., Menon, V. (2009), 'Gender differences in the functional and structural neuroanatomy of mathematical cognition', *NeuroImage*, 47, pp: 342–352.
- May, A. (2011), 'Experience-dependent structural plasticity in the adult human brain', *Trends in Cognitive Sciences*, 15(10), 475–482.
- McCrae, K., Ochsner, K. N., Mauss, I. B., & Gross, J. J. (2008) 'Gender Differences in Emotion Regulation : An fMRI Study of Cognitive', *GRIP*, 11(2), pp: 143–162.
- Rippon, G., Jordan-young, R., Kaiser, A., & Fine, C. (2013), 'Plasticity, plasticity, plasticity...and the rigid problem of sex', *Cell*, 17, pp:550-551.
- Rippon, G., Jordan-young, R., Kaiser, A., & Fine, C. (2014), 'Recommendations for sex / gender neuroimaging research : key principles and implications for research design , analysis , and interpretation', *Frontiers in Human Neuroscience*, 8(August), pp: 1–13.
- Vries, G. J. D. E. (2014), 'Minireview : Sex Differences in Adult and Developing Brains : Compensation, Compensation, Compensation', *Endocrinology*, 145 (December), pp: 1063–1068.
- Young, R. M., & Balaban, E. (2006), 'Psychoneuroendocrinology', *Nature*, 443:634

ABOUT THE AYTHORS

Sofia Tsepeneka received her diploma with IKY awards and scholarships in Automation Engineering from Piraeus University of Applied Sciences 1st in grade for the year 2014. She holds an interdisciplinary master degree in Brain & Mind Sciences from the department of medicine of Crete University with a postgraduate scholarship from the Onassis Foundation. She has also received European funding from the Youth and Lifelong Learning Foundation program "Youth in Action" for: the construction of a «Remotely Controlled Intelligent Flying Carrier with an integrated arm system for grasping objects, with the ability of mapping the surroundings for precise navigation in specific environments and an integrated control for avoiding obstacles". Currently, she is attending the postgraduate master degree Bioinformatics & Neuroinformatics of Ionian University. She plans to pursue PhD studies in computational neuroscience. Her interests include: artificial intelligent, machine learning, robotics, cognitive neuroscience, memory reconsolidation, time perception, consciousness of mind, philosophy of mind, gender theory, third-wave feminism, queer theory, neurosexism, decision making, game theory.

Email: c16tsep@ionio.gr

Katerina Gialopsou is an owner of a BEng in Engineering Informatics (TEI of Central Macedonia). Her dissertation was entitled “Digital Book of Advanced Mathematics”, programmed entirely in C#. She is a tutor in Software Engineering and Tourism Informatics at Public Institute for Vocational (Corfu, Greece). She teaches subjects such as: Information Technology, Booking Applications in Tourism, Information Systems Security and Client-Server Management. She also teaches Computing (A Level) at a Private Learning Institute of Corfu, preparing students for their final examination in school. In 2015, she had voluntarily contributed to the “Study to Record the Health Characteristics of Corfu Municipality”. Currently she’s studying her master’s degree in MSc “Bioinformatics and Neuroinformatics” at Ionian University. Her interests include: Neuroscience, Neurofeminism, Computer Programming, Surrealism art, Mathematics, System Biology, Neurobiology, Astronomy, Data analysis, Cognitive Neuroscience, Fine arts, Literature, Neuropsychology, Behavioral Neuroscience, Queer theory.

Email: c16gial@ionio.gr

DESPOINA POULOU
Independent Researcher, Greece

Pornography or Art? Transgressive Revelations in Cinema

ABSTRACT

When a literary, cinematic or other work of art is interested in the subject of eroticism and dares to record with provocative revelations its characters' erotic acts, it is often considered pornographic and, with this pejorative characterization, is excluded from the products of "high" art and regarded as inconsequential. However, from the extensive discussion that continues until this day, it remains an open question whether a work of art can be so obscene that it should present absolutely no artistic value? On the other hand, it is equally possible that the negatively charged term, "pornograph-ic", is used for the rejection of a group of possibly valuable artworks, so that a tradition of prudery which gets irritated by anything that tries to bold-ly confront the matters of sexuality, can be satisfied.

Consequently, in cinema, which is primarily an optical medium, when a movie aims to narrate an erotic relationship, a dilemma immediately occurs which concerns the sexual acts between the protagonists and the degree of their concealment or revelation. Is eroticism benefited when it remains in secret, letting the viewer enrich with his/her imagination elements that can-not be captured, or does the artist owe to approach his work with a manner that is as much as possible close to reality?

In this context, movies known for their "revealing" character and unsimulated sex scenes are being studied, aiming to investigate the effectiveness of such an approach as well as to define the modern critical view towards such artworks. Dusan Makavejev's *W.R.: The Mysteries of the Organism* (1971) and Nagisa Oshima's *In the Realm of the Senses* (1976), as well as Lars von Trier's succeeding *Idiots* (1998), Catherine Breilliat's *Anatomy of Hell* (2004), Michael Winterbottom's *9 Songs* (2004) and Gaspar Noe's *Love* (2015), will be examined, in an effort to determine whether these movies represent a revolution in erotic cinema that adopts a realistic approach to eroticism, similar the one discussed by Linda Williams in *Screening Sex*, or they are just isolated incidents of a marginalized part of cinema.

KEYWORDS

pornography, art, cinema, conceal, reveal

Το 1971, η ταινία του Ντούσαν Μακαβέγιεβ, τα Μυστήρια του οργανισμού (W.R. - Misterije organizma), επιχειρεί με το πολύμορφο υλικό της να συνδιαλλαγεί με τις θεωρίες του Βίλχελμ Ράιχ και να αντιπαραβάλει τη σεξουαλική απελευθέρωση με το κοινωνικοπολιτικό κατεστημένο (Νούλας 1998: 66). Εκτείνοντας την επαναστατική θεματική στην οπτική λογική, ο Μακαβέγιεβ τολμά να συμπεριλάβει, σε κάποια από τα πρώτα πλάνα της ταινίας που μοιάζουν κινηματογραφημένα από καλιδοσκόπιο, μια ερωτική συνάντηση και ένα στιγμιότυπο πραγματικής πεολεχίας, ενώ η αφηγήτρια αναφωνεί: «Σύντροφοι-εραστές, για χάρη της υγείας σας, κάντε έρωτα ελεύθερα».

Πέντε χρόνια μετά, ο Ναγκίσα Όσιμα, με την Αυτοκρατορία των Αισθήσεων (Ai no korida), φτάνει στην κορύφωσή της την πρόκληση ενός κινηματογράφου που αντιπαρατίθεται με τα θέματα της σεξουαλικότητας και του ερωτισμού, ανακινώντας δυναμικά τη συζήτηση για τη σχέση της πορνογραφίας με την τέχνη. Και αν το δίλημμα «πορνογραφία ή τέχνη;» φαίνεται να ανήκει σε προηγούμενες, συντηρητικότερες εποχές, γεγονός είναι πως συνεχίζει να ενεργοποιείται, κάθε φορά που ταινίες όπως το *Nymphomaniac* του Λαρς φον Τρίερ ή το *Love* του Γκάσπαρ Νοέ αποκαλύπτουν περισσότερα από εκείνα που επιτρέπει η κυρίαρχη ηθική. Πότε είναι, όμως, ένα έργο πορνογραφικό και γιατί ο χαρακτηρισμός αυτός απαλείφει ή έστω υποσκάπτει την καλλιτεχνική του αξία; Παράλληλα με το παραπάνω ερώτημα, είναι χρήσιμο να διερωτηθεί κανείς ποιες είναι οι βλέψεις ενός δημιουργού που επιδιώκει το πέρασμά του στους κώδικες της πορνογραφίας και τι σημαίνει συνολικά αυτό για τον κινηματογράφο που ενδιαφέρεται για τα θέματα του ερωτισμού;

Το 1967, στο γνωστό δοκίμιό της, «The pornographic imagination», η Σόνταγκ επανεξετάζει τη σχέση μεταξύ της τέχνης και της πορνογραφίας, ενώ υπερασπίζεται προκλητικά ερωτικά λογοτεχνικά έργα, όπως Η ιστορία της Ο (*Histoire d'O*, 1954) της Πολίν Ρεάζ και Η ιστορία του ματιού (*Histoire de l'oeil*, 1928) του Ζωρζ Μπατάιγ. Η ίδια εξηγεί ότι κάποια από τα κύρια επιχειρήματα εκείνων που αρνούνται να αναγνωρίσουν την πιθανή λογοτεχνική αξία τέτοιων κειμένων είναι ότι αυτά, ως πορνογραφήματα, στοχεύουν μονομανώς στον σεξουαλικό ερεθισμό του αναγνώστη, ξεχνούν τον σύνθετο τρόπο λειτουργίας της λογοτεχνίας, αδιαφορούν για τα εκφραστικά τους μέσα και, τέλος, υποβιβάζουν τους λογοτεχνικούς χαρακτήρες σε αποπροσωπιοημένα όργανα (Sontag στο Bataille 2004: 86-87)¹. Κατά κάποιον τρόπο, αυτός παραμένει μέχρι και σήμερα ο κύριος συλλογισμός όσων ισχυρίζονται ότι η πορνογραφία και η τέχνη δεν μπορούν να συνυπάρξουν: η πορνογραφία έχει, εξ ορισμού, μοναδικό στόχο τη σεξουαλική διέγερση, ενώ η τέχνη εξυπηρετεί πολλαπλότερους και συνθετότερες σκοπούς (Levinson 2005: 228-240). Σύμφωνα με τη Σόνταγκ, βέβαια, το

¹ Σχετικά, βλ. και Maes, H. (2012), Who says pornography can't be art?, στο: H. Maes, J. Levinson (επιμ.), *Art & pornography. Philosophical essays*, Oxford: Oxford University Press, σ. 17-47, όπου επιχειρείται η συγκέντρωση και ο σχολιασμός των κύριων επιχειρημάτων όσων θεωρούν ασύμβατη την τέχνη με την πορνογραφία.

πρόβλημα βρίσκεται ακριβώς εδώ: στην αντίληψη που υποστηρίζει ότι η πορνογραφία και η υψηλή τέχνη είναι φύσει αντίθετες (Sontag στο Bataille 2004: 91-92, 94). Και πώς είναι δυνατόν να συμβαίνει κάτι τέτοιο, εξηγεί η ίδια, όταν πορνογραφικά κείμενα όπως του Μπατάιγ, όχι απλώς δεν περιορίζονται στη σεξουαλική διέγερση, αλλά καταφέρνουν, μέσα από την καταγραφή ακραίων ερωτικών εμπειριών, να αποκαλύπτουν την υπόγεια σχέση του ερωτισμού με τον θάνατο (Sontag στο Bataille 2004: 107). Φυσικά, πλέον η χρήση φράσεων όπως πορνογραφική τέχνη ή Porno-Art (Mikkola στο Maes 2013: 27-42) αποδεικνύει ότι οι δύο όροι –στη σκέψη κάποιων τουλάχιστον μελετητών– μπορούν να συνταιριαστούν, χωρίς κάτι τέτοιο να συνεπάγεται μια ολέθρια καταστροφή για το καλλιτεχνικό έργο. Ακόμα και έτσι, όμως, προκύπτουν και ζητήματα αισθητικής τροπής –εντονότερα μάλιστα στον κινηματογράφο που είναι πρωτίστως οπτικό μέσο–, τα οποία θέτουν ερωτήματα για το τι είναι ωραίο και άρα επιθυμητό.

Ο Σούμας, παραδείγματος χάρη, στο βιβλίο του, *Κινηματογράφος και έρωτας*, διερωτάται: «Πώς μπορεί να αναπαρασταθεί η σεξουαλική πράξη, η σεξουαλική σχέση στον κινηματογράφο; Να αποκρύψεις σημαντικά μέρη, τμήματά της ή να προσπαθήσεις να δείξεις τα πάντα; Να επιχειρήσεις μια προσέγγιση σινεμά-ντιρέκτ ή να αποκλείσεις κάθε συνάφεια με το ντοκουμανταίρ;» (Σούμας 2005: 11 και Σούμας 1983: 7). Διατυπώνει έτσι ένα παράλληλο δίλημμα που στρέφεται πλέον στον δημιουργό και του ζητά να επιλέξει ανάμεσα σε δύο πιθανές και μάλλον αντίθετες κατευθύνσεις προσέγγισης των ερωτικών σκηνών: μία “διακριτική”, που αρέσκεται στην απόκρυψη, και μία “αποκαλυπτική”, που, θεωρητικά τουλάχιστον, βρίσκεται πλησιέστερα στην πραγματικότητα. Φυσικά, η απάντηση στο ερώτημα συνεπάγεται και την επιλογή μιας θέσης, όσον αφορά το ποια από τις δύο αισθητικές επιλογές καταγράφει ή αποδίδει ικανοποιητικότερα τις ευαίσθητες και ιδιωτικές σεξουαλικές/ ερωτικές στιγμές.

Δεν είναι βέβαια ασυνήθιστο —προφανώς εξαιτίας ηθικών προκαταλήψεων—, να θεωρούνται “κομψότερες” οι ταινίες που αποφεύγουν τις άμεσες και, συνεπώς, κάπως “ωμές” προσεγγίσεις, ενώ αντίθετα προωθούν τη διακριτική αποτύπωση των σωμάτων και των σεξουαλικών τους συναντήσεων. Ο Μπαζέν εκφράζει μια σχετική αντίληψη που υποστηρίζει ότι στην τέχνη «πρέπει να διατηρήσουμε το φαντασιακό». «Αυτό», εξηγεί ο ίδιος, «σημαίνει πως ο κινηματογράφος μπορεί να τα πει όλα, αλλά όχι και να τα δείξει», ενώ συνεχίζει γράφοντας: «είναι αναγκαίο να καταφεύγει κανείς στις δυνατότητες της αφαίρεσης της κινηματογραφικής γλώσσας με τέτοιο τρόπο ώστε η εικόνα να μην μπορεί να αξιοποιηθεί ως ντοκουμέντο» (Bazin 1993: 48). Πολύ αργότερα, η Γουίλιαμς τού απαντά ότι η «φαντασία και η δυνατότητα να φαντασιωνόμαστε θα απασχολεί πάντα το μέρος εκείνο, στο οποίο η αναγκαστικά περιορισμένη όραση του φιλμ αποτυγχάνει» (Williams 2008: 297). Σύμφωνα με την ίδια, λοιπόν, όσο υπάρχουν στοιχεία που αδυνατεί να αποτυπώσει ο κινηματογράφος –και, φυσικά, πάντα θα υπάρχουν τέτοια– η φαντασία δεν κινδυνεύει με κανέναν τρόπο. Η Γουίλιαμς, άλλωστε, πιστεύει ότι μόνο «μια ρεαλιστική προσέγγιση στην προβολή του σεξ μπορεί να ξεπεράσει τους αντίστοιχους εξιδανικευμένους

τύπους σώματος—αντρικών ή γυναικείων—των προτύπων της πορνογραφίας» (Williams 2008: 298). Πώς συνέβη, όμως, ιστορικά, η είσοδος αυτής της “ρεαλιστικής” προσέγγισης στον κινηματογράφο και τι μπορεί να σήμανε προοδευτικά –αν σήμανε κάτι– για την αναπαράσταση του ερωτισμού;

Αναφέρθηκα ήδη στην Αυτοκρατορία των αισθήσεων που βασίστηκε στην πραγματική ιστορία της Άμπε Σάντα: της πόρνης που στραγγάλισε και ύστερα ευνούχισε τον εραστή της. Η μεταφορά της μυθικής ερωτικής ιστορίας στο φιλμ αποτελεί ένα κομβικό σημείο για τον κινηματογράφο (του ερωτισμού), εφόσον για πρώτη φορά ένα σκηνοθέτης ζητά (σε τέτοια κλίμακα) από τους ηθοποιούς του να έχουν πραγματικές σεξουαλικές συναντήσεις κατά την διάρκεια των γυρισμάτων. Αντιμέτωπος με την αυστηρή ιαπωνική λογοκρισία, ο Όσιμα αναγκάζεται να εισαγάγει το παρθένο φιλμ από τη Γαλλία και στη συνέχεια να το στείλει πίσω για τύπωμα, χωρίς και πάλι να αποφεύγει να δικαστεί στη χώρα του, με την κατηγορία της χυδαιότητας. Ενδεικτικό είναι ότι, στον υπερασπιστικό του λόγο, ο ίδιος υποστηρίζει πως, ανεξάρτητα από το περιεχόμενό της, Η αυτοκρατορία των αισθήσεων είναι πορνογραφική, όσο η προβολή της τίθεται υπό περιορισμό (Oshima 1992: 253). Δεν είναι, βέβαια, λίγα τα σημεία του κόσμου όπου η προβολή της ταινίας απαγορεύεται, ενώ οι διάφορες μορφές λογοκρισίας στην πραγματικότητα δεν υποχωρούν πριν από τη δεκαετία του '90, διάστημα κατά το οποίο ανανεώνεται το ενδιαφέρον για τις ταινίες με ερωτική θεματολογία².

Αυτή τη χρονική στιγμή, εμφανίζεται και το ιδιαίτερο κινηματογραφικό εγχείρημα του Λαρς φον Τρίερ, *Οι ηλίθιοι* (Idioterne, 1998). Η ταινία, η δεύτερη της τριλογίας «Golden Heart», ύστερα από το *Δαμάζοντας τα κύματα*, έχει πρωταγωνιστές μια ομάδα ανθρώπων που αποφασίζουν να συμβιώσουν και να μετατρέψουν την καθημερινότητά τους σε παράσταση ηλιθίων, συμπλέκοντας το θέατρο με την πραγματικότητα. Ακόμα και αν το “πείραμά” τους είναι προδιαγεγραμμένο να αποτύχει, καταφέρνει για λίγο να διαταράξει την τάξη των πραγμάτων, αποτελώντας μια επίθεση στους όρους της αστικής ζωής, αλλά και στους δεδομένους κινηματογραφικούς κώδικες. Όταν κάποια στιγμή ο αρχηγός της ομάδας προσκαλεί τα υπόλοιπα μέλη σε ένα όργιο, το επεισόδιο προσεγγίζεται ρεαλιστικά, περιέχοντας μάλιστα και ένα πλάνο κολπικής διείσδυσης. Έτσι, στη σκηνή του οργίου, που βέβαια ξεπερνά το ζήτημα της αποκαλυπτικής απεικόνισης τους ερωτισμού, κορυφώνεται η σύγχυση ανάμεσα στους ρόλους και τις προσωπικότητες που τους εμψυχώνουν, καθώς η κινηματογραφική εμπειρία μετατρέπεται σε θεατρική παράσταση που μιμείται τον εαυτό της. Όπως εξηγεί και η Γουίλιαμς, το «σεξ σε αυτή την ταινία είναι μόνο ένα μέρος του μεγαλύτερου σχεδίου του Τρίερ, ο οποίος αναζητά περισσότερη αυθεντικότητα στις ερμηνείες. Είναι μόνο μία από τις πολλές

² Στην Αμερική, η τάξη αυτή εκδηλώνεται με την αυξημένη παραγωγή ερωτικών θρίλερ, με πιο αντιπροσωπευτικό μάλλον δείγμα εκείνης της περιόδου, το Βασικό ένστικτο (Basic Instinct, 1992) του Πολ Βερχόφεν.

σωματικές δραστηριότητες στις οποίες ψάχνει να επανεστιάσει την προσοχή του κινηματογράφου» (Williams 2008: 270).

Ένα χρόνο μετά τους Ηλίθιους, η Κατρίν Μπρεγιά —μια εξίσου προκλητική δημιουργός, που γνώρισε με το έργο της τη λογοκρισία από νεαρή ηλικία— παρουσιάζει το *Romance*. Η ταινία έχει πρωταγωνίστρια μια δασκάλα δημοτικού, η οποία υποφέρει από την άρνηση του συντρόφου της να την ικανοποιήσει σεξουαλικά. Αδύναμη να τον εγκαταλείψει, η γυναίκα αναγκάζεται να αναζητήσει σεξουαλικές διεγέρσεις στις συναντήσεις της με άλλους, κυρίως άγνωστους, άντρες. Εξαιτίας των τολμηρών ερωτικών σκηνών, η ταινία κινδυνεύει διεθνώς από τη λογοκρισία, ενώ μέσα στα διάφορα προκλητικά στιγμιότυπά της, περιλαμβάνει στην αρχή της και μια αποστειρωμένη σκηνή πεολεξίας, ανάμεσα στην πρωταγωνίστρια και τον σύντροφό της. Σε αντίθεση, όμως, με τη γενική πεποίθηση ότι αυτού του είδους οι πορνογραφικές στιγμές στοχεύουν στον σεξουαλικό ερεθισμό των θεατών, ετούτη λειτουργεί μάλλον αντίστροφα: ως επιβεβαίωση της σεξουαλικής σχέσης του ζευγαριού και της θιγμένης γυναικείας επιθυμίας—“απόδειξη” αυτού, άλλωστε, αποτελεί και ο λευκός αποστειρωμένος χώρος που φιλοξενεί το γεγονός.

Κάποιο ενδιαφέρον παρουσιάζει και η απόφαση της Μπρεγιά να επιλέξει έναν γνωστό ιταλό προνοσταρ (Ρόκο Σιφρέντι) για τον ρόλο ενός από τους άντρες με τους οποίους ερωτοτροπεί η πρωταγωνίστρια. Με τον ίδιο, η σκηνοθέτρια συνεργάζεται ξανά και στην ταινία της, *Ανατομία της κόλασης* (*Anatomie de l'enfer*, 2004). Το θέμα της ταινίας περιστρέφεται και πάλι γύρω από τη γυναικεία φύση και η Μπρεγιά συνεχίζει τις αποκαλύψεις, με αφορμή τώρα την ιστορία μιας γυναίκας που προσλαμβάνει έναν άγνωστο ομοφυλόφιλο άντρα με σκοπό να την παρατηρεί: να διερευνήσουν μαζί την ανατομία της. Σε έναν απομονωμένο χώρο, ξαπλωμένη σαν την Ολυμπία του Μανέ, η πρωταγωνίστρια μετατρέπεται σε πεδίο μελέτης και αποκάλυψης κάθε τι απόκρυφου, αποκρουστικού και απαγορευμένου της γυναικείας σεξουαλικότητας, ενώ ο άντρας γίνεται μάρτυρας των ευρημάτων της. «[Δ]εν υπάρχει σαρκική αμαρτία», δηλώνει σε συνέντευξή της η σκηνοθέτρια, «εκτός εάν είναι αμαρτία να υπερβαίνει κανείς την ίδια του τη σάρκα» (SBS 2002).

Φεύγοντας από τον κάπως κλινικό ερωτισμό της Μπρεγιά, το 2001, μια ταινία που συγκρίθηκε με το Τελευταίο ταγκό στο Παρίσι του Μπερνάρντο Μπερτολούτσι, το οποίο προκάλεσε ένα ιστορικό σκάνδαλο με τον ανυπότακτο ερωτισμό του, είναι η *Σαρκική εξάρτηση* (*Intimacy*) του Πατρίς Σερό (Romney 2001). Και σε αυτήν, δύο άγνωστοι συναντιούνται (μια φορά την εβδομάδα) με μοναδικό σκοπό τη σεξουαλική ικανοποίηση. Όμως, η αρχικά απλή συμφωνία γίνεται πολύπλοκη, όταν σταδιακά αναδύονται οι πραγματικές ανάγκες των εραστών. Σε αυτό το πλαίσιο, η σκηνή πεολεξίας που περιλαμβάνεται στην ταινία, χάρη στη γήινη ποιότητα των γυμνών σωμάτων και τη φυσική προσέγγιση της κινηματογραφικής μηχανής, μοιάζει περισσότερο με δήλωση οικειότητας ανάμεσα στα υποκείμενα —μια ανιδιοτελής προσφορά της γυναίκας προς τον άντρα—, παρά με προκλητικό επεισόδιο που έχει σκοπό να ερεθίσει τους θεατές.

Τη δεκαετία του '00, δύο ακόμα ταινίες ξεχωρίζουν για το θάρρος τους να διερευνήσουν θέματα του ερωτισμού, περιλαμβάνοντας πραγματικές σεξουαλικές σκηνές ανάμεσα στους ηθοποιούς: τα 9 τραγούδια (9 Songs, 2004) του Μάικλ Γουιντερμπότομ και το Shortbus (2006) του Τζον Κάμερον Μίτσελ. Στην πρώτη αναπτύσσεται η ερωτική σχέση ενός ζευγαριού, οι συναντήσεις του οποίου διακόπτονται από εννέα μουσικά ιντερλούδια. Η Γουίλιαμς υποστηρίζει ότι ο σκηνοθέτης επιτυγχάνει μόνο μερικώς τον στόχο του που, σύμφωνα με την ίδια, είναι να συλλάβει το αισθησιακό στοιχείο μιας ερωτικής σχέσης μέσα από τη σεξουαλική και μουσική λυρικήτητα, και όχι τόσο μέσα από το δραματικό γεγονός και τον εκτεταμένο διάλογο (Williams 2008: 261). Το Shortbus, από την άλλη, μιλά με κωμικοτραγικούς όρους για την εξερεύνηση της σεξουαλικότητας, μέσα από πλήθος χαρακτήρων, σεξουαλικών προσανατολισμών και ευφάνταστων επεισοδίων. Μάλιστα, στην ταινία εμφανίζεται και ένα σεξουαλικό βοήθημα, ένα δονούμενο αυγό (vibrating egg), με τον όνομα, «In the realm of the senses». Πρόκειται προφανώς για μια “εκσυγχρονισμένη” εκδοχή του αυγού από τη γνωστή σκηνή της Αυτοκρατορίας των αισθήσεων και έναν φόρο τιμής στον Όσιμα, ο οποίος καθόρισε στον κινηματογράφο τη συζήτηση για τα όρια ανάμεσα στην πορνογραφία και την τέχνη.

Κάποια χρόνια αργότερα και σε διαφορετικό πλαίσιο, ο Τρίερ προκαλεί ξανά με το σύνθετο θέμα, τους μυστηριώδεις συμβολισμούς και την ωμή βιαιότητα του Αντίχριστου (Antichrist, 2009)³. Στην εισαγωγική σεκάνς της ταινίας, μάλιστα, εμφανίζεται και ένα σύντομο κοντινό πλάνο διείσδυσης, υπό τους ήχους του *Lascia ch'io rianga* του Χαίντελ, καθώς το πρωταγω-νιστικό ζευγάρι πραγματοποιεί μια λυρική συνάντηση με τον θάνατο. Φυσι-κά, καμία ταινία του Τρίερ δεν περιέχει τόσες σεξουαλικές αποκαλύψεις όσες το πρόσφατο διμερές *Nymphomaniac* (2013). Με οξυδερκές χιούμορ, ο Τρίερ τοποθετεί τη νυμφομανή πρωταγωνίστριά του σε μια πολύωρη εξι-στόρηση που διατίθεται να ακούσει ένας σεξουαλικός άγνωστος άντρας. Οι ερωτικές περιπέτειες της γυναίκας συμπλέκονται με συζητήσεις για το ψάρεμα, τον Μπαχ, την ακολουθία Φιμπονάτσι, το Σχίσμα των δύο Εκ-κλησιών. Παρά, όμως, τις πλούσιες δόσεις αποκαλυπτικών πλάνων, το *Nymphomaniac* δεν μοιάζει τόσο με πορνογραφική ταινία—εφόσον δεν είναι (;) αρκετά διεγερτικό— όσο με μία από εκείνες τις κυνικές δηλώσεις ματαιότητας του Τρίερ.

Λίγο πριν το τέλος αυτής της διαδρομής, χρήσιμη κρίνεται η αναφορά και στο συλλογικό έργο του 2006, με τίτλο *Αυστηρώς ακατάλληλο* (Destructed), που προέκυψε από τη σύμπραξη καλλιτεχνών όπως η Μαρίνα Αμπράμοβιτς («Balkan erotic epic»), ο Μάθιου Μπάρνεϊ («Hoist»), ο Λάρι Κλαρκ («Impaled»), ο Γκάσπαρ Νοέ («We fuck alone»), κ.ά., και το οποίο—μέσα από τούτη την πολυφωνία— εξετάζει τη σχέση ερωτισμού, πορνο-γραφίας και τέχνης.

³ Επιπλέον, για μια σύνδεση αυτής της πρώτης σεκάνς με τον ερωτισμό του Bataille, βλ.: Δέσποινα Πούλου, «Ο ερωτισμός της πτώσης. Από τον Αντίχριστο στον Bataille», *Substantia Philosophica*, τχ. 1, 2015, σ. 168-179.

Τελικά, συγκεντρώνοντας κάποιες από τις ταινίες που συνδιαλέγονται με την πορνογραφία, γίνεται όλο και πιο εμφανές ότι οι λόγοι που παρακι-νούν μια τέτοια απόφαση, η έκταση του πορνογραφικού περιεχόμενου, αλλά και η αποτελεσματικότητά του, δηλαδή ο τρόπος πρόσληψής του, διαφέρουν από έργο σε έργο. Έχουμε έτσι ταινίες, οι οποίες προσβλέπουν κυρίως στην πρόκληση και στην εμπορική απήχηση που είναι πιθανό να φέρουν διενέξεις για το περιεχόμενό τους. Αντίθετα, υπάρχουν και εκείνες, όπως η Αυτοκρατορία των αισθήσεων, στις οποίες οι αποκαλυπτικές σκη-νές έχουν τον χαρακτήρα μιας παράβασης που συμβαίνει τόσο σε ερωτικό, όσο και σε κοινωνικοπολιτικό επίπεδο: Κατά την άνοδο του μιλιταρισμού της Ιαπωνίας του 1936, οι εραστές του Όσιμα απομονώνονται από την ε-ξωτερική πραγματικότητα, αρνούμενοι να συνδιαλλαγούν με τον θάνατο για χάρη του εκμοντερνισμού της Ιαπωνίας. Αντίθετα, δηλώνουν προσκολ-λημένοι στους απαρχαιωμένους τρόπους τους και επιλέγουν έναν θυσια-στικό θάνατο, που αποκτά χαρακτήρα προσφοράς στον ερωτισμό. Κάτι παρόμοιο ισχύει και για τις ερωτικές προκλήσεις του Τρίερ: στους Ηλίθιους, τα πορνογραφικά στοιχεία μοιάζουν με οπτική επίθεση, ανάλογη με εκείνη που επιχειρούν οι χαρακτήρες ενάντια στην αστική ζωή και τις κοινωνικές αναστολές. Το θέμα του ερωτισμού, λοιπόν, μπορεί να αποτελέσει εύφορη περιοχή για δυναμικά σοκ, που επιτρέπουν στις ατομικές επαναστάσεις να εκλάβουν ευρύτερες διαστάσεις. Άλλωστε, όταν ένα έργο γνωρίζει ότι θα διωχθεί για την προκλητικότητά του περιεχομένου του και, παρ' όλα αυτά, επιλέγει σχετική πορεία, πέρα από μία αισθητική επιλογή στο εσωτερικό της αφήγησής του, μοιάζει πως οργανώνει και μια υπέρβαση των θεσμικών απαγορεύσεων που, ανά δεδομένη στιγμή, καθορίζουν τι είναι επιτρεπτό για προβολή και θέαση.

Είναι πάντως γεγονός ότι ταινίες, όπως του Όσιμα και αργότερα του Τρίερ, δημιούργησαν μια προϊστορία που διεύρυνε τα οπτικά εργαλεία α-ποτύπωσης του ερωτισμού ή προσέφεραν «ένα καινούργιο είδος πορνο-γραφίας», όπως το ονομάζει η Γουίλιαμς (Williams 2008: 297), κάπως ελ-πιδοφόρο για την ελευθερία της κινηματογραφικής γλώσσας. Στον βαθμό βέβαια που τη δεκαετία του '70, έργα σαν την Αυτοκρατορία των αισθήσεων και, προηγουμένως, το Τελευταίο ταγκό στο Παρίσι, υποσχέθηκαν μια επα-νάσταση στον ερωτικό κινηματογράφο, αυτή μάλλον δεν υλοποιήθηκε. Παρά το ανανεωμένο ενδιαφέρον για σχετικές παραγωγές τη δεκαετία του '90, οι ταινίες αυτές συνεχίζουν να ανήκουν σε ένα περιθωριοποιημένο πλαίσιο, από όπου λειτουργούν ως μεμονωμένες περιπτώσεις σκανδάλων, με τους σκηνοθέτες τους να αγωνίζονται να τις υπερασπιστούν από την κατηγορία της πορνογραφίας.

Όμως, ένας δημιουργός δεν μπορεί παρά να αφουγκράζεται τις ανάγκες του ίδιου του τού έργου και μόνο με βάση αυτές να ρυθμίζει την ένταση των εικόνων του — τις αποκαλύψεις και τις αποκρύψεις που είναι διαθεσιμής να πραγματοποιήσει. Το ερωτικό φαινόμενο, άλλωστε, θα αποτελεί πάντοτε μια μυστηριώδη εμπειρία και η καταγραφή της μια δύσκολη εργασία. Μην ξεχνούμε τον Μπατάιγ που γράφει στο Καταραμένο απόθεμα: «Μόνο ο ερωτισμός είναι ικανός, μέσα στη σιωπή και την παράβαση, να εισαγάγει τους εραστές στο κενό

όπου ακόμα και τα μурμυρητά σταματούν, όπου κάθε ομιλία είναι αδιανόητη, όπου δεν υπάρχει πια μόνο ο άλλος αλλά, σωστότερα, η απυθμενότητα και η απεριοριστία του σύμπαντος που ορίζεται από την αγκαλιά» (Bataille 2007: 168).

ΒΙΒΛΙΟΓΡΑΦΙΑ

- Bataille, Georges (2007), *The accursed share*, II & III (The history of eroticism & Sovereignty), μτφ. Robert Hurley, 5η έκδ., New York: Zone Books.
- Bazin, André (1993), *Ο ερωτισμός*, μτφ. Σώτη Τριανταφύλλου, Αθήνα: Αιγόκερως.
- Levinson, Jerrold (2005), 'Erotic Art and Pornographic Pictures', *Philosophy and Literature* 29, σ. 228-240.
- Maes, Hans (2012), 'Who says pornography can't be art?', στο: Hans Maes, Jerrold Levinson (επιμ.), *Art & pornography. Philosophical essays*, Oxford: Oxford University Press, σ. 17-47.
- Mikkola, Mari (2013), 'Pornography, Art and Porno-Art', στο: Hans Maes (επιμ.), *Pornographic Art and the Aesthetics of Pornography*, New York: Palgrave Macmilan, σ. 27-42.
- Νούλας, Κ. Δ. (1998), *Το ερωτικό στον κινηματογράφο*, Αθήνα: Αιγόκερως.
- Oshima, Nagisa (1992), 'Theory of experimental pornographic film', στο: *Cinema, censorship, and the state. The writings of Nagisa Oshima, 1956-1978*, επιμ. Annette Michelson, Cambridge: The MIT Press, σ. 250-264.
- Πούλου, Δέσποινα (2015), 'Ο ερωτισμός της πτώσης. Από τον Αντίχριστο στον Bataille', *Substantia Philosophica* 1, σ. 168-179.
- Romney, Jonathan (2001), 'The Big Picture: Intimacy (18)', *Independent*, <http://www.independent.co.uk/arts-entertainment/films/reviews/the-big-picture-intimacy-18-9270659.html>. Ανακλήθηκε 30 Σεπτεμβρίου 2017.
- SBS (2002), 'Film Censorship: Catherine Breillat', <https://www.sbs.com.au/ondemand/video/11677251888/Film-censorship-Catherine-Breillat>. Ανακλήθηκε 30 Σεπτεμβρίου 2017.
- Sontag, Susan (2001), 'The pornographic imagination', στο: Georges Bataille, *Story of the eye*, London: Penguin Books, σ. 83-118.
- Σούμας, Θόδωρος (2005), *Κινηματογράφος και έρωτας*, Αθήνα: Αιγόκερως.
- _____ (1983), *Κινηματογράφος και σεξουαλικότητα/ερωτισμός*, Αθήνα: Αιγόκερως.
- Williams, Linda (2008), *Screening sex*, Durham: Duke University Press.

ABOUT THE AUTHOR

Despoina Poulou is a Doctor of Philosophy in Film Aesthetics from the Department of Philosophy and Education at the Aristotle University of Thessaloniki. She also Studied Cultural Technology and Communication, at the Aegean University, and Audio & Visual Arts, at the Ionian University, and holds a Master's Degree on "Digital Art Forms", from the Athens School of Fine Arts.

Email: des.poulou@gmail.com

The issue of the post-gender and transgressive identities in contemporary Greek reality in the cinematic work of Panos Koutras.

ABSTRACT

The issue of the identities is a subject which has influenced, for many decades art and cinema, it is considered until today as a subject taboo. In his book *Dissimilarity and Eroticism*, Konstantinos Kyriakos mentions that: *“the pursuit of otherness and the lack of similarity in the kind, the class, the religion, the sexuality and the nationality it is orientated in greek space, regarding the sciences of cinema, art and theatre, still in an investigated stage.”* (Kyriakos 2001:8). In Greek cinema, the printing of different racial identities it is not a contemporary phenomenon. But this printing is facing changes and mutations over time. In the older movies, the homosexual is a comic figure that is confronted with racism or as a ridiculous personality, while in the later movies represents mainly the special being who is confronted more with suspiciousness than a human character which is outlined via a “guilt-free look” (Kyriakos 2001). This is a proof that until today the racial issue and the identities constitute a subject taboo in Greek cinema.

So the aim is this “guilt-free look” in the cinema by putting the subject of the racial identity in a second level. As Foucault mentions “the meaning of the gender made possible to batch in an artificial unity anatomic data, biological functions, behaviours, senses and pleasures and permitted the use of this notional unity as causal principal, as ubiquitous meaning. In this way the genre managed to function as the only and the blanket meaning” (Foucault, 1978: 48-51). So by talking for this guilt-free look, essentially we talk for a final aim, which is the voluntary elimination of the gender itself via the science, which is one of the main and the basic principles of the Post-Gender movement.

The cinema, wanting to touch on in such movements and aims, has tried to approach this look. In Greek landscape the filmmaker who has approached more crucial this issue is Panos Koutras. As Jacques Mandelbaum wrote in the newspaper *Le Monde* that Panos Koutras is someone that deserves to be attended narrowly because he is one of the few Greek directors that really film his country taboos. In his first feature film, *The attack of the giant mussaka* (1999), a man (Giannis Aggelakis) plays a woman as initial convention and without references

in transvestite condition. It constitutes an exemplary camp movie, because it is important the intersexuality as a modification game of the parts which specify the genders (Kyriakos, 2001). In his movie *Strella* (2009) Koutras approached even more dynamically the issue of the gender and transgressive identity by getting inside in its own root, which is the incestuous relationship of *Strella* with her father. Judith Butler supports that the negation becomes the establishing moment of what Freud calls “consolidation of the gender”. The boy, by refusing his mother as an object of desire, either internalizes the loss identifying himself with the mother or transfers his heterosexual mooring and in this way fortifies the mooring with his father embedding thus his masculinity (Butler, 1999). With this reasoning we come to the conclusion that the determination of the gender is indissolubly connected with the Oedipus complex and the incest.

The investigative questions that are going to be answered in this research are: How are presented the transgressive identities in the movies of Panos Koutras? How Panos Koutras is approaching the Post-Gender movement? Which is the basic different with the existing greek queer cinema?

KEYWORDS

post-gender, queer cinema, transgressive identities

INTRODUCTION

The representation of identities is an issue that, even though today it is considered a taboo, has influenced the art of cinema for several decades. Constantine Kyriakos mentions in his book ‘Diversity and Eroticism’ (2001) that: ‘the quest for diversity and the lack of similarity in kind, class, religion, sexuality and ethnicity, is still in exploratory stage with regard to the science of arts of theatre and cinema in Greece.’ (Kyriakos 2001: 8). If this is translated to the question of the representation of the ‘third gender’. In the context of the contemporary Greek reality in cinema, is an issue of concern, while it is treated as a taboo and in many cases, it is the very reason for not funding and promoting the cinematographic work.

OLD GREEK CINEMA (OGC)

The representation of gay figure has begun since the time of Old Greek Cinema in the Greek reality. The boom of OGC covers the period from 1965 to 1975, when the Greek reality was in a period of reconstitution, having undergone an economic and national fragmentation after the end of the German Occupation (1941-1944) and the Greek Civil War (1946-1949). With the dominance of the National Army and the Rightism after the end of the Civil War, the new regime had to integrate its ideological projects and directions in cinematographic art. The issues that the governments of those times wanted to raise were mainly the issue of family and conservatism, which they wanted to impose through

cinema. The funny feature of marriage in the end of every Greek film is not a coincidence. Greek morality and customs, as well as the promotion of morality, were some of the basic characteristics of the narrative. A special example is the effort of the son of the family to marry off his sister, as well as the gathering of the necessary dowry for the groom (Lambiri-Dimaki 1986). The gay figure came at the OGC in the 1950s and was portrayed as a weird caricature. Characteristic example was *Fifis*, which was performed by Stavros Paravas (Kyriakos 2001). All these appear within the framework of the popular cinema of entertainment, which had many theatrical characteristics without paying particular attention in aesthetics and cinematographic form. This species was characterized as low comedy (Diamantopoulos, 2015). As Kyriakos mentions “The homosexuals in the Greek low comedy appear to be commonplace. There is no authenticity. It is replaced by *deja-vu* and *cliche*.” (Kyriakos 2001: 65). Low comedy, therefore, spurred the ideological propaganda of governments by promoting sexism, misogyny, homophobia, and patriarchy, covering them with the cloak of the cheap and marketable humor that the Greek people needed urgently after what they had been through. Homosexuality, feminine sexual emancipation and the communist danger are the main features of fear during the OGC period. At the same time, the phenomenon of homosexual creators who have acquired a heterosexual public life in order to be able to keep their careers has appeared. The phenomenon of queening (according to David Van Leer) is also observed at the same time. Queening is a silent introduction to heterosexual fiction patterns surrounding the homosexual community. Thus, there are many films in which a cryptic testimony of homosexual experience can be recognized (Kyriakos 2016). During the period of the dictatorship of the colonels, the OGC was very profitable and promoted more intensely sexist and racist elements. There are many examples of such films, such as: *‘No matter how much you wash a black person, you are wasting your soap.’* (Kostas Karagiannis, 1973)

THE MODERN GREEK QUEER CINEMA

Modern cinema has treated homosexual people as particular beings. Their existence is outlined by a mystery, mainly issuing problems of their everyday life, such as the film *Angel* (Katakouzinis, 1982), which was directed by Katakouzinis. At the same time is noticed the presence of a new homosexual, the one of the young, handsome, melancholic man (Kyriakos 2016). *Angel* is the first Greek film to deal with issues of homosexuality and transvestite in Greece and received some awards. The film addresses the loneliness and the problems faced by a homosexual man in the center of Athens without conflicting at the same time with the stereotypical gay figure of that time. The impressive fact is, as Kyriakos says: “Firstly, the strict criteria of the militant homosexual community and reliable gay publications that seem to be disturbed by the defeat of the central character and the spirit of lyrical fatalism in the recording of a stifling reality. Secondly, the comments in the left-wing newspapers, where it

is recognized that a film is “likeable” but does not conflict with the established image of homosexuals in the collective unconscious of the public.’ (Kyriakos 2016: 182)”.

In addition, from the film derives a very pessimistic side of the homosexual. A typical example is the dialogue: “He always has to hide and defend himself because he is always an easy target” (Katakouzinis, 1982).

The radicalization of the homosexual cinema and the entering of the notion “queer” cinema, which covers a much clearer political spectrum, strengthens the degradation of the enforcement of the social gender that has been created over the last centuries. Butler in ‘Body that matter’ says: “The term “queer” has acted as a linguistic practice that intended to shame the subject that it called so or, to be more precise, to produce a subject through its embarrassing call. The power of the word “queer” stems precisely from the repeated evocation that linked it to incrimination, pathologisation and insult. If the performative utterance operates as sanction that creates the heterosexuality of the social bond, it may also be introduced as a shameful taboo that makes “queer” all those who resist or oppose themselves to this social form as well as those who occupy it without the hegemonic social sanction’ (Butler 2008: 413)”.

At the same time, a queer film poses threatening questions about the masculinity of certain viewers: the admission of interest in some queer films is a challenge to patriarchal principles (Kyriakos 2016).

CAMP AND QUEER AESTHETICS IN THE CINEMA OF PANOS H. KOUTRAS

From the films of 1980s, such as ‘Angel’, until now, the main feature that characterized the films was the particular and hostile world that faced homosexual people. In the ‘new queer cinema’ are included according to Kyriakos: “The quest for sexual partner and pleasure, the cost of the creation of a male or female couple, the genesis of the gay adolescent and the dignified admission of sexuality, the range of consequences of AIDS and globalization, the world of transgender’ (Kyriakos 2016: 238)”.

Panos H. Koutras, from his very first full-length film, showed that he is a director who approaches the “new queer” cinema from his own aesthetics and perception. At first, Koutras cinema does not deal with the issue of homosexuality only on the part of narration, but also on its own aesthetics, something that several creators have not conquered. Koutras films are characterized as Camp, as Babuscio says: ‘Camp consists of four elements. The first of these is the irony and, more specifically, irony, style/aesthetics, humor and its theatricality.’ (Babuscio et al., 1991: 80-112). These three elements can be identified very much to Koutras cinema from his very first film ‘The Attack of the Giant Moussaka’, in 1999. Camp and gay friendly aesthetics can exist in a cinematographic work without the narrative itself referring to this issue. As Kyriakos states: ‘Those elements of a person, a state or an activity that express or that are created by a homosexual sensitivity’ (Kyriakos 2016: 91). A characteristic example,

which is well-known, is the interview of the director N. Koudouros (ANT1., T. Stefanidou's show 2007), who criticized the TV series 'Just in time' (2005-2007, Greece: Mega TV) for having homosexual content, although this TV series did not deal with the subject at all and none of the characters ever appeared as a homosexual (Kyriakos 2001).

THE ATTACK OF THE GIANT MOUSSAKA (1999)

In the Attack of the Giant Moussaka, Panos Koutras makes his debut with a very special film, combining the elements of fantasy and reality and presenting an excellent first sample of camp cinema. Panos Koutras combines the aesthetics of soap opera, news and science fiction films with a strong sample of pop culture and aesthetics, as well as an irony that comes out of every part of the narrative. The reality that maps before the attack of the moussaka does not explain whether it is the modern reality of Athens or a certain utopian / dystopian dimension of science fiction. Koutras raises issues such as the corrupt political system of modern Greece, the misinformation of the media and the game of money and power through a purely ironic and imaginative point of view.

Trash and gay aesthetics can be observed throughout the film. From the uniforms of the astronomers that are pink to the flying UFO which has the colors of the LGBT flag. The influences from musicals and soap operas are also harmonized in the context of the aesthetics that Koutras wants to emphasize. At the same time, it is observed a number of choices, moves and patterns of behavior, all made by the gay community. These are observed throughout the whole film and not just as features of the characters that are gay.

One of the most important features of the film, which will be analyzed later, is the concept of the gender of the heroine Tara, a divine of Athens interpreted by Yiannis Angelakis. Tara is not characterized as transvestite in the entire film and those surrounding her are comfortable with the particularity of her gender. Alexis Alexiou, who has a love affair with her, does not seem to be troubled by the fact which is not even mentioned (as happens in Strella before her first erotic encounter with George). More generally, in Athens as it is described in the film, it seems that the concept of gender and sexual choices do not play any role in the narrative as the characters are free to choose whoever they want. There are heterosexual, homosexual, transsexual and transvestite characters, but there is no mention to these terms.

REAL LIFE (2004)

Real Life is a post-queer look of the same director who, using references to Greek black and white films linked to class stratification, American soap operas and archetypes, portrays his second full-length film. There are several queer reports in the film, which are part of aesthetics. They focus on the fetishisation

of the male body and the costume choices of K. Kalligas (Kyriakos 2016), as well as her movements and behaviors. As Kyriakos states: 'impermeable masks, eccentric, luxurious clothing in bold colors, accessories (necklaces, long gloves, sunglasses), impressive hairstyle and intense makeup, motions and poses. An imposing and intimidating resident of the "created world" that names science the lie, the undermining and the concealing.' (Kyriakos 2016: 264). The costume and aesthetic choices as well as the moves are so intense that they end up having a connection with drag. The swimming pool of the house has a special role in the story as it can act as revival and the beginning of a new life (Aris, Alexandra) or as a shelter that has been transformed into a prison (Ms. Kalliga). In the second case, it is like the pool itself hides and in some cases brings to the fore the wrong choices and the crimes of the Kalliga family (the appearance of the huge fish), which can be linked with them 'The Hunters' (Angelopoulos, 1977) of Angelopoulos and the crimes of the bourgeoisie during the period of the Greek Civil War which were under the snow in the form of a rebel corps. Trying to explain the pool under the queer point of view, we can see the exclusion from the heterosexual society. This is clear from the color palette of the sky that Aris and Alexandra see when they dive into the pool.

STRELLA (2009)

Strella is one of the most well-known and widely discussed samples of queer cinema in Greece. A film that, according to its screenwriter, Panagiotis Evangelidis: 'Is a story about free will and, hence, freedom' (Evangelidis and Koutras, 2010: 112). This film was blamed and not funded because it described love and a particular, but real, form of family, without bringing some kind of nemesis to the protagonists. Panos Koutras states that 'The excuse of denial was the end and the fact that I deal with a very serious issue and I "humiliate" it was the "happy end" (the fact that there is no punishment)' (Evangelidis and Koutras, 2010: 117). Koutras, radicalizing the queer community's psychology and the love without border (border of any kind), presents us his side of the story of Oedipus using Freud's analysis. The way in which the queer community, and more specifically the trans community, is presented in the film, is something very original and real in Greece. People so sexually freed and cool, who confront their everyday problems with humor and laughter, make the viewer see this mysterious world of fancy dresses and special expressions in a way they never expected.

XENIA (2014)

In his last full-length film, Panos Koutras decided to deal with a road movie that focuses on adulthood. Xenia is one of his masterpieces, which combines the magical realistic elements and offers a special example of writing and concern about the present-day reality in Greece. Koutras works in many levels in the

film, and as Kyriakos states: “Is an imaginative and oblique commentary on “Greekness” as a confrontation with the archetypal myth and the stereotype of the national characterization. From the search of the Father and the hospitality (xenia) to the re-writing of some aspects of the myths of Odyssey, Atreides and Lavdakides.’ (Kyriakos 2016: 268)”.

The director presents the hostile country of hospitality and maps the reality of the two young brothers who conquer their goals and adulthood during their journey. A crucial moment is the death of the stuffed rabbit, which marks the entry into the adulthood of the heroes. In this film, as well as in *Strella*, Koutras uses gender in the way it is treated in the modern Western civilization and, more specifically, in Greece of the crisis. In the scene in the abandoned hotel *Xenia*, the director presents symbolically the reasons of this treatment, which are homophobia and sexism, as well as the racism that endure the economic immigrants. The name ‘*Xenia*’ (hospitality) plays a purely symbolic role in the mise-en-scene of *Koutras* as the heroes are located in a hostile place, which is strongly illustrated in the abandonment of the hotel and the isolation of heroes in it. The history of the state-owned hotels ‘*Xenia*’, which were built with money given by Marshall Plan (in order to fight Communism), their current decline (something that all state-owned entities face) as well as the modern capitalist economy that favors only the private development, play an important role during narration. This way Koutras makes a reference to the root of the problem of today’s reality, which has to do with the English-American colonialism in Greece and the Greek Civil War.

The creator uses the color palette of camp aesthetics through the light. He uses purple in many places in order to emphasize the importance of the character or the scene (*Paradiso* night club), or at the points where he wants to show the upcoming danger (attack of homophobic adolescents to Danny). Blue is also of high importance, highlighting the safety and the security as well as the continuance of the journey (the dream on the lake, the robe of their uncle). Finally, green, which is a color that symbolizes the double meaning, is strongly used by the director to show both sides of the characters as well as the double role that they will play in the narrative (uncle-father figure is the person who grew up Danny). Finally, the use of the camera works with a purely realistic perspective, emphasizing in the narrative action.

POST-GENDER FEATURES IN PANOS KOUTRAS CINEMA

From his first film, Koutras deals with the homosexual issue from a completely different look, which derives from the narrative itself as well as from the aesthetics of the director on the work. In the ‘*Attack of the Giant Moussaka*’, Tara, as well as the homosexual astronomers, is a complete personality that does not need the label of transvestite in order to live, fall in love and work. *Strella* removed the incrimination from the trans community and gave it glamor and aesthetic quality. As Kyriakos states: “they are not performers with female clothes but prestigious

displays of female glamour. Against a perception of human sexuality, which is strictly divided into “normal” heterosexual and “deviated” homosexuals, queer theory insists that there is a general covering among all kinds of human sexuality and that all kinds of sexuality are shaped by the words and images we use to describe them.’ (Kyriakos 2016: 266)”.

This way, Koutras makes a strong critique to the very concept of gender. He does not just aim at the recognition of the homosexual rights by describing a social issue through his films. He aims at the complete abolition of gender and the voluntary choice of it. Stella is a typical androgynous sample not only because she has a male molecule but because she has both characteristics in her character without refusing them in any way. She is not a boy who decided to become a girl. It is the perfect union of both to one person with its special characteristics. Sontag states that androgynous is: “the finest form of sexual attractiveness, because it means that no one must be opposed to the nature of the other. What is more beautiful to virile men is their feminine characteristic. What is beautiful to women is a virile characteristic’ (Sontag, 1983: 105-120)”.

This image contrasts with the excesses of the two sexual model identities for the creation of the two official sexual identities with the virile man and the explosively female woman.

The writers of Stella mention characteristically that today we are in a post-queer era and add that: “Neither we justify, nor rationalize, nor explain this situation. This is the situation and we move to our story with these people. As we would have done if we had a builder, a straight... No one would ever bother to explain his heterosexual sexuality.’ (Evangelidis and Koutras, 2010: 118)”.

CONCLUSION

To sum up and answer the research questions of the announcement. The cinematographic work of Panos Koutras differs from the rest samples of the Greek Queer Cinema because it does not have this incriminated look that sees the homosexual as a contract that does not need explanation and justification. Thus, the fluidity of gender and sexuality as well as the natural characters in Koutras films are directly linked to the post-gender approach and the abolishment of gender with the help of science (Nicholas 2014). So, as art always preceded science, perhaps this is a first glance at a sexless future without sexism, racism and homophobia, where every person without suspensions can act in line with their wishes.

BIBLIOGRAPHY

Antonopoulou, M., Labiri-Dimaki, I., Kavadias, G., Eleytheriou, L., and Rigos, A. (1986), *I domi tis ellinikis koinonias* (‘Structure of Greek Society’), Athens: Kentayros.

- Babuscio, Jack and Dyer, Richard and Sheldon, Caroline (1991), *Cinema and homosexuality* (trans. Dimitris Kolioidimos), Athens: Aigokeros.
- Butler, Judith (2009), *Gender Trouble* (trans. Giorgos Karabelas), Athens: Alexandria.
- Diamantopoulos, Vasilis (2015), *Roloi kai kodikes ston elliniko kinimatografo 1950-1974* ('Codes and symbols in Greek cinema 1950-1974'), Athens: Odos Panos.
- Eyagelidis, Panagiotis and Koutras, Panos (2010), *Strella*, Athens: Polixromos Planitis.
- Foucault, Michel (1978), *History of Sexuality*, Athens: Rappa.
- Kyriakos, Konstantinos (2001), *Diaforetikotita kai erotismos* ('Diversity and eroticism'), Athens: Aigokeros.
- Kyriakos, Konstantinos (2016), *Epithimies kai politiki* ('Desire and politics'), Athens: Aigokeros.
- Nicholas, Lucy (2014), *Queer Post-Gender Ethics The Shape of Selves to Come*, Australia: Swinburne University.
- Sontag, Susan (1983), *A Susan Sontag Reader*, New York: Vintage Books.

ABOUT THE AUTHOR

Iakovos Panagopoulos is a PhD Candidate in the University of Central Lancashire and a Scientific Collaborator at the InArts Lab. Born in Corfu and graduated at the Department of Audio & Visual Arts of the Ionian University Greece, he is a Greek filmmaker and researcher particularly interested in avant-garde and modernist cinema. He worked two years in television and as a freelancer videographer. After he moved to the UK, to do his Master in Cinematography for Film and Television at Bournemouth University graduated in 2016. He is now doing his PhD research at the University of Central Lancashire. His area of studies is Greek cinema and he is focusing on the work of Theo Angelopoulos. His topic is "Revisiting Theo Angelopoulos films through the historical/political aspects of civil and post civil war trauma in his coffee shop scenes and his contribution to contemporary Greek cinema." Iakovos is teaching in seminars as a visiting lecturer in Greece and the UK. He directed his first feature documentary in 2016 and he created more than a dozen short films either as a cinematographer or as a director. His films got selected in many international festival and won few of them and screened in the UK and Greek the T.V.. He is now writing a script for his first feature film.

Email: iakovospanagopoulos@yahoo.co.uk.

Website: www.iakovospanagopoulos.com

Input

PENNY PAPAGEORGOPOULOU
University of Athens, Greece
DIMITRIS CHARITOS
University of Athens, Greece
IOULIANI THEONA
National Technical University of Athens, Greece
CHARALAMPOS RIZOPOULOS
University of Athens, Greece

Polispective: An Interactive Installation Renegotiating Urban Space

ABSTRACT

Polispective is an interactive audiovisual installation in the form of a virtual environment. It investigates a hybrid type of space, in which abstract synthetic spatial elements are interwoven with urban physical environmental imagery in order to create an audiovisual spatial experience. The installation acts as a window to discover the hidden cityscape of Athens, as it is being reinterpreted within the abstract immaterial spatiality of a virtual environment. The window in question assumes the form of a projection through which the audience is able to manipulate aspects of the audiovisual composition by means of their bodily movement within physical space. The visual composition comprises of multiple perspectives of the Athenian cityscape that often escape notice by the citizens during their everyday routine. Polispective was created by the Spatial Media Design Group, located in Athens, Greece, and was presented in the exhibition titled “[OUT] TOPIAS - Performance and public/outdoor Space” which was held at Benaki Museum, Athens during 22/09/2016 - 20/11/2016 (curated by Thanos Vovolis).

KEYWORDS

installation art, virtual environment, interactive installation, embodied interaction, hybrid environment, urban space

INTRODUCTION

Every day, millions of people walk the streets of cities, yet, the majority of the urban surroundings and happenings escape their notice, due to their attention

blindness; attention is continuous and partial, given that individuals tend to miss substantially the majority of what they actually see or hear (Davidson 2011). Ignorance has been sophisticatedly praised as “concentration”, allowing for people to “miss the world making itself available to be observed” (Horowitz 2013). This contemporary daily routine of people comes in straight opposition to the concept of man, as identified by Socrates; man is the only one of all the animals that is rightfully called as “man” (ἄνθρωπος), as he carefully looks up (ἀναθρεῖ), observes and examines what he has seen (ὄπωπε) (Plato, Cratylus 399c).

However, Shklovskij highlights that man creates art, primarily to allow him/her recover the awareness and attention towards what remains unnoticed and unperceived, by making objects “unfamiliar”, interrupting the automatic and habitual nature of perception, through the process of defamiliarization / “ostranenie” (остранение) (Crawford 1984). It is possible that people may train to consciously see stimuli that would normally be invisible, shifting the border of conscious awareness within their environment (Schwiedrzik et al. 2009). The artist adopts the ways of the “child’s visual strategy”, in an attempt to arouse the audience’s curiosity towards images and sounds that are normally dismissed, “treat[ing] objects with an unprejudiced equivalence” (Horowitz 2013), in a similar manner that children do.

Forcing the audience outside of the usual patterns of perception, by changing the environment in which the familiar images and sounds of the cityscape are experienced, the Spatial Media Design Group, located in Athens, Greece created the interactive audiovisual installation Polispective, which premiered at the Benaki Museum in Athens, Greece in September 2016, as part of the [OUT] TOPIAS - Performance and public/outdoor Space exhibition, curated by Thanos Vovolis. Polispective acts as a window to discover the hidden cityscape of Athens, as it is being reinterpreted within the abstract immaterial spatiality of a virtual environment. The window in question assumes the form of a projection through which the audience is able to manipulate aspects of the audiovisual composition by means of their bodily movement within physical space.

The visual composition comprises of multiple perspectives of the Athenian cityscape that often escape notice by the citizens during their everyday routine. Photographs of the “ridge” formed by consecutive rooftops, neighborhood alleys and building perspectives that often go unnoticed by citizens wrap around the digital artifacts, resulting in a composition wherein each artifact hosts multiple perspectives of the cityscape. These artifacts are then held together by a skeletal type structure onto a larger scale composition. Embodied interaction of the audience participants manipulates this skeletal structure, ultimately resulting in a continuous deconstruction/reconstruction of the overall visual composition. This interaction also formulates the auditory environment of the installation. Each visual element emits a certain sound. As a member of the audience interacts with the virtual environment, changes in the morphology of a visual object also affect certain parameters of the sound that it emits,

thus resulting in an engaging continuously evolving audiovisual hybrid spatial experience. The audio composition partly consists of urban environmental sounds; however, when the installation is inactive, it emits rural environmental sounds, highlighting the contrast between the tranquility of the rural landscape and the intensity of city life.

Furthermore, the installation supports interaction between two or more members of the audience, hence fostering some form of social interaction amongst them, while they are transforming the audiovisual composition. This collaborative process may culminate in a synchronization of the audience members' movements, thus diminishing the distance between the two environmental contexts of the installation; the digital and the physical. Therefore, audience members assume the role of performers, pushing the boundaries between the creators and the audience, virtual and physical space, the spatial context of the exhibition space and the urban environment, eventually becoming engaged in a hybrid spatial artistic experience.

VISUAL ELEMENTS

The visual composition comprises of multiple perspectives of the Athenian cityscape that often escape notice by the citizens during their everyday transportation or walking routine. Several photoshootings were organized during the preparation of the visual content of Polispective mainly at the neighbourhoods of the center of Athens, as well as other heavily populated areas of the city. Photographs included the "ridge" formed by consecutive rooftops, neighbourhood alleys and building perspectives, creating an interesting contrast between the industrial imagery and the Athenian sky at the background.

The selected photographs were eventually texture mapped around a number of three-dimensional objects forming an assemblage, which were created using 3D modeling software. The aforementioned process resulted in a composition wherein each artifact hosts coherently merged, multiple perspectives of the cityscape. These artifacts were then held together by a skeletal type structure onto a larger scale composition. The deriving digital sculpture is a mere instance of neomateriality (Paul 2015); it converges the digital nature of the installation with the objects, images and structures people encounter on daily basis within the urban environment, which is in turn redefined and needs to be reapprehended.

The audience can bodily interact with the components – artifacts, since each participant's movements are mapped to the artifacts, resulting into continuous transformation of their shape and position. Consequently, the whole digital sculpture is organically moving, in a successive deconstruction and reconstruction motive, following the flow of body movements.



Image 1. Selection of photographs used for Polispective.

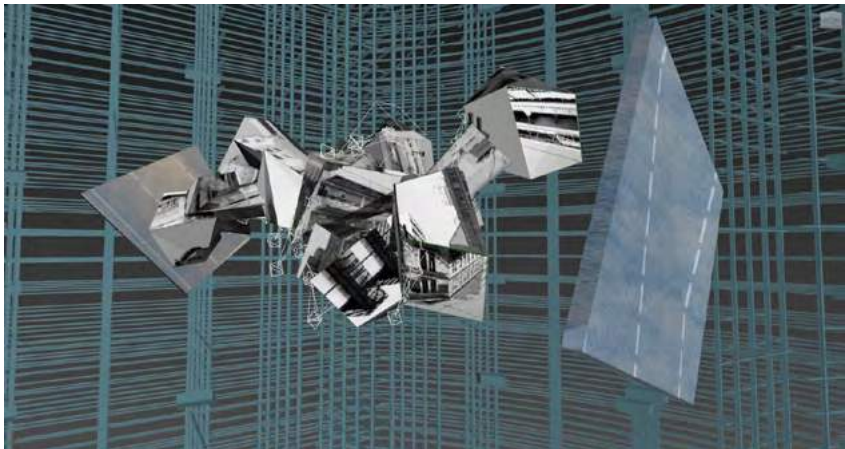


Image 2. The digital sculpture of Polispective.

THE VIRTUAL SOUNDSCAPE

Common practices of the citizens include listening to music or talking to their mobile devices while walking, thus, getting isolated from the auditory stimuli of the city. The main idea behind the audio design of Polispective was to introduce re-interpretations of urban environmental soundscapes to the audience, linked to the visual content, and allow them to interactively formulate their own soundscape. Therefore, a number of field recordings were conducted during the creation of the auditory environment for Polispective, aiming to capture the

variety of auditory intensity, texture and morphology of the urban soundscape. From harsh industrial to ambient sounds, a large number of environmental recordings were conducted, and later edited. Certain manipulated fragments of the field recordings were thence extracted and appropriately mapped to each artifact.

This embodied interaction thus formulates the auditory environment of the installation, concurrently with the visual environment. More specifically, each visual element emits a certain sound; as members of the audience interact with the virtual environment, they change the morphology of a visual object, while affecting certain parameters of the sound that it emits, such as the pitch and volume, resulting in an engaging continuously evolving audiovisual hybrid spatial experience. The audio composition partly consists of urban environmental sounds; however, when the installation is inactive, it emits rural environmental sounds, highlighting the contrast between the tranquility of the rural landscape and the intensity of city life.

INTERACTION

As a result of the interaction techniques implemented, the members of the audience implicitly assume the role of performers, pushing the boundaries between the creators and the audience, virtual and physical space, the spatial context of the exhibition space and the urban environment.

The interactive environment was developed using the Unity game engine (www.unity3D.com). The 3D objects were modelled, textured, rigged and skinned in Blender (www.blender.org). An image of each user is picked up by a Microsoft Kinect infrared camera, and the amount of curvature along two dimensions (the head-to-pelvis axis and the axis connecting the shoulders) is calculated. Each bodily rotation axis corresponds to one axis of rotation of the objects that form the skeletal structure.

The installation can support up to two persons at the same time. Each user controls half of the structure. The areas in which the users could move was marked on the floor in the form of a four-sided enclosed shape which was largely dictated by the specifications and limitations of the Kinect infrared sensor; the exact size and shape of the marked area corresponded to the minimum and maximum range and the field of view of the Kinect infrared sensor. An additional parameter that changed based on user input was sound. In particular, when the Kinect sensor could detect no users, a low-key recording of rural sounds was played back. Whenever at least one user was detected, this melody was replaced by a harsher, more industrial sound whose pitch and relative volume were mapped onto the rotation parameters picked up by the sensor; thus, users not only deformed the structure, but they also transformed the auditory landscape in the space of the installation.

The users were tracked in real-time; the tracking was mostly accurate, since the two tracked postural variations (leaning left-to-right and forward-backward) were coarse-grained and relatively easier to reliably capture (as opposed to more fine-tuned motion, such as fingers for example). Whenever the Kinect sensor detected the presence of a user, it maintained a “lock” until the user in question left the sensor’s visual field, in which case that particular half of the deformable structure the user was controlling was gradually (over the course of a few seconds) restored to its original configuration. The process began again once a new user was detected.

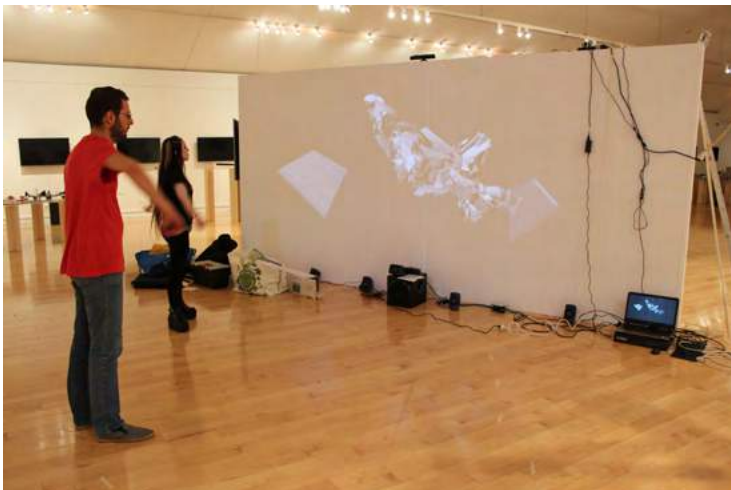
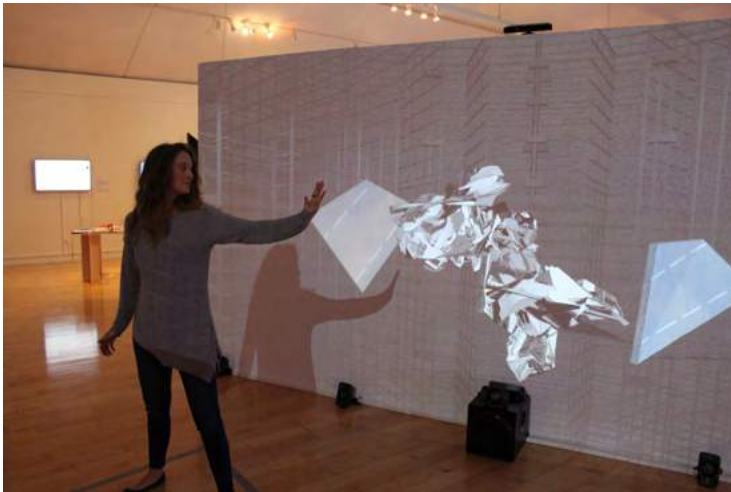


Image 3. Testing the bodily interaction of Polispective.

Each user can move independently from the other; however, both users control the same structure, since the objects they influence through their body stance are interconnected. Consequently, users may cooperate in order to impose a particular deformation of their choice on the structure, or they may compete against each other, changing the shape of the structure accordingly. In all cases, the freedom of movement of the objects allowed by the skeletal structure, while being coherently connected together, resulted in an organic shape-changing and motion of the digital sculpture. The dance-like motion of the users and the interaction between themselves and the structure led to an impromptu choreographed performative activity.

THE POSTHUMANISTIC APPROACH

Through Polispective, we try to explore, the urban “image” as it expands beyond common human perception and the everyday life condition, assuming different angles and points of view (LaGrandeur 2017), which are not only determined by humans but also from various types of devices automatically capturing images. Therefore, Polispective, a posthuman artwork by structure, “stretches the boundaries of representation to the utmost” (Braidotti 2013), since it focuses on presenting urban imagery and sound upon “unnatural” technological artifacts.

By shifting the perspective of the visitor from that of a passive onlooker to that of a performer actively interacting with the installation, we approach the city employing interdisciplinary artistic practices, allowing technology to hold a primary role during the constant dialogue between the exhibit and the visitor (Kordic et al. 2017). Art becomes partly “inhuman” (Braidotti 2013), as the nonhuman agent straightly connects to the surroundings of physical space of the exhibition, including the projection wall and demarcated area of interaction.

This posthumanistic approach in art fosters the integration of multiple perspectives among members of the audience and emphasizes the role of the nonhuman agent during the interaction (Lyotard 1991), allowing for distancing the audience from the anthropocentric concept of art as a communicative activity. Thus, technology makes available, through the artistic practice, a number of “different possibilities and understandings” to the audience (Stern 2013). Technology is used in such manner that creates discontinuity, since it binds together concepts that stem from diverse fields, yet it is the diversity that arouses the curiosity and excitement to the audience (Pepperel 2003), as they are invited to explore unfamiliar aspects of familiar concepts.

While being part of the installation itself, the human occupies a new place in the universe, a universe now populated by what Wolfe calls “nonhuman subjects” (Wolfe 2010). The individuality of human identity and the control of humans over their environment is restated by their engagement and interaction with other organisms, objects and technological systems, whether living beings or not (Hernandez 2016), which in the case of Polispective are other, synergistically

acting human beings, technological (virtual) artifacts and sound objects. The members of the audience communicate with and within Polispective through their “quantified selves” (Paul 2015), being introduced to a new understanding of the urban environment.

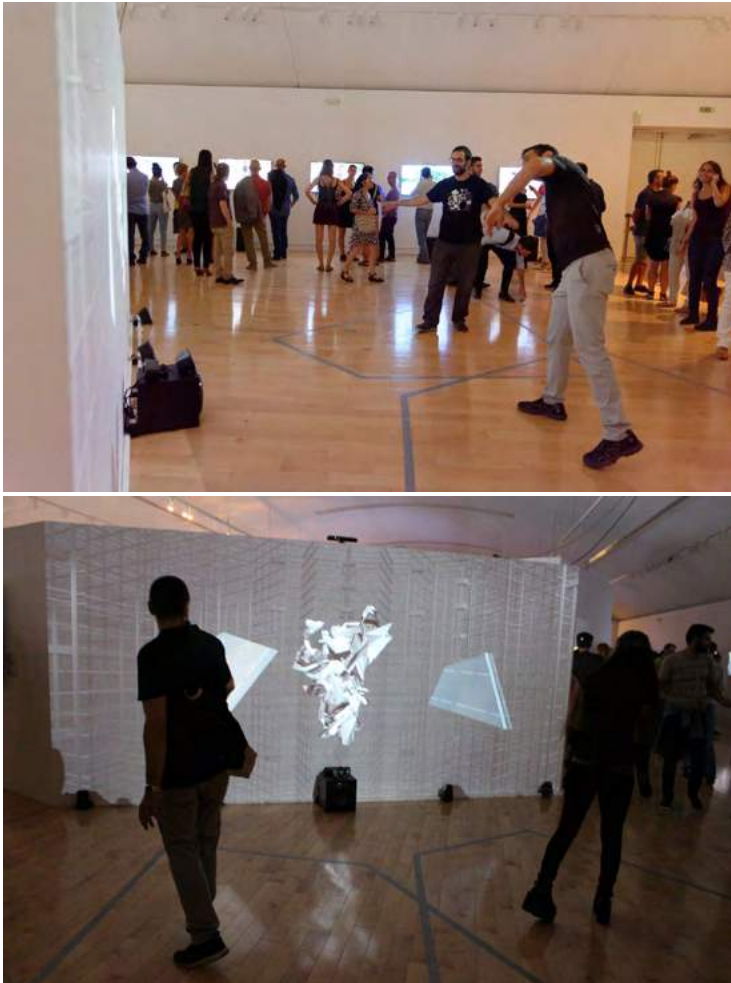


Image 4. Premiere of Polispective at Benaki Museum, Athens, Greece in September 2016, in the course of the [OUT] TOPIAS - Performance and public/outdoor Space exhibition, curated by Thanos Vovolis



Image 5. Premiere of Polispective at Benaki Museum, Athens, Greece in September 2016, in the course of the [OUT] TOPIAS - Performance and public/outdoor Space exhibition, curated by Thanos Vovolis.

REFERENCES

- Braidotti, R. (2013), *The Posthuman*, Cambridge: Polity Press.
- Crawford, L. (1984), "Viktor Shklovskij: Différance in Defamiliarization". *Comparative Literature* 36, pp. 209-19.
- Davidson, C. N. (2011), *Now You See It: How The Brain Science of Attention Will Transform the Way We Live, Work, and Learn*. New York: Viking.
- Hernandez, M. (2016), "Posthumanism, New Materialism and Feminist Media Art". *Proceedings of the 22nd International Symposium on Electronic Art ISEA2016 Hong Kong*, pp. 275-278.
- Horowitz, A. (2013), *On looking: eleven walks with expert eyes*. New York: Scribner.
- Kordic, A. et al. (2017), "Posthumanism and Contemporary Art", *Widewalls* <http://www.widewalls.ch/posthumanism-contemporary-art/> Accessed 21 June 2017.
- LaGrandeur, K. (2017), "Posthumanism and Contemporary Art", *Institute of Ethics and Contemporary Technologies*, <https://ieet.org/index.php/IEET2/more/LaGrandeur20160408>. Accessed 21 June 2017.
- Lytard, J. F. (1991), *The Inhuman: Reflections on Time*. Stanford, CA: Stanford University Press.
- Paul, C. (2015), "From Immateriality to Neomateriality: Art and the Conditions of Digital Materiality", *Proceedings of the 21st International Symposium on Electronic Art ISEA2015 Vancouver*.

- Pepperell, R. (2009). *The Posthuman Condition: Consciousness Beyond The Brain*. Bristol, UK: Intellect.
- Schwiedrzik et al. (2009), "Sensitivity and perceptual awareness increase with practice in metacontrast masking". *Journal of Vision*, 9:10, pp. 1-18.
- Stern, N. (2013), *Interactive Art and Embodiment: The Implicit Body as Performance*. Canterbury, UK: Gylphi Limited.
- Wolfe, C. (2010), *What is posthumanism?*, University of Minnesota Press.

ABOUT THE AUTHORS

Penny Papageorgopoulou is a PhD candidate at the Faculty of Communication and Media Studies of National and Kapodistrian University of Athens. Her research interests include posthumanism and human-machine interaction. In 2015, she received her M.A. in Digital Communication Media and Interactive Environments at the Faculty of Communication and Media Studies (National and Kapodistrian University of Athens). She received her BSc. in Telecommunications Science and Technology from University of Peloponnese in 2008. Since 2009, she has been working as a teacher of Computer Science in public institutes of technical and vocational training and as a freelance visual artist.

Email: penny_papageorgopoulou@yahoo.com

Dimitrios Charitos is an Assistant Professor at the Faculty of Communication and Mass Media of the National and Kapodistrian University of Athens. He has studied Architectural Design (National Technical University of Athens, 1990) Computer Aided Design and has a PhD on Interactive Design and Virtual Environments (University of Strathclyde, 1998) and teaches "Human-Computer Communication", "Art & Technology", "Visual Communication", "Digital Communication Environments" both at undergraduate and postgraduate level since 1994 in Scotland and Greece. His artistic work involves electronic music, audiovisual, non-interactive or interactive, site-specific installations and virtual environments. He has coordinated or worked as a researcher in more than 12 research projects funded by Greek or European funding bodies on areas such as: interactive design, locative media, virtual environment design, interactive art, environmental behaviour. He has authored or co-authored more than 80 publications in books, journals or conference proceedings.

Email: dvrchitect@gmail.com

Iouliani Theona is an Architect Engineer, having graduated from the School of Architecture, Faculty of Engineering of the Aristotle University of Thessaloniki. She holds a Master's degree from the School of Architecture (National and Technical University of Athens) and a Master's degree in Digital Communication Media and Interactive Environments at the Faculty of Communication and Media Studies (University of Athens), where she also collaborates as a researcher. She is a PhD candidate in the School of Architecture of the National and Technical

University of Athens. Her research interests include pervasive games, locative media and hybrid spatial experiences.

Email: iouliani@gmail.com

Charalampos Rizopoulos is a research associate at the Department of Communication and Media Studies (National and Kapodistrian University of Athens). He holds an MSc in Interactive Multimedia Production (University of Huddersfield, UK). He is currently a PhD candidate, conducting research on the cognitive and emotional aspects of immersive 3D interactive environments. His research interests include interaction design for immersive virtual reality and mobile platforms, spatial cognition and environmental psychology, and computer games design. Charalampos is a research associate at the Department of Communication and Internet Studies (Cyprus University of Technology). He has participated in several national and EU-funded research and cultural projects and is a member of the Association for Computing Machinery/ACM.

Email: haris.rizopoulos@gmail.com

IOANNIS BARDAKOS
DeTao and Shanghai Institute of Visual Arts, PRC
Paris 8 University, France
ALAIN LIORET
University Paris 8, France

The aesthetics of mathematical anathemas. The division by zero.

ABSTRACT

In this article, we are correlating the concept of taboo with the notion of the prohibited and the illegal in mathematics. Our interest lies in the act of dividing by zero. This usually forbidden act of division is related to the idea of the undefined, the infinitely small or large, the paradox and the absurd. The act of dividing by zero is portrayed, and depicted using algorithmic graphing techniques of visualization. These representations are reinterpreted and criticized as formalistic artistic creations of the illicit, the forbidden and the anathema in mathematics. The visual content is analyzed particularly focusing in the manner with which our visualization systems tend to detour the areas where the mathematical illogicality occurs. This inability to picture the unnamable is a main point of this article. Our goal is to approach the aesthetic qualities of these deviations.

KEYWORDS

Art, mathematics, division by zero, aesthetics, anathema

INTRODUCTION

Although Mathematics is generally considered¹ as a broad-ranging field of study that examines the properties and interactions of abstract systems and objects, it is being currently redefined as the domain that researches patterns². The dwelling space of these patterns, the context of their legitimacy, outlines the sub domain of mathematics for each pattern category. Hence, we have patterns of shape in Geometry, reasoning in Logic, motion³ in Analysis/calculus,

¹ Stephen Wolfram, *A New Kind of Science* (Wolfram Media Inc., 2002), 859.

² Keith Devlin, *Introduction to Mathematical Thinking* (Palo Alto, Calif: Keith Devlin, 2012), 15.

³ I suggest that the idea of motion could in this case be replaced by the notion 'calculated difference'

closeness and position in Topology, self-similarity in Fractal Geometry, counting and numbers in arithmetic, chance in Probability, etc. ⁴.

In a social context, a taboo can be defined as an action that falls into the category of the impermissible. Our intention is to examine what happens from an aesthetic point of view with these patterns in the borders or even outside of the legitimate spaces of their definitions when they become mathematical taboos.

MATHEMATICS, ANATHEMAS AND THE UNDETERMINED FORMS.

An anathema is an object or a person, carrier of an idea loathed by a powerful, axiomatically undisputed authority system. Usually the term is associated with ecclesiastical dogmatism as an absolute certainty about the validity (or not) of certain ideas. From this perspective, some ideas, and those that voice them, are being publicly condemned since they are not in synch with the axiomatic rules/rulers. Mathematical language is generated from such strict axiomatic systems (ZFC set theory, category theory, etc.). In this article, the notion of the anathema emerges when we discuss about undefined or problematic (in terms of truth values) expressions in mathematics. In this area, the indeterminate or non-existing pattern as described earlier is a by default valid candidate for the taboo as it is unmentionable, unfathomable and undefined.

The concept of definitions in mathematics is vital. Without proper description and naming the abstractions remains out of our mental grasp and totally disconnected from our understanding in both mental and physical form. Since mathematical objects are abstractions (Corry L. 1992) they are not approachable by direct acquaintance (Russell B. 1905). Using Bertrand Russell's epistemological approach, to have knowledge about a formal structure we need to describe it, define it and somehow denote it.

The lack of denotation and then definition on a subject produces lack of knowledge and subsequently lack of capability to discuss further about it in terms of truth values. Our language becomes vague and uncertain mixing without any intention different semantic categories in an intertwined absurdity.

To better understand the need of intent and definitions we make use of a concept that was very influential in the domain of cybernetics and specifically in 2nd order cybernetics. Heinz Von Foerster borrows the phrase 'Draw a distinction' (Von Foerster 2003:211) from George Spencer Brown's famous book 'Laws of Form' when he describes his constructivist epistemology-based approach in the article (Von Foerster 2003).

showing how a property is changing through a specific context of observation. (Ex. The rate of change shows difference in a temporal context).

⁴ Although Keith Devlin does not expand this definition, more patterns could be appended in this list expressing different subtopics in Mathematics. (Ex. Patterns of categorization or grouping in Set Theory)

We use the same concept of distinction as a fusion of intent and choice. George Spencer Brown (Spencer Brown G. 1979:3), suggests that as a construction we need to draw a distinction. He suggests that we call it the 'first distinction' and the space in which it is defined/drawn by that choice, 'space severed or cloven by the distinction'. A signal is any mark token or sign with regard to the distinction. As intent he defines the use of any signal. This intent produces the 'First canon' the 'Convention of intention'. According to George Spencer Brown, the intent of a signal is limited to the use allowed to it. 'What is not allowed is forbidden.' This forbidden element is what we correlate with the taboo and the anathema.

EXPLORING THE AESTHETICS OF MATHEMATICAL ANATHEMAS

To observe the aesthetics of the anathema in mathematics, we need to identify each time the context under which the anathematized expression manifests. This means that we need to specify a subdomain, a theory or a structure to detect the language we need to use to name it. It might seem as a self-referential paradox to name the unnamable but denoting a concept can be a generalized process of choosing or drawing a George Spencer Brown type distinction. This distinction is a step in creating a new context that augments the old axiomatic one. In such a self-referential way we create a series of meta-contexts in a generative and fractal manner. The aesthetic value of the anathema is ruled from that meta-context.

Once the choice for the linguistic context of each domain is made we need to select the methodology for representing⁵ in an aesthetic way the problematic text. This process in our case is a creative blend between traditional visualization (graph plotting, diagrammatic reasoning and data interpretation) and artistic expression. We can describe this second factor as an ambiguous and abstract manifestation of interpretations that aids in blurring the strict constraints of a direct and absolute mathematical axioms.

We chose to study the problematic of mathematical taboos and their aesthetic value from the semantic realism's⁶ point of view without choosing sides on issues concerning the linguistically independent existence of mathematical objects. Since our main concept is the act of division by zero we do not focus on questions about the existence of nothing, everything, zero or infinity.

Such anathemas in mathematics are mostly related with problematic reasoning processes that are correlated with semantic intertwine⁷ (Quinton St.,

⁵ Representation is used in the form of semantic translation using symbols forms graphs sounds or even more perplexed and abstract ways to connect the mathematical text with an aesthetic form.

⁶ This is the view that goes beyond the duality of formalism and Platonism suggesting that meta-mathematical statements, expressions in mathematics that describe mathematical objects, do have meaning.

⁷ John G. St. Quinton, 'Semantic Intertwine: The Anathema of Mathematics' (IEEE, 2010), 1–5,

John G. 2010). The lack of direct meaning or specific 'truth'⁸ creates a phase of self-censorship by the mathematical language structure itself. The use of an undefined expression (for example in the context of the calculus the division by zero) is automatically forbidden.

The aesthetics of this forbidden expression in terms of function plots is usually based in a contouring process around the point of non-determinability. This creates loops and hoops around points on a plane, in space or on a curve. We can comprehend that by observing the traditional visualization methods using graphs in two or three dimensions.

Even with more complex forms of visualizing functions and data sets the convergence towards infinity creates hidden areas out of our attention span. As if we need a change of context to include the new non-observable area into our direct observation field.

VISUALIZING THE DIVISION BY ZERO

The concept of zero is clearly associated with many domains in mathematics. In set theory, zero is the cardinality⁹ of the null (empty) set. In abstract algebra, zero is a neutral or an absorbing element during the use in addition or multiplication respectfully. In propositional logic, zero denotes a false (non-true) proposition. Zero is also the integer preceding 1 in the context of number theory.

Dividing by zero as a mental experiment is usually portrayed as a nonsense act. One cannot partition a group or a set in no parts at all. But this act is only related with the context of counting and quantities in a traditional (intuitive) way. Division by zero in traditional¹⁰ mathematics can be obviously met in calculus with functions that converge towards a form $A/0$ where A is a non-zero element. A mathematical graph plots around the variable points (x, y) where we observe a division by zero is usually depicted as a hole. So, in that context, the unnamable remains hidden. In a way we try to obscure the neighborhood where the anathema appears. In a form of mathematical censorship division by zero appears as the absence of its own visualization. In the case of traditional function with real numbers, the process of division by zero produces a visible infinity, the aesthetics of the graph tend to lead our attention toward the 'incalculable' with lines never converging towards the desired result.

An important problem to consider is that in every thematic in the domain of mathematics the 'context', which usually refers to all the axioms that generate the theorems and the proofs, gives the meaning. Hence, we could always

doi:10.1109/UKRICIS.2010.5898155.

⁸ Since mixed semantic categories produce perplexed truth values there is no specific truth and the propositions remain undefined.

⁹ Cardinality is the quantity of elements contained in a set.

¹⁰ Usually by this we are referring to Algebra or Calculus with real or Complex Numbers (in 2 or 3 dimensions)

use the same idea of division by zero under a new constructed context where such an action makes sense. In that case, its depiction and subsequently its aesthetics would have a completely different and nontraditional visualization approach.

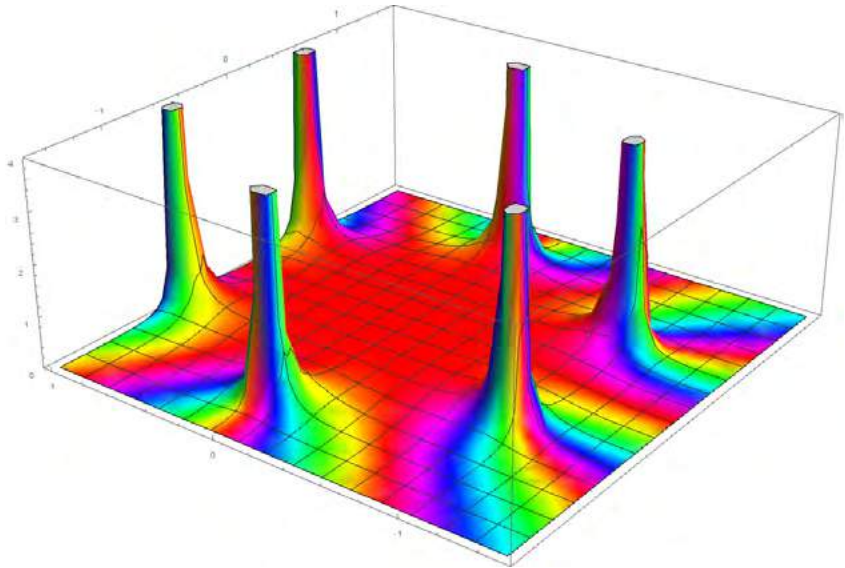


Image 1: Division by zero in complex functions.
Where the denominator becomes zero, the result is an anomaly.

The Division by Zero in Physics

An example of such a different context where the division by zero could make sense is Physics. After all, mathematics longs to be contextualized to make sense. In mathematical physics calculations are being made in space-time algebra, which is a specific type of Clifford¹¹ algebra. There are new ideas and proposals (Czajko, J. 2004) to expand the use of physics into an infinite-dimensional fractal Cantorian space time where division by zero is not a paradox and sense is made from it.

The aesthetics of division by zero in relativistic physics are often associated with black holes where gravity converges towards infinity and space-time curves infinitely. Usually such infinities are explained from divisions by zero in the mathematical formulas.

¹¹ A Clifford algebra is an algebra produced by a vector space with a bilinear form.

ALGORITHMIC VISUALIZATION

Our personal approach in mathematical anathemas and division by zero has two approaches. The first one is visualization based on line integral convolution methods and the second one is purely artistic using self-referential¹² or recursive functional systems. For both examples we have used the platform of Wolfram Language.

As a visualization method, the line integral convolution uses a traditional algorithmic noise image and diffuses it onto a flow of a vector field's two-dimensional plot. The areas where the plots show a division by zero and where paradoxes appear are depicted with loops, wholes or weird cuts and twists.

In a less technical and more artistic approach, we provide the visualization of another paradox anathema (Self-referential recursion). In this case study we introduce a convergence to recursion function that applies an edging detecting algorithm (an edge detection model applied on recursively). The process is not manifested an infinite time but due to artistic choices it had to be stopped at a specific number of recursions. It is obvious that yet here, the infinity cannot be depicted but shown as a non-infinite process with the use of only a minimum chosen number of steps.

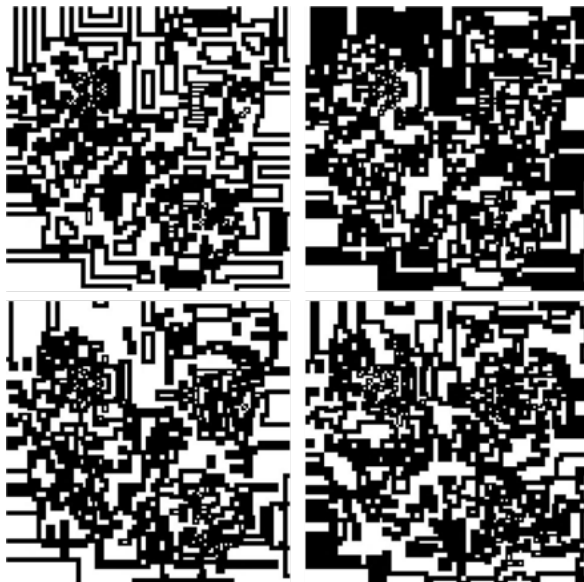


Image 2: John Bardakos 2014–2015. Line Integral Convolution art made with Wolfram Mathematica. In this piece. The points where the division by zero occurs show an abnormality in the flow. The noise image that is diffused on these fields shows similar discontinuities.

¹² Although Self-reference does not have a direct connection with the division by zero, it has one with infinity and therefore the correlation with the mathematical anathemas is in the same context.

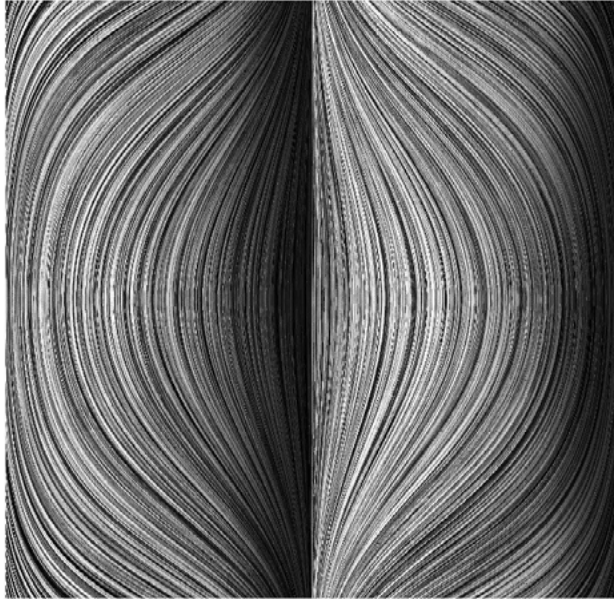


Image 3: John Bardakos 2016–2017. A recursive edge detection. Approaching the mathematical anathema (Infinity) via a nested function in Wolfram Language.

CONCLUSION

One of the main points of this text is that visualization methods in mathematics tend to yield the same generative process that forms mathematical structures theorems and proofs. The same drive, choice or inability that leads us to hide the division by zero in the text or the proofs is the same one that leads us to hide them from a visualization point of view, with holes, or ‘obscured’ areas.

There are no universal taboos in mathematics and if we would try to generalize this position, there are no universal taboos in any human construction. Anathemas, taboos and restrictions are related to laws that have meaning only in the context that encapsulates the process. In our case the context is described by mathematical axioms. Constructions that tend to place themselves outside these axioms are non-mathematical therefore they can be characterized as anathemas. The relative context that feeds our semantic interpretation is the guide towards the irrationality of our expression.

REFERENCES

- Corry, L. (1992). Nicolas Bourbaki and the concept of mathematical structure. *Synthese*, 92 (3), 315–348.
- Czajko, J. (2004). On Cantorian space-time over number systems with division by zero. *Chaos, Solitons & Fractals*, 21 (2), 261–271.
- Devlin, K. J. (2012). *Introduction to mathematical thinking*. Keith Devlin (July 18, 2012)
- Quinton, J. G. S. (2010). *Semantic Intertwine: The anathema of Mathematics* (pp. 1–5). IEEE.
- Russell, B. (2005). On Denoting. *Mind*, 114 (456), 873–887.
- Spencer Brown, G. (1979). *Laws of Form*.
- Von Foerster, H. (2003). *Understanding understanding: essays on cybernetics and cognition*. New York: Springer.
- Wolfram, S. (2002). *A New Kind of Science*. Wolfram Media Inc.

ABOUT THE AUTHORS

John (Iannis) Bardakos is a traditional and digital artist and a Senior Lecturer in the Technoetic Arts Department in DeTao at the Shanghai Institute of Visual Arts. He is a member of the INREV research team in Paris 8 University and a researcher in the HyperMedia Lab of the Athens School of Fine Arts and he is doing a joint Ph.D. program between the two universities. John studied mathematics and art and after working as a producer and director in the domain of film and animation for more than 20 years he pursued an academic career in digital arts, technology aesthetics and philosophy.

Email: jbardakos@gmail.com

Website: <http://johnbardakos.com>

Alain Lioret is a Generative Artist and an Associate Professor at 'Arts et Technologies de l'Image' (University Paris 8, France) within laboratory INREV (Digital images and Virtual Reality). He has been working for several years researching and applying artificial life and artificial intelligence (connectionism, evolutionism, cellular automata) in the artistic field. Alain Lioret is the author of the books 'Émergence de Nouvelles Esthétiques du Mouvement', and 'L'Art Génératif'. He is a specialist in research & development (innovative techniques in 3D animation, specialized use of dynamics, etc.), and takes part in a variety of related projects (virtual actors, Attitude Studio R&D, etc.). Alain Lioret art work is related to being and creature motion and in the broader domain of artificial life, using techniques deriving from biological inspirations, neural networks, genetic algorithms, programming, fractals, crowd simulations, etc.

Email: alainlioret@gmail.com

Website: <http://alainlioret.fr>

**LAN Game:
Space, density, will, self-organization
within human - machine interaction
in a live electronics work**

ABSTRACT

In this work we address human - machine interaction and their cooperative effort towards the real-time creation and performance of 'LAN Game' - an open-form live electroacoustic music work. What is «live» in an electroacoustic work? How can human and artificial-(ly intelligent? cyclothymic?) agents coexist and interact with each other? These are the basic questions set by the work, which is created by an interactive computer application and is based on the real-time creation of sonic events that are produced by the relationship between two human and two artificial agents.

The two artificial agents, connected via a local area network, produce micro-sounds which combined into sonic clouds of variable density and spatial distribution, compose the microstructural elements of the work as a unified sonic environment. The structural evolution of this 'soundscape' in time is dependent on the constant dialectic relationships between the two artificial agents as well as each one's relationship with its own 'paired' human-agent from whom they receive data through a graphical user interface. This relationship is realizing a goal-achieving routine, in respect to the density of the produced sound events and their spatial distribution as well as a response index towards achieving this goal. Target values for these goals are set and re-evaluated in real-time during every live performance of the work, by means of machine learning techniques based on data from past performances. The artificial agents' 'idiosyncrasies' and thus each one's capacity towards achieving the goals is influenced by the paired human-agent who 'trains' her artificial partner in real-time giving it the confidence (or not) to take a leading role in the evolution of the work.

KEYWORDS

Machine learning, agents, networks, live electronic music

ΕΙΣΑΓΩΓΗ

Η βασική ιδέα για το LAN Game - ενός έργου ζωντανής ηλεκτροακουστικής μουσικής ανοιχτής φόρμας, ξεκίνησε από το ερώτημα “Τι είναι ‘ζωντανό’ σε ένα έργο ηλεκτρονικής μουσικής;” Φανταστείτε έναν ή περισσότερους ανθρώπους επί σκηνής πίσω από φορητούς υπολογιστές – ένα πολύ συνηθισμένο σενάριο σε μια συναυλία ‘ζωντανής’ ηλεκτρονικής μουσικής. Έχει κάποια σχέση η κινησιολογία τους με τον παραγόμενο ήχο; Συνήθως όχι. Σε ένα ακουστικό μουσικό σύνολο θα υπήρχε αυτή η σχέση και θα ήταν αυτό που θα μας έπειθε ότι αυτοί οι άνθρωποι πραγματικά παράγουν εκείνη τη στιγμή τους ήχους που ακούμε. Η φυσική ενέργεια που εξασκούν πάνω στα όργανά τους είναι αυτή που κάνει πχ. τις χορδές μιας κιθάρας να πάλλονται και να παράγουν ήχο με ένταση ανάλογη της ενέργειας που έχει εξασκήσει η χειρονομία του ερμηνευτή πάνω τους (η οποία μπορεί να συνοδεύεται και από μια θεατρικότητα). Όταν μιλάμε για ήχους που παράγονται από ηλεκτρονικό υπολογιστή αυτή η σχέση δεν υπάρχει – πχ. με το πάτημα ενός πλήκτρου μπορούμε να έχουμε οποιονδήποτε ήχο. Άρα στο αρχικό μας σενάριο δεν ξέρουμε τι πραγματικά κάνει ο χειριστής του υπολογιστή επί σκηνής – θα μπορούσε να βλέπει τα email του ή να παίζει πασιέντζα – η όλη εμπειρία βασίζεται στην καλή πίστη του ακροατηρίου ότι όντως οι πράξεις του - οι χειρονομίες του - παράγουν τους ήχους που ακούγονται (Emmerson 1994). Αν σε κάθε μία από τις χειρονομίες αυτές αντιστοιχεί ως άμεσο αποτέλεσμα ένας αντίστοιχος ήχος η σχέση αυτή μπορεί να γίνει τουλάχιστον πιστευτή¹ αλλά στις περισσότερες περιπτώσεις, όπου ο ερμηνευτής μας ελέγχει μεγαλύτερες – περισσότερο μακροδομικές - ηχητικές δομές ή στο άλλο άκρο ‘εσωτερικές’ διεργασίες του μηχανισμού παραγωγής του ήχου, αυτή η σύνδεση καταρρέει πολύ γρήγορα. Αυτό μας οδηγεί στο δεύτερο βασικό ερώτημα που θέτει το έργο: “Πως μπορούν να συνυπάρξουν και να αλληλεπιδράσουν άνθρωποι και (ευφυείς;, κυκλοθυμικές;) μηχανές σε ένα τέτοιο περιβάλλον;” Στην πρώτη εκδοχή του έργου (2010) οι ερμηνευτές χρησιμοποιούσαν χειριστήρια ηλεκτρονικών παιχνιδιών για να προκαλέσουν ή/και να παραπλανήσουν το κοινό που δεν μπορούσε να είναι σίγουρο αν στα αλήθεια έχουν κάποια συμβολή στην εξέλιξη του έργου ή απλά παίζουν ηλεκτρονικά παιχνίδια επί σκηνής.

Στην εργασία αυτή θα περιγράψουμε τη δεύτερη εκδοχή του έργου (2013 και μετά) που βασίζεται στη σχέση δύο ανθρώπινων (human) και δύο τεχνητών (artificial) πρακτόρων (agents) που καθοδηγούνται από έναν τρίτο τεχνητό πράκτορα². Το έργο έχει τη μορφή εφαρμογής υπολογιστή γραμμένης στο

¹ Όχι πάντα ενδιαφέρουσα όμως λόγω των άπειρων μορφολογικών χαρακτηριστικών που μπορεί να έχει ένας ηλεκτρονικά παραγόμενος ήχος εν αντιθέσει με τις κινησιολογικά πολύ περιορισμένες χειρονομίες με τις οποίες συνήθως αλληλεπιδρούμε με έναν υπολογιστή.

² Κατά τους (Woolridge και Jennings 1995), ως τεχνητοί ‘ευφυείς’ πράκτορες εννοούνται κομμάτια κώδικα (λογισμικού) που λειτουργούν χωρίς απευθείας διάδραση με τον χρήστη (αυτονομία - autotonomous), αλληλεπιδρούν με άλλους πράκτορες (κοινωνικότητα - social), ανταποκρίνονται στα ερεθίσματα του περιβάλλοντός τους (αντιδραστικότητα - reactive), και παίρνουν αποφάσεις ως

προγραμματιστικό περιβάλλον του Max³. Παρακάτω θα θέσουμε το ερευνητικό και καλλιτεχνικό υπόβαθρο της εργασίας, ενώ στο τρίτο μέρος θα αναφερθούμε στο ηχητικό περιβάλλον του έργου, στο τέταρτο θα αναλύσουμε τη λειτουργία των πρακτόρων που δρουν για τη δημιουργία του και τέλος, στο πέμπτο θα εξάγουμε σχετικά συμπεράσματα και θα προτείνουμε περαιτέρω δουλειά πάνω σε αυτό.

ΘΕΩΡΗΤΙΚΟ / ΚΑΛΛΙΤΕΧΝΙΚΟ ΥΠΟΒΑΘΡΟ

Ο Di Scipio, ως προς το ρόλο του συνθέτη σε ένα διαδραστικό έργο, προτείνει μια 'μετατόπιση από τη δημιουργία επιθυμητών ήχων με τη χρήση διαδραστικών μέσων, προς τη δημιουργία επιθυμητών αλληλεπιδράσεων που αφήνουν ακουστικά ίχνη.' Εννοεί λοιπόν τη διάδραση ως ένα 'υποπροϊόν των αλληλεξαρτήσεων, σε ένα χαμηλότερο επίπεδο, μεταξύ των συνιστωσών του συστήματος' (Di Scipio 2003, 271) και όχι ως μια διάδραση ανθρώπου – μηχανής. Στο AESI⁴, μια οικοσυστημική εγκατάστασή του Di Scipio (2003, 274), το σύστημα λαμβάνει δεδομένα ('ενέργεια') από το περιβάλλον του και αυτό-οργανώνεται με βάση την εσωτερική του λειτουργία. Οι λειτουργίες που με βάση μια συστημική θεώρηση ενσωματώνει στη συμπεριφορά του είναι η αντιστάθμιση (compensation), όπως η μείωση της έντασης του παραγόμενου ηχητικού υλικού όταν αυτή αυξάνει στο ηχητικό περιβάλλον του· η παρακολούθηση (following) με κάποια (καθ)υστέρηση στη μεταβολή της τιμής μιας δεδομένης μεταβλητής (που ορίζεται από κάποια άλλη διαδικασία) όπως σε πολλά βιολογικά συστήματα· ο πλεονασμός (redundancy), δηλαδή η υποστήριξη ενός κυρίαρχου χαρακτηριστικού του περιβάλλοντος, (π.χ. η αύξηση της πυκνότητας των παραγόμενων ηχητικών κόκκων όταν η εξωτερική ένταση δυναμώνει) και ο ταυτοχρονισμός (concurrency), δηλαδή η υποστήριξη ενός ηχητικού χαρακτηριστικού αντιτιθέμενου ή και ανταγωνιστικού προς το κυρίαρχο, (πχ. η ενίσχυση ψηλών συχνοτήτων όταν στο δωμάτιο υπερισχύουν οι χαμηλές). 'Σκοπός των λειτουργιών αυτών είναι η δημιουργία ενός δικτύου περιορισμών στις μεταβλητές του χρόνου εκτέλεσης και η ρύθμιση αυτών των περιορισμών ανάλογα τόσο με τις εξωτερικές (συντονισμοί χώρου) όσο και με τις εσωτερικές συνθήκες (χαρακτηριστικά του ήχου που παράγεται από τον ίδιο τον υπολογιστή, προτού αυτός εξαχθεί στα ηχεία).' (Di Scipio 2003, 274)

Παρόμοιες προσεγγίσεις έχουμε και στα (Lewis 1999), (Yee-King 2007), (Hsu 2007), (Van Nort, Braasch και Oliveros 2009) κ.α., όπου οι συνολικές αντιδράσεις των συστημάτων που περιγράφουν καθορίζονται από τη σχέση τους με κάποιες εξωτερικές συνθήκες - εδώ τον ήχο που παράγεται από έναν

προς το πότε θα λειτουργήσουν και τι θα κάνουν [προδραστικότητα (παίρνοντας την πρωτοβουλία να δράσουν αντί να αντιδρούν σε γεγονότα) – proactive], κάπως σαν ένας άνθρωπος δηλαδή.

³ <https://cycling74.com>

⁴ Audible Eco-Systemic Interface.

άνθρωπο που αυτοσχεδιάζει μαζί τους. Ο Young ορίζει τις ιδιότητες που θεωρεί ότι πρέπει να έχει μια αυτόνομη μηχανή αυτοσχεδιασμού: Προσαρμοστικότητα, αυτεξουσιότητα, εμπύθιση, αδιαφάνεια και το απροσδόκητο (Young 2007): Προσαρμοστικότητα (adaptability) ως προς τη δυνατότητα να εγκλιματίζεται σε ένα κοινό ηχητικό περιβάλλον, που γίνεται φανερό μέσα από τις αλλαγές της μουσικής συμπεριφοράς της. Η αυτεξουσιότητα (empowerment) συνεπάγεται κάποιον έλεγχο πάνω σε αποφάσεις που επηρεάζουν τη μελλοντική εμπειρία του. Εμβύθιση (immersion) συμβαίνει εάν υπάρχει μια οικειότητα, μια αμοιβαία κατανόηση μεταξύ των ερμηνευτών που προκύπτει από μια αναλυτική ακρόαση και παρατήρηση της παραγόμενης μουσικής. Η αδιαφάνεια (opacity) νοείται ως η αποφυγή υπεραπλουστευμένων σχέσεων αιτίου - αιτιατού, είτε αυτή προκύπτει μέσω άμεσου ελέγχου είτε μέσω ενός κοινού ακουστικού περιβάλλοντος. Το απροσδόκητο (unimaginable)· εάν οι υπολογιστές πρόκειται να επεκτείνουν και όχι απλά να αντιγράψουν την ανθρώπινη συμπεριφορά μέσω αυτόνομων και προσθετικών δυνατοτήτων, η μουσική τους δεν χρειάζεται να μοντελοποιεί καθιερωμένες μορφές ή πρακτικές (Young 2008). Στο σύστημα Neural Network Music (NN Music) επιχειρεί να εφαρμόσει κάποιες από αυτές τις ιδιότητες σε μια σειρά έργων για σόλο ερμηνευτή ακουστικού οργάνου και υπολογιστή, οι οποίοι αλληλεπιδρούν μέσω του ηχητικού περιβάλλοντος. Η αντιστοίχιση μεταξύ της ανάλυσης και της σύνθεσης του ήχου γίνεται μέσω ενός νευρωνικού δικτύου που προσαρμόζεται στα χαρακτηριστικά της εκτέλεσης εξάγοντας δεδομένα για χρήση στις μεταβλητές του συστήματος.

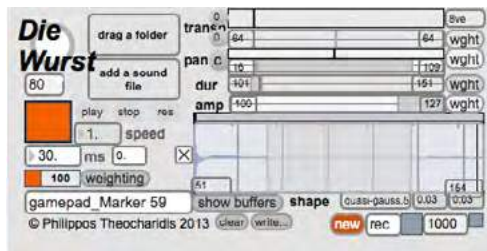
Το λογισμικό Kinetic Engine του Arne Eigenfeldt (2007, 2009) έχει χρησιμοποιηθεί ως πλατφόρμα για διάφορα έργα του ίδιου, στα οποία αυτόνομοι τεχνητοί πράκτορες προσομοιάζουν ένα σύνολο κρουστών (Eigenfeldt 2007) ή ελέγχουν ρομποτικά συστήματα τα οποία παίζουν ένα ακουστικό σετ διαφόρων ακουστικών κρουστών (Eigenfeldt και Karur 2008). Ο κάθε πράκτορας-μέλος του συνόλου αυτού αλληλεπιδρά με τους υπόλοιπους αυτοσχεδιάζοντας το μέρος του. Το σύνολο διευθύνεται από έναν επιπλέον αυτόνομο πράκτορα. Οι πράκτορες-‘εκτελεστές’ χρησιμοποιούν τεχνικές ασαφούς λογικής (fuzzy logic) για να αποφασίσουν πότε και τι θα παίξουν, ανάλογα με κάποιες βασικές κατευθύνσεις του πράκτορα-διευθυντή και την κατάσταση των υπολοίπων μελών του συνόλου, ενώ ο κάθε ένας έχει ενσωματωμένα χαρακτηριστικά ως προς την ταχύτητα απόκρισης και τη συνεργατικότητα με τους άλλους πράκτορες.

ΗΧΗΤΙΚΟ ΠΕΡΙΒΑΛΛΟΝ ΤΟΥ LAN GAME

Το ηχητικό περιβάλλον στο έργο δημιουργείται από δύο τεχνητούς πράκτορες συνδεδεμένους μεταξύ τους μέσω τοπικού δικτύου (Local Area Network), οι οποίοι παράγουν μικρο-ήχους που συνδυαζόμενοι σε ηχητικά σύννεφα μεταβαλλόμενης πυκνότητας δημιουργούν ηχητικούς όγκους στο χώρο.

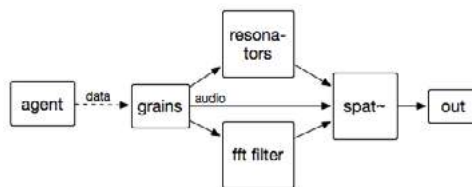
Ο κάθε ένας από αυτούς είναι συνδεδεμένος με μια μηχανή παραγωγής ηχητικών κόκκων (grains) διάρκειας λίγων χιλιοστών του δευτερολέπτου (~1-100ms), πηγές των οποίων αποτελούν δείγματα από ηχογραφήσεις πλήκτρων

χειριστηρίων παιχνιδιομηχανών (gamepads). Οι κόκκοι αυτοί έχουν μεταβλητή διάρκεια, περιβάλλουσα, τονικό ύψος, ένταση και χωροθέτηση. Οι μεταβλητές αυτές ορίζονται για κάθε κόκκο με στατιστικά σταθμισμένες στοχαστικές μεθόδους οι οποίες ελέγχονται από τους τεχνητούς πράκτορες.



Εικόνα 1: Γραφικό περιβάλλον της μηχανής κοκκώδους σύνθεσης die Wurst στο Max

Ο παραγόμενος ήχος από την διεργασία αυτή εισάγεται με παράλληλη συνδεσμολογία σε μια συστοιχία αντηχείων και ένα φίλτρο FFT⁵ που χωρίζει το ηχητικό φάσμα σε 512 περιοχές. Η συνεισφορά των δύο αυτών επεξεργαστών στον ήχο και διαφορετικές ρυθμίσεις των μεταβλητών τους αποθηκεύονται σε μνήμες και αυτές σε μια βιβλιοθήκη από όπου μπορεί ο κάθε τεχνητός πράκτορας να επιλέξει.



Εικόνα 2: Διαδρομή ηχητικού σήματος

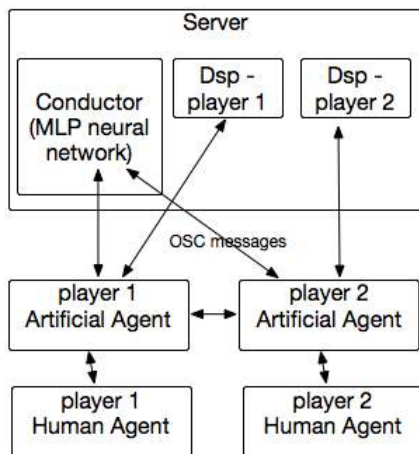
Η χωρική κατανομή των ήχων στο έργο είναι τέτοια ώστε να περιβάλλει το κοινό της συναυλίας και μπορεί να προσαρμοστεί σε διάφορες διατάξεις ηχείων (από 4 μέχρι 24 ή και περισσότερα) ανάλογα με την κατάσταση στον κάθε χώρο. Αυτό επιτυγχάνεται με την ενσωμάτωση στην εφαρμογή του λογισμικού spat~ του IRCAM (Jot και Warusfel 1995), το οποίο επίσης ελέγχεται από τους τεχνητούς πράκτορες.

⁵ Fast Fourier Transform.

ΕΠΙΣΚΟΠΗΣΗ ΤΟΥ ΣΥΣΤΗΜΑΤΟΣ

Η αρχιτεκτονική του συστήματος εκτέλεσης του έργου έχει ως εξής. Ένας υπολογιστής που είναι συνδεδεμένος στο ηχοσύστημα 'τρέχει' τον 'Server', ένα λογισμικό που περιέχει το 'Μαέστρο' και τις μηχανές ήχου που ελέγχουν οι δύο τεχνητοί πράκτορες. Αυτοί 'τρέχουν' σε αντίστοιχους υπολογιστές με τους οποίους αλληλεπιδρούν δύο άνθρωποι-πράκτορες καθισμένοι ανάμεσα στο κοινό και επικοινωνούν με τον Server ασύρματα μέσω wifi και του πρωτοκόλλου Open Sound Control ή OSC (Wright and Freed 1997). Το έργο ξεκινάει απομακρυσμένα χωρίς καμία παρουσία εμφανούς εκτελεστή στην κονσόλα ή τη σκηνή.

Μικροδομικά, η χρονική εξέλιξη και διάρθρωση του ηχητικού περιβάλλοντος του έργου εξαρτάται α) από τη διαρκή διαλεκτική σχέση των δύο τεχνητών πρακτόρων μεταξύ τους και β) από τη διαρκή διαλεκτική σχέση του καθενός ξεχωριστά με τον συζυγή άνθρωπο-πράκτορα (human agent) από τον οποίο λαμβάνουν δεδομένα μέσω μίας γραφικής διεπαφής. Μακροδομικά, 'προτείνεται' από το 'Μαέστρο' – έναν τρίτο αυτόνομο τεχνητό πράκτορα που κατά τη διάρκεια της συναυλίας θέτει στόχους τους οποίους προσπαθούν να υλοποιήσουν συλλογικά οι δύο πρώτοι τεχνητοί πράκτορες που στο εξής θα καλούμε 'ερμηνευτές'.



Εικόνα 3: Αρχιτεκτονική του συστήματος

Ο Μαέστρος

Ο μαέστρος θέτει γενικούς στόχους ως προς την πυκνότητα των παραγόμενων ηχητικών γεγονότων, τη χωρική τους κατανομή καθώς και ένα δείκτη προσαρμογής τους ως προς το συνολικό αποτέλεσμα. Επίσης επιστρέφει δεδομένα στους ερμηνευτές σχετικά με τις τρέχουσες τιμές των παραπάνω παραμέτρων.

Οι τρεις αυτοί στόχοι, σε κάθε ζωντανή εκτέλεση του έργου, ορίζονται και αναπροσαρμόζονται σε πραγματικό χρόνο με μεθόδους μηχανικής μάθησης, με βάση στοιχεία από προηγούμενες εκτελέσεις του έργου.

Κατά τις τέσσερις πρώτες δημόσιες εκτελέσεις του έργου ο μάεστρος ελεγχόταν άμεσα από το συνθέτη (Φ. Θεοχαρίδης) ώστε να τεθεί ένα πλαίσιο αναφοράς. Οι ακριβείς τιμές-στόχοι που δίδονταν κατά τη διάρκεια της κάθε εκτέλεσης καθώς και η συνολική διάρκειά της, καθορίζονταν διαισθητικά από το συνθέτη με οδηγό ένα πρόχειρο πλάνο για την εξέλιξη του έργου και ανάλογα με την ανταπόκριση από τους ερμηνευτές. Μπορεί λχ. σε κάποιο σημείο να μην κατάφερναν να φτάσουν μια ζητούμενη χωρική κατανομή ή πυκνότητα σε ένα χρονικό διάστημα που να αντανakλά τις αισθητικές προσδοκίες του και αυτό να είχε ως αποτέλεσμα να αποφασιστεί να τους δοθεί άλλος στόχος και έτσι να πάρει άλλη τροπή το έργο.

Οι μεταβλητές από αυτές τις ‘εκπαιδευτικές’ εκτελέσεις αντιστοιχισμένες σε πραγματικό χρόνο εκτέλεσης του κομματιού, καταγράφηκαν και κατόπιν τροφοδοτήθηκαν στον αλγόριθμο μηχανικής μάθησης - έναν αναγνωριστή πολλαπλών στρώσεων (multi layer perceptron - MLP)⁶ - του μάεστρου ο οποίος βασίζεται στο ml.lib (Bullock and Momeni 2015), ένα λογισμικό πακέτο εξωτερικών αντικειμένων για το Max. Οι επόμενες εκτελέσεις του έργου ελέγχονται εξ’ ολοκλήρου από το μάεστρο με τις εκάστοτε αποφάσεις του να βασίζονται σε αντίστοιχες παλαιότερων εκτελέσεων ενώ και οι ίδιες ανατροφοδοτούνται στον αλγόριθμο μηχανικής μάθησης.

Οι ερμηνευτές

Κατά τη διάρκεια του έργου, ο κάθε ερμηνευτής λαμβάνει από το μάεστρο α) τιμές για τους τρεις στόχους και β) την τρέχουσα τιμή τους. Κατόπιν υπολογίζει το βαθμό στον οποίο αυτοί έχουν επιτευχθεί (συνολικά και από τους δύο ερμηνευτές) χρησιμοποιώντας μια κλίμακα πέντε διαβαθμίσεων (very low, low, almost, high, very high). Ανάλογα με το πόσο μακριά ή κοντά στους στόχους είναι ο ίδιος, ρυθμίζει τη λειτουργία του συνεχώς μέχρι να επιτευχθεί μια κατάσταση ισορροπίας (η κατάσταση almost). Αυτή η ισορροπία φυσικά διαταράσσεται συχνά λόγω της παλινδρόμησης που δημιουργείται όταν αλλάζει το πρόσημο της προσέγγισης στο στόχο (low, high) λόγω του ότι το συνολικό αποτέλεσμα εξαρτάται από τη δράση και των δύο πρακτόρων.

Όταν λάβει ένα νέο ζευγάρι τιμών (στόχος, τρέχουσα τιμή), λχ. μια πυκνότητα ηχητικών γεγονότων μεγαλύτερη από την τρέχουσα, αυτό που θα κάνει ένας ερμηνευτής είναι κατ’ αρχήν να κοιτάξει αν τη συγκεκριμένη στιγμή ο ίδιος παίζει (αν παράγει ηχητικούς κόκκους). Αν όχι, μπορεί να παίξει· αν ναι,

⁶ Ο αλγόριθμος MLP είναι ένας αλγόριθμος εποπτευόμενης μηχανικής μάθησης που μπορεί να χρησιμοποιηθεί τόσο για ταξινόμηση όσο και για παλινδρόμηση οποιουδήποτε τύπου σήματος ν-διαστάσεων, ένα μοντέλο τεχνητού νευρωνικού δικτύου πρόσω τροφοδότησης (feedforward), που αντιστοιχίζει σύνολα δεδομένων εισόδου σε ένα σύνολο κατάλληλων εξόδων. (Gillian 2016) στο (Bullock και Momeni 2015).

μπορεί να αυξήσει το ρυθμό με τον οποίο το κάνει⁷. έχει δηλαδή αυτονομία (δεν τον χειρίζεται άμεσα κάποιος άλλος πράκτορας) και, αντιδρώντας σε εξωτερικά ερεθίσματα, αποφασίζει από μόνος του αν και πως θα δράσει (προδραστικότητα). Όταν παίζει ένας ερμηνευτής, χρησιμοποιεί δύο πιθανές γεννήτριες κόκκων, η μία είναι γραμμική (δηλαδή παράγει κόκκους με σταθερό ρυθμό), η άλλη βασίζεται σε μια γεννήτρια κίνησης Μπράουν από τη βιβλιοθήκη RTC lib (Essl 1992-2016). Οι παραπάνω επιλογές γίνονται στατιστικά, με συντελεστές στάθμισης που εξαρτώνται και από παράγοντες πέρα από το πόσο κοντά ή μακριά βρίσκεται από το στόχο· συγκεκριμένα:

- Από έναν πίνακα πιθανοτήτων που ελέγχεται από ένα προ-εκπαιδευμένο σύστημα γραμμικής απεικόνισης λίγων-σε-πολλές διαστάσεις, βασισμένο στο `nn.matmap` του IRCAM (Bevilacqua, Müller και Schnell 2005). (εσωτερική λειτουργία του τεχνητού πράκτορα)
- Από την αντίστοιχη κατάσταση του άλλου ερμηνευτή (κοινωνική σχέση με τον άλλο τεχνητό πράκτορα). Αν είναι ο άλλος κοντύτερα στο στόχο, μειώνεται η πιθανότητα αυτός να κάνει κάτι προς την επίτευξή του, αν είναι ο ίδιος, αυξάνεται - μια ενσωματωμένη λειτουργία 'ελάχιστου κόπου' θα λέγαμε.
- Από τη διάδρασή του με τον συζευγμένο άνθρωπο-πράκτορα (βλ. επόμενο μέρος) (αντιδρών, χαρακτηριστικά προσωπικότητας).

Η συμπεριφορά του κάθε ερμηνευτή όσον αφορά την χωρική κατανομή των ηχητικών συμβάντων λειτουργεί με ανάλογο τρόπο επεμβαίνοντας στο αζιμούθιο και την απόσταση από το κέντρο, μέσω ενός αλγόριθμου 'μεθυσμένου βαδίσματος'⁸ (drunken walk).

Ο δείκτης προσαρμογής λειτουργεί και αυτός με αντίστοιχο τρόπο επηρεάζοντας τον παραπάνω αλγόριθμο ως προς τη χωρική κατανομή των ηχητικών κόκκων καθώς και την επιλογή της γεννήτριας παραγωγής τους. Οι πιθανότητες να επιλεγεί η πιο ασταθής συμπεριφορά, καθώς και το μέγεθος (βήμα) των αλλαγών, αυξάνονται με χαμηλές τιμές του δείκτη προσαρμογής. Συνολικά, όσο χαμηλότερη είναι η τιμή, τόσο πιο ασταθείς είναι οι ερμηνευτές ως προς το στόχο που τους έχει τεθεί και τόσο ευκολότερα θα 'χάσουν την ισορροπία τους'.

Διάδραση ανθρώπινου – τεχνητού πράκτορα

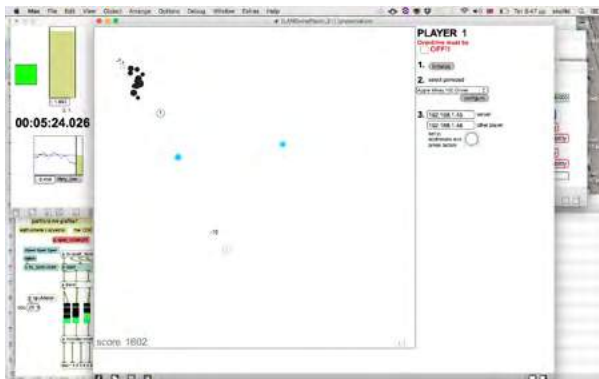
Ο τεχνητός πράκτορας, για κάθε κόκκο ήχου που παράγει, εμφανίζει και ένα αντίστοιχο γραφικό στοιχείο (μια μπίλια) στην οθόνη του συζυγή ανθρώπου-πράκτορα. Η θέση του στοιχείου αυτού αντιστοιχεί στη χωρική του θέση στο ηχητικό πεδίο γύρω από το κοινό, ενώ το μέγεθός/χρώμα του σε παραμέτρους της σύνθεσης του ήχου του. Ο άνθρωπος-πράκτορας κάθεται μέσα στο κοινό της συναυλίας με τον φορητό υπολογιστή στα πόδια του και μέσω χειριστήριου

⁷ Χρησιμοποιώντας έναν απλό αλγόριθμο πρόσθεσης.

⁸ Μια αλληλουχία τυχαίων βημάτων, όπως ένας μεθυσμένος – ένα βήμα μπρος, δύο δεξιά, ένα πίσω και πάει λέγοντας με αποτέλεσμα να διαγράφεται τελικά μια κάποια κατεύθυνση.

παιχνιδιών ‘χτυπάει’ τις μπίλιες που εμφανίζονται στην οθόνη του. Ανάλογα με το πόσο καλός είναι στο ‘παιχνίδι’ κερδίζει πόντους. Όσο μεγαλύτερο είναι το σκορ του σε σχέση με του άλλου παίκτη (ζευγάρι ανθρώπου – τεχνητού πράκτορα), τόσο πιο ‘αποφασιστικός’ γίνεται ο συζευγμένος τεχνητός πράκτορας ως προς τις ενέργειες που πρέπει να κάνει για να επιτευχθεί ο στόχος του, αυξάνει δηλαδή το βήμα με το οποίο προσεγγίζει την τιμή-στόχο. Έτσι ο άνθρωπος-πράκτορας ‘εκπαιδεύει’ τον μηχανικό του παρτενέρ σε πραγματικό χρόνο δίνοντάς του τα εφόδια ώστε να πάρει πρωταγωνιστικό ρόλο στο κομμάτι ή όχι.

Ο μέσος όρος των σκορ των δύο παικτών (ο οποίος μπορούμε να θεωρήσουμε ότι πρακτικά αντιστοιχεί στο πόσο έχει προχωρήσει χρονικά το κομμάτι) επηρεάζει τη λειτουργία των τεχνητών πρακτόρων – όσο μεγαλώνει τόσο περισσότερες πιθανότητες υπάρχουν να εμφανίσουν μπίλιες με νέα χρώματα στην οθόνη. Αν ο άνθρωπος-πράκτορας τις ‘χτυπήσει’, ο τεχνητός πράκτορας ενεργοποιεί πολυπλοκότερες ηχητικές δομές, αυξάνοντας παράλληλα τους πόντους του παίκτη. Με τον τρόπο αυτό δημιουργείται μια αμφίδρομη σχέση ανθρώπου – μηχανής ενώ ταυτόχρονα μπορεί και ο άνθρωπος-πράκτορας να επέμβει αισθητικά στο ηχητικό περιβάλλον του έργου. Αυτό γίνεται και με τη ‘σύγκρουση’ (την κατάληψη του ίδιου χώρου) των δύο ανθρώπων-πρακτόρων η οποία παράγει επιπλέον ηχητικά συμβάντα.



Εικόνα 4: Η διεπαφή ανθρώπου-πράκτορα με τον συζευγμένο τεχνητό πράκτορα (μπροστά παράθυρο) - στο υπόβαθρο διακρίνεται μέρος του γραφικού περιβάλλοντος του λογισμικού του Μασέστρου

ΣΥΜΠΕΡΑΣΜΑΤΑ – ΠΡΟΟΠΤΙΚΕΣ ΕΞΕΛΙΞΗΣ

Στην παρούσα εργασία παρουσιάστηκε η θεωρητική σύλληψη και η εφαρμογή των ιδεών που συνθέτουν το έργο LAN Game. Σχετικά με το αρχικό ερώτημα που τέθηκε “τι είναι ζωντανό σε ένα έργο ‘ζωντανής’ ηλεκτροακουστικής μουσικής”, το έργο επιδιώκει περισσότερο να τεθεί αυτό στο κοινό κατά την ακρόαση, παρά να προτείνει το ίδιο μια απάντηση [ως προς αυτό υπάρχουν διάφορες απόψεις συχνά αντικρουόμενες μεταξύ τους, βλ. πχ. (Emmerson

1994), (Croft 2007) ή (d'Escrivàn 2006)], προβάλλοντας την αβεβαιότητα ως προς το ερώτημα “από που προκύπτει το κομμάτι που ακούγεται;” μιας και δεν φαίνεται πουθενά κάποιος εκτελεστής όπως συνήθως συμβαίνει σε συναυλίες έργων ηλεκτροακουστικής μουσικής.

Επιχειρείται παρόλα αυτά να αναπτυχθεί ένα ψήγμα ‘ζωντανότητας’ στη συμπεριφορά της μηχανής μέσα από τη σχέση μεταξύ των δύο τεχνητών πρακτόρων μεταξύ τους (εσωτερικά), και με τους ανθρώπους-πράκτορες εξωτερικά, στην κατεύθυνση ενός γενετικού αλγόριθμου που λαμβάνει υπόψιν στοιχεία ενός γνωστικού μοντέλου λειτουργιών του αυτοσχεδιασμού (όπως κοινωνικότητα, δημιουργικότητα, αντίδραση σε εξωτερικά ερεθίσματα κτλ.), βλ. επίσης και στο (Dean 2009, 141) ο οποίος μεταξύ άλλων παρατηρεί ότι αν και ‘η κατανόηση μας των γνωστικών διαδικασιών [που αναπτύσσονται] κατά τη διάρκεια του αυτοσχεδιασμού είναι ακόμη πιο περιορισμένη από ότι αυτή των αντίστοιχων διαδικασιών [που αναπτύσσονται] κατά την ακρόαση μουσικής, [...] η καθοδήγηση (leadership) και η κοινοτικότητα (communality) (συναφής απόκριση) είναι σημαντικά στοιχεία στον ομαδικό αυτοσχεδιασμό’. Από το μοντέλο μας λείπουν φυσικά σημαντικές δυνατότητες όπως το να ‘ακούει’ και να αναλύει χαρακτηριστικά του παραγόμενου ήχου αναπροσαρμόζοντας έτσι τις αντιδράσεις του. Αυτό μπορεί να επιτευχθεί με την εισαγωγή τέτοιων μεθόδων μηχανικής ακρόασης. Στο μάεστρο τέτοια δεδομένα θα ήταν χρήσιμα για τροφοδότηση στο μηχανισμό μηχανικής μάθησης των παλαιότερων εκτελέσεων δίνοντάς του έτσι τη δυνατότητα να συσχετίσει τις κινήσεις του με το ακουστικό τους αποτέλεσμα. Στους ερμηνευτές, η προσθήκη αντίστοιχων τεχνικών θα αποτελέσει ένα ακόμα βήμα προς τη δημιουργία ενός πληρέστερου μοντέλου του ανθρώπου-αυτοσχεδιαστή.

Ως προς την παρούσα εσωτερική λειτουργία των τεχνητών πρακτόρων στους ερμηνευτές, η ανταπόκρισή τους γενικά κρίνεται σχετικά αργή (χωρίς να είναι η ίδια όμως πάντα) ως προς τις απότομες αλλαγές στις ‘διαθέσεις’ του μάεστρου. Αυτή η υστέρηση, αν και είναι μέρος του σχεδιασμού του συστήματος, θα μπορούσε να βελτιωθεί αν συνδεθεί με τα δεδομένα από τη διάδραση με τους ανθρώπους-πράκτορες, πράγμα που θα μπορούσε να είναι χρήσιμο στην εφαρμογή του βασικού αυτού μηχανισμού και σε άλλα έργα με διαφορετική αισθητική προσέγγιση που θα προκύψουν στο μέλλον.

BIBΛΙΟΓΡΑΦΙΑ

- Bevilacqua, F., R. Müller και N. Schnell. 2005. «MnM: a Max/MSP mapping toolbox.» *Proceedings of the 2005 International Conference on New Interfaces for Musical Expression (NIME05)*. Vancouver, BC, Canada: NIME. 85-88.
- Bullock, Jamie και Ali Momeni. 2015. «ml.lib: Robust, Cross-platform, Open-source Machine Learning for Max and Pure Data.» *Proceedings of the 2015 International Conference on New Interfaces for Musical Expression (NIME15)*. Baton Rouge: Louisiana State University.

- Croft, John. 2007. «Theses on liveness.» *Organised Sound* (Cambridge University Press) 12 (1): 59–66.
- d'Esquivàn, J. 2006. «To sing the body electric: instruments and effort in the performance of electronic music.» *Contemporary Music Review* 25 (1/2): 183–191.
- Dean, Roger T. 2009. «Envisaging Improvisation in Future Computer Music.» Στο *The Oxford Handbook of Computer Music*, μοντάζ: Roger T. Dean, 133-147. New York: Oxford University Press.
- Di Scipio, Agostino. 2003. «'Sound is the interface': from interactive to ecosystemic signal processing.» *Organised Sound* (Cambridge University Press) 8 (3): 269–277.
- Eigenfeldt, Arne. 2007. «Drum Circle: Intelligent Agents in MAX/MSP.» *ICMC 2007 proceedings*. Copenhagen: ICMA. 9-12.
- . 2009. «The Evolution of Evolutionary Software: Intelligent Rhythm Generation in Kinetic Engine.» *Applications of Evolutionary Computing*. Tublingen. 498-507.
- Eigenfeldt, Arne και Ajay Kapur. 2008. «An Agent-based System for Robotic Musical Performance.» *NIME08 proceedings*. Genova: NIME.
- Emmerson, Simon. 1994. «'Live' versus 'real-time'.» *Contemporary Music Review* 10 (2): 95-101.
- Essl, Karlheinz. 1992-2016. *RTC-lib - Real Time Composition Library*. <http://www.essl.at/works/rtc.html>.
- Gillian, Nick. 2016. *Gesture Recognition Toolkit (GRT)*. 21 4. Πρόσβαση 9 26, 2017. <http://www.nickgillian.com/software/grt>.
- Hsu, William. 2007. «Design Issues in Interaction Modeling for Free Improvisation.» *Proceedings of the 2007 Conference on New Interfaces for Musical Expression (NIME07)*, . New York, NY. 367-370.
- Jot, Jean-Marc και Olivier Warusfel. 1995. «Spat~: A Spatial Processor for Musicians and Sound Engineers.» *CIARM: International Conference on Acoustics and Musical Research*. Ferrara, Italy: CIARM.
- Lewis, G. 1999. «Interacting with latter-day musical automata. Aesthetics of Live Electronic Music.» *Contemporary Music Review* 18 (3).
- Van Nort, Doug, Jonas Braasch και Pauline Oliveros. 2009. «A System For Musical Improvisation Combining Sonic Gesture Recognition And Genetic Algorithms.» *Proceedings of the SMC 2009 - 6th Sound and Music Computing Conference*. Porto. 131-136.
- Woolridge, M. και N. R. Jennings. 1995. «Intelligent agents: theory and practice.» *Knowledge Engineering Review* (2): 115-152.
- Wright, M., και A. Freed. 1997. «Open Sound Control: A New Protocol for Communicating with Sound Synthesizers.» *International Computer Music Conference*. Thessaloniki: . International Computer Music Association. 101-104.
- Yee-King, Matthew John. 2007. «An Automated Music Improviser Using a Genetic Algorithm Driven Synthesis Engine.» *EvoWorkshops 2007*, 567–576.

- Young, M. 2007. «Aur(or)a: Attributes of a Live Algorithm.» *Electroacoustic Music Studies Conference*. Leicester.
- _____. 2008. «NN Music: Improvising with a Living Computer (extended version) ..» Μοντάζ: R. et al (eds) Kronland-Martinet. *Computer Music Modelling and Retrieval: Sense of Sounds. Lecture Notes in Computer Science 4969*. Springer-Verlag. 337-350.

ABOUT THE AUTHORS

Philippos Theocharidis studied Electronic music and Electronics (BSc) at Keele University, and Music Technology (MA) at Newcastle-Upon-Tyne, UK, currently finishing his PhD at the Ionian University in Corfu, Greece. He has taught Electronic Music, Sound Recording, and Computer Interaction for Musical Applications at the Universities of Macedonia, and the Ionian, and the Technological Institute of the Ionian Islands. As a recording and live sound engineer he has served as lead technician for numerous electroacoustic music concerts utilizing multi-speaker arrangements for sound diffusion. His compositional and improvisation work, mostly interactive electronic music, has been performed in various festivals including the Electroacoustic Music Days in Corfu (2003, 2015), Rethymno (2005, 2008, 2014) and Kefalonia (2009, 2016), Echopolis (2013), Salford Sonic Fusion Festival (2013) UK, Electric Nights (2016), Across the Great Divide, Human – Machine Improvisation, Onassis Cultural Center (2012), di.p.art (2012), SMC (2007).

Website: <https://philippostheocharidis.wordpress.com>

Andreas Mniestris is Associate Professor of Electronic Music Composition at the Music Department of Ionian University and Director of the Electroacoustic Music Research Laboratory [EPHMEE]. His work focuses on fixed media composition. Other interests include soundscape research, radio art and music production. He is a founding member of the Hellenic Association of Electroacoustic Music Composers and the Hellenic Acoustic Ecology Association.

DANIEL PEREZ-GRANDE

Universidad Carlos III de Madrid, Spain

DAVID MORANTE

Universidad Carlos III de Madrid, Spain

MIGUEL OLIVEROS

Universidad Complutense de Madrid, Spain

CELIA TALAMANTE

Universidad Alfonso X el Sabio, Spain

BLACK SONIC HOLE:

An immersive and interactive sonic soundscape based on Schwarzschild's Geodesics for Black Holes. Humanizing the scale of complex singular physical phenomena in the post-digital age

ABSTRACT

In this manuscript we describe our ongoing efforts to create an electroacoustic sonic object within an interactive/immersive installation based on the first non-trivial solution for Einstein's field equations: Karl Schwarzschild's singularities, or, as they are better known today, Black Holes.

We propose a direct analogy between the simplified geodesics for a light particle in the neighborhood of a static Black Hole unto the limits of the event horizon -which result in the known solutions for gravitational lensing- and the viewer's own capacity to interact with sound. Our proposed installation generates a sonic soundscape in which the viewer experiences the concepts of spatial curvature and time dilation produced by gravity through analogous distortion to sounds -these may be either refer to harmonic frequencies carefully chosen for the experience or the viewer's own voice- which comprise a reactive sonic object.

The system we have designed encompasses an open software which generates the trajectories and frequency shifts which will be applied to the sonic object, written as a MATLAB script, and a patch in Pure Data/Gem which interprets said information and allows for real-time interaction with the listener through voice, additional analogue devices and effects such as synthesizers and pedals. The software is custom built to the hardware installation itself. It was first developed as a four-channel architecture, allowing for a two-dimensional representation of the position of the sonic object within the soundscape,

which moves following the curved space geodesic. We are currently further developing our system so that we may apply it to a sound array comprised of many elements, permitting a higher spatial and sonic resolution. We are also shifting the system architecture to a voice of god (v.o.g.) type array, where the sound elements are above the viewer, in order to create a more immersive experience. Recent developments are with eight channels, which add a solid sonic dimension to the system spatialisation during real time performance, and eventually will lead to a 16.2 sonic environment.

Through our work we aim to transcend the boundaries separating the fields of art and science, in relation to the concepts of the singularity, the forbidden and the taboo. Indeed, from a physical perspective, one would be pressed to find a better example of forbidden places in nature than Black Holes and their event horizons. The infinitely curved space around these objects could have also been considered taboo within the scientific community in the years prior to their actual discovery; with Einstein himself dismissing them as a mathematical simplification whose implications of a singularity could not carry over to the natural world. The poetics of such physical phenomena in the post digital age are evident through the analogy of the crossing, considering the event-horizon of the Black Hole as a threshold, a door into a point of no return where the commodified theoretical views which have dominated Western thinking and aesthetics for millennia are trapped into the edge of the immense, finding no validity in the current post-human present. This is both the liminal and the taboo: when scientists and artists are not currently fully capable of understanding what lies beyond the event horizon, we choose to leave it to the spectator, as a user of the sonic environment, to draw his or her own conclusions based on the experience, and take the leap. . .

KEYWORDS

Electroacoustic, Soundscape, Schwarzschild Geodesics, Immersive, Transcendence

INTRODUCTION

Between the 28th of July 1914 until the 11th of November 1918 World War I took place; on the one side, the Allied Powers, among its members the Russian Empire, which will later become Soviet Russia after the October Revolution; on the other the Central Powers with Germany as one of its key members.

During these war years, the arts and the sciences did not collapse in effort or production if anything the opposite. From 1915 onward, Russian geometric abstract art pioneer Kazimir Malevich delighted the world with a series of iconic paintings, among one of them was the Suprematists oil on canvas: White on white (1918), created a year on from the October Revolution. Parallel to this work, which transcended figurative composition, also in 1915, while serving

at the Russian Front during World War I, German soldier and physicist Karl Schwarzschild obtained an exact and elegant solution to Einstein's field equations, which describe the interaction of space-time with mass and energy.

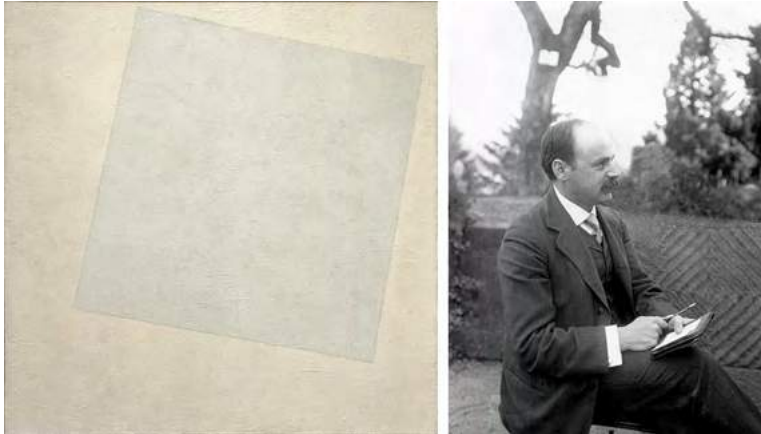


Image 1: White on White, Malevich, 1918 (left); Karl Schwarzschild (right).
(unknown source)

These facts speak of a fascinating dichotomy in art and science during the Great War years: on the one hand, the Russian School, with its abstract and transgressive geometric pictorial thesis, drawn by Malevich, where the art can exist at the frontier of the abstract. On the other hand, the scientific antithesis of German academic Karl Schwarzschild whose solution in general relativity was praised by Einstein, but also considered taboo, due to the conceived notion that singularities could not carry over into the physical world and should be confined to the abstract limits of the mathematical. Both, explored simple solutions to complex theoretical paradigms.

This implausible historical convergence in theme and form, allows us to form a thesis around the abstract, the liminal and the frontier. Half a century before, Timothy O'Sullivan (Image 2) photographed a different frontier... that of the newly-formed United States of America, explored and surveyed by an increasing number of military and scientific expeditions financed by the government. "Thanks to photography, Americans were able to view and even buy, for the first time, images of what would then become protected landmarks such as the Yosemite National Park or Niagara Falls", as Dr. João Florêncio explains in his lectures at Exeter University; we could claim that this is the first time in which a visual art, based on technology, was used to bring to the general public a representation of the liminal.



Image 2: Timothy O'Sullivan - Sand Dunes,
Carson Desert, Nevada, 1867.
artsandculture.google.com

Drawing inspiration from O'Sullivan, we become explorers of physical phenomena inaccessible to the human senses, unless aided by a technological medium. Our particular field of exploration are complex singular physical phenomena which we seek to humanize in scale @ our current visually- saturated post-digital era.

Our first project (our singularity) is called Black Sonic Hole: an electroacoustic interactive and immersive sonic object and soundscape, based on Schwarzschild's Geodesics. The project aims to present the user with a view of the event horizon and its surroundings: the limit which divides the infinitely curved space around a black hole and the rest of space and time, a region of no return at the edge of the immense, which challenges previous notions of the liminal and the abstract.

SCHWARZSCHILD'S GEODESICS, IMPLEMENTATION AND THE LIGHT PARTICLE ANALOGY.

Karl Schwarzschild was the first to obtain a non-trivial solution to Einstein's field equations, leading to the description of previously unseen and seemingly implausible phenomena such as the bending of light by gravitational fields; sadly, he died the year following this feat. His legacy, however, spoke further of the intricacies of massive bodies in space, hinting at the existence of singularities, where the predicted curvature of space and time broke down into the limits of the infinite.

The year 2016 marked the 100th anniversary of Schwarzschild's death, in the century that has passed, his "singularities" gained names (Black Holes and Event Horizons), opened up a whole area of Astronomy and Astrophysics and were, finally, discovered by the scientific community, starting with Cygnus X-1 in 1971, which was followed by a large list of confirmed candidates. Lastly, Black Holes also made their way into the collective consciousness through pop-culture and art; perhaps, in its most recent example, through the motion picture "Interstellar", which produced its own intersection of science and art by depicting the black hole Gargantua¹ and served as a natural inspiration for this project.

The physics of black holes today are subject to much speculation and scientific scrutiny, and the advancements made in the field are, at this very moment, culminating in the first possible imaging of an event horizon (that of Sagittarius A*, the black hole at the center of the Milky Way), thanks to the Event Horizon Telescope project. However, as a means of homage to Karl Schwarzschild, we decided to base this project around his original solution for the field equations; in particular to that for gravitational lensing of null non-rest-mass particles (photons). This was also a convenient approach since Schwarzschild's solution is analytical, from the mathematical perspective, which reduces the complexity in its understanding and integration; indeed, Einstein himself wrote to Schwarzschild: "I have read your paper with the utmost interest. I had not expected that one could formulate the exact solution of the problem in such a simple way. I liked very much your mathematical treatment of the subject"².

This surprisingly simple and elegant formulation of Schwarzschild's solution is usually described with the following expression:

$$c^2 d\tau^2 = \left(1 - \frac{r_s}{r}\right) c^2 dt^2 - \left(1 - \frac{r_s}{r}\right)^{-1} dr^2 - r^2(d\theta^2 + \sin^2 \theta d\varphi^2) \quad (1)$$

This equation is used to determine the geodesics of the gravitational field, which in general relativity describe both the spatial and time evolution of a particle neighbouring a massive object, i.e. the geometry of its trajectory in the curved spacetime.

Here τ is known as the proper time, as would be measured by an observer moving along with the particle P, as shown in Image 3. On the other hand, t is the time measured by a stationary observer sufficiently far away from the massive central object (in our case, the black hole); for the analogy which we are attempting to build, the observer is the installation viewer. The spatial location of the particle is determined with respect to a spherical reference frame centered in the Black Hole, as depicted in Image 3, where r is the radial coordinate, and θ and φ are known, respectively, as the colatitude and the longitude.

¹ James, Oliver, Eugénie von Tunzelmann, Paul Franklin and Kip S. Thorne. "Gravitational lensing by spinning black holes in astrophysics, and in the movie Interstellar". *Classical and Quantum Gravity*, 32. 2015.

² Eisenstaedt. "The Early Interpretation of the Schwarzschild Solution". In D. Howard and J. Stachel. "Einstein and the History of General Relativity: Einstein Studies", Vol. 1, 1989.

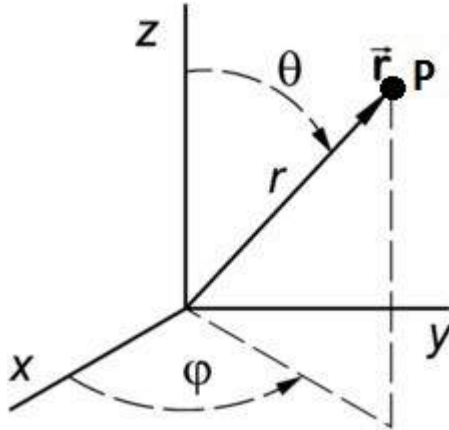


Image 3: Spherical Reference Frame.
spaceinteractionalexperience.org

Last but not least, the constant c is the speed of light, which is the universal speed limit, and the parameter r_s , which represents the Schwarzschild radius of the massive body as a function of its mass, M , and the gravitational constant, G , by:

$$r_s = \frac{2GM}{c^2} \tag{2}$$

the value of r_s is linked to the event horizon of a Black Hole. Any object with a physical radius smaller than its Schwarzschild radius will develop an event horizon surrounding it, at which the gravitational pull is so great that even light cannot escape. In the particular case of a photon, a couple of simplifications are allowed, considering that photons do not carry mass when they are in movement and that their proper time actually remains constant, as deduced from Einstein's relativity. This implies, in mathematical terms, that we may resolve Equation (1) as:

$$d\tau = 0 \rightarrow d\varphi = \frac{dr}{r\sqrt{r^2/b^2 - 1 + r_s/r}} \tag{3}$$

Note that, the colatitude, θ , has not been included due to the spherical symmetry of spacetime, so that the geodesics are always contained in a plane. From the previous equation, it is also inferred that the path of light is not a straight line, as one might expect, but a curved trajectory. This deflection effect is known as the gravitational lensing effect and is observed as a visual distortion.

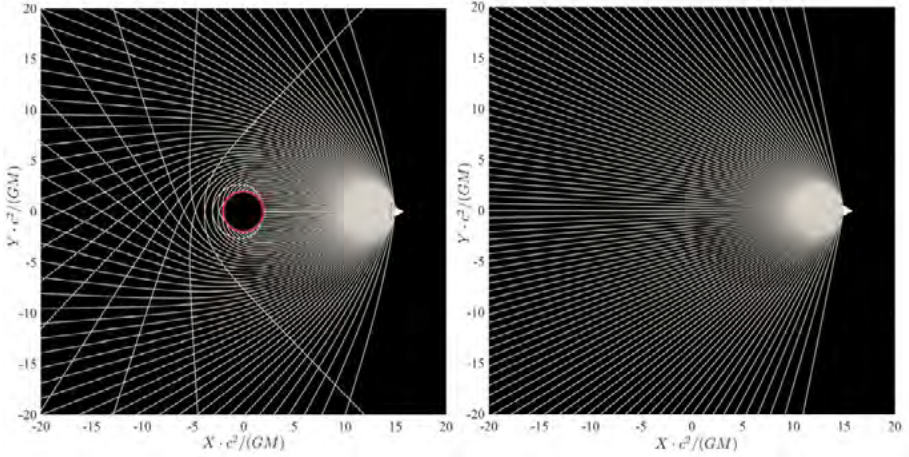


Image 4: Light source and light rays in the presence of the event horizon (left); Light source and light rays in vacuum (right). spaceinteractionalexperience.org

In addition to the gravitational lensing, another effect transpires if a light source traverses the space near a black hole: since the proper time remains constant for a photon, but an external observer records different times depending on the distance to the black hole, there is a mismatch between the frequency associated to a photon when it is emitted and that same frequency when the photon reaches the observer. This change in frequency is represented by:

$$\lambda_0 = \frac{\lambda_e}{\sqrt{1 - r_s/R_e}} \quad (4)$$

where λ_0 is the recorded frequency, λ_e is the frequency at emission and R_e is the radial coordinate at emission. Equation (4) represents the gravitational doppler effect (also known as gravitational redshift).

Image 4 shows the trajectories of photons being emitted by a light source at an arbitrary distance from the event horizon and in vacuum without the black hole present.

Trajectories in the previous plots have been computed by integrating Equation (1) with the MATLAB programming language and the Runge-Kutta 7 integration scheme for different values of the parameter b . This parameter is a constant over the photon trajectory called the impact parameter and it represents the initial trajectory of the photon sufficiently far away from the Black Hole. There exists a critical value of $b_c = 3 \sqrt{3}r_s/2$ when a photon will circle the massive body at what is known as the photon sphere. The exact location of the photon sphere is at a distance $r_p = 1.5r_s$.

The magnitude of the impact parameter univocally determines how the trajectory would be modified as it gets closer to the Black Hole (Image 5):

- If $b = b_c$ the photon will orbit indefinitely the Black Hole at the photon sphere.
- If $b > b_c$ the photon will spiral around the Black Hole near the photon sphere and then spiral out, escaping the Event Horizon.
- If $b < b_c$ the photon will spiral around the photon sphere and then spiral in, eventually falling into the Black Hole.

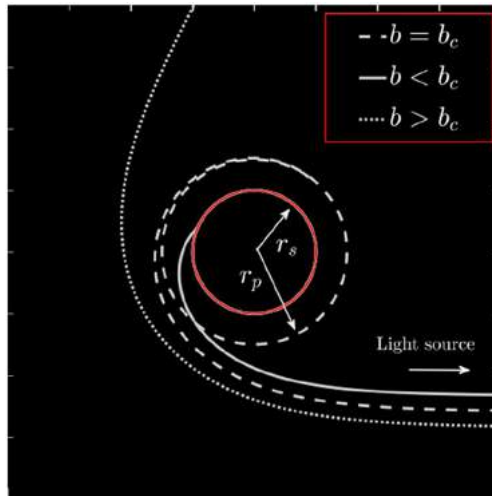


Image 5: Influence of impact parameter, b , on photon trajectory.
spaceinteractionalexperience.org

The gravitational lensing and doppler effects are both used to construct what we call the light particle analogy: the sonic object in our installation (of which we will speak more about in the next section) is constructed by taking a particular sound and making it traverse the installation following a particular photonic trajectory, as dictated by the geodesics of gravitational lensing; the sound is then distorted in the frequency spectrum by applying the change in frequency related to the gravitational doppler effect and the particular position of the sonic object in the installation space.

While this is not exactly coherent from the physical perspective, since the lensing effect applies to a photon which moves around the black hole, and the doppler effect applies to a photon which is emitted in the vicinity of the black hole and then reaches the spectator, these two effects permit the level of play and interaction within the installation which we wish to expose the viewer to. The particular way under which we choose the impact parameter of one of our light particles, for a particular sound, also allows for a deep lever of customization.

INSTALLATION DESCRIPTION AND EXPERIENCE, THE USER AS PERFORMER AND THE PERFORMER AS USER.

A collective, human-scale, experience of the immense physical reality (the distances, times, speeds and forces involved) of what it means for light to travel in the vicinity of a Black Hole implies that the way in which we represent Schwarzschild's solution must, by necessity, be both immersive and interactive. We use sound as a tool for immersion, as it is able to create a surrounding experience for the user and, at the same time, produce the sonic object by which the understanding of such complex phenomena may be achieved: the light particle analogy. In addition, we choose to transform the user into a performer, which may interact with the installation in a similar way to how one may interact with a musical instrument; indeed, the aim of this project is to produce a live electroacoustic-audiovisual open source instrument.

Regarding the user, when the source of the sound is immediately recognizable (e.g., the user's own voice) then, his or her own implication with the system is established naturally and gives way to a duality of understanding the meaning and consequences of time/space curvature, while simultaneously becoming the centerpiece of the installation through the act of performance-performing. The users of the installation then become cyborg protagonists, capable of augmenting their own limits of perception through the use of an ever-expanding cascade of technologies and world knowledge.

The concepts treated here have been translated into a practical installation that is capable of generating a surrounding sonic soundscape. The electroacoustic sonic object, which is addressed further in this section, accepts any type of sound and, through the light particle analogy described in Section 2, is distorted and made to travel through the installation.

The traveling effect is achieved in a similar way to current Dolby Atmos technology, but for the two-dimensional physical space to which the Geodesics which we have currently derived are tied to. A number of independent audio channels and speakers are enabled in the installation in an effort to provide enough spatial resolution for said trajectories to be interpreted by the user; we have currently configured two types of architectures for real-time localization of the sonic object:

- 4-channel array + Microphone: in its simplest version, the installation is comprised of a four-channel output architecture (where each channel may be linked to multiple speakers, for a greater sound presence) and a single microphone for input. The trajectories used are "hard coded" for a particular position of the microphone in the installation; when the installation is active, the trajectories are cycled through and launched randomly. Image 6 shows this installation architecture schematically:

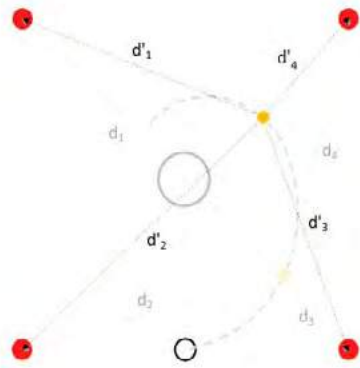


Image 6: 4-channel array + Microphone - Technical rider (left); Positioning of sonic object within the 4-channel array, grey circle represents the event horizon (right). spaceinteractionalexperience.org

The positioning of the sonic object is represented by the installation through a real-time adjustment of the volume of each of the channels based on inverse-distance weighting from each of the channel outputs to the position of the object at a given time. The particular formula used is given in Equation (5):

$$d\tau = 0 \rightarrow d\varphi = \frac{dr}{r\sqrt{r^2/b^2 - 1 + r_s/r}} \quad (3)$$

where V_j is the volume of a particular channel and p is the coefficient of the weighting method, which allows us to favor larger relative volumes for closer distances; the volume is rescaled with the maximum value for each of the channels, so that the volume setting goes from 0 to 1 on each output. The 4-channel architecture provides a good starting point for the project and was presented at Google Campus Madrid in late 2016, as seen in Image 7. The main drawback of this setup is the low spatial resolution provided by the four channels, in regards to the trajectories being represented; this is specially noted when the sonic object traverses the center of the installation, close to the virtual position of the black hole.

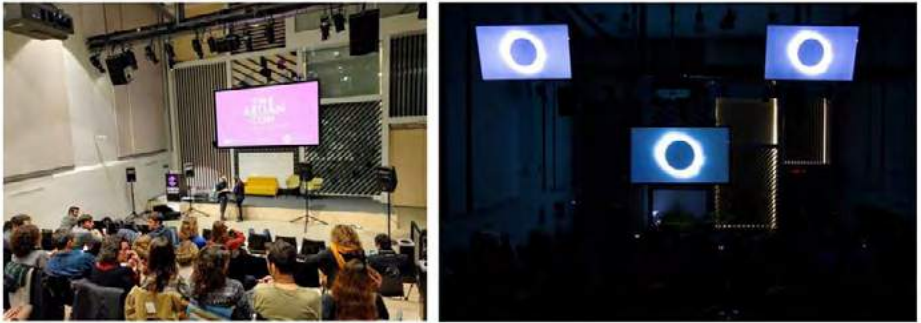


Image 7: Black Sonic Hole installation at Google Campus Madrid, December 2016 (image on the right shows an experimental visual aid used for the particular event). spaceinteractionalexperience.org

- N-channel array + N-Microphones: in order to increase the spatial and sonic accuracy of the installation, a larger number of channels may be added. Image 8 shows a 16-channel array configuration; the positioning of the sonic object in its trajectory maintains the logic of the 4-channel configuration: only four speakers operate at any given time and the array is divided into sub-grids that are active only when the object falls within them, the volume adjustment in each sub-grid is done as per Equation (5).

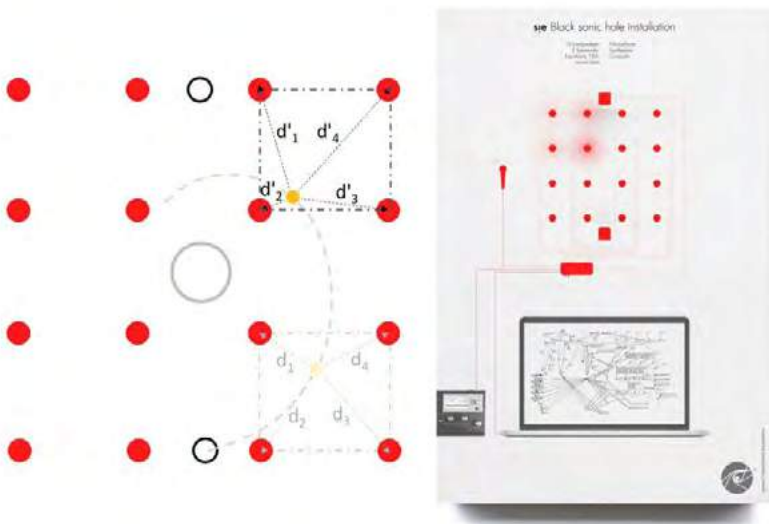


Image 8: Positioning of sonic object within sub-grids of the 16-channel array, grey circle represents the event horizon (left); 16-channel array + 2 Microphones - Technical rider (right). spaceinteractionalexperience.org

The number of channels can be pushed to any number that is desired, given that the technical means are available, at the cost of increasing technical complexity for the installation. The use of such a large number of sound elements requires the installation to be shifted into a voice of god (v.o.g., term used by the Sound design technology) configuration, where the speakers reside above the users, so that the installation space may be occupied by them; the configuration of the system must be optimized in regards to the density of sound elements and the verticality of the available space for the installation, as proposed by Bob McCarty. In addition, more than one microphone may be added into the installation, so that multiple perspectives of the virtual space around the black hole may be represented and so that multiple users may interact with the installation.

This new configuration, both from the perspective of a larger number of channels and a the v.o.g. positioning, is expected to increase the immersion of the user into the immensity of the experience; Image 9 represents a schematic view of what the installation space may look like for this setup.



Image 9: Installation space for an N-channel array v.o.g. configuration. spaceinteracionalexperience.org

At the present moment, we are experimenting with an 8-channel output array and a single microphone, due to technical limitations.

In addition to the traveling effect, the sonic object experiences a time-dilation effect which, in the spirit of Einstein's description of space-time, adds

an additional dimension to the installation and an additional layer of immersion and understanding for the user, making it a truly 3D experience. As part of our ongoing development, we are currently experimenting with various options for introducing this distortion to the sonic object, in ways that maximize the psychoacoustic response of the user:

- Phasing effect with frequency modulation: the initial distortion we experimented with for the sonic object consisted of a simple “phaser” effect achieved by applying a frequency oscillator onto the input sound (in this case, the user’s voice); the oscillator is modulated from a starting given harmonic frequency through the observer-to-proper time ratio (as obtained in Section 2) resulting in a given frequency at a given moment that is the product of the starting frequency and the time ratio. This phasing effect adds a “synthetic” tint to the voice and is similar to the way “robotic” voices have been generated since the 1950s; this effect is interesting and gathered the attention of the users during our trials but lacks a certain level of depth which is sought after in the installation.

- Time-scaling and Pitch modification: a more advanced method of distorting the sound input would be to subject it to a combination of time-stretching (changing its duration without affecting its pitch) and-pitch shifting (changing its pitch without affecting the duration). Various methods such as Phase vocoder or Sinusoidal spectral modeling are used for many types of signals; however, for voice related uses the Pitch Synchronous Overlap and Add method (PSOLA) is typically preferred, and is also less processor-intensive, being favored for real-time applications. We are currently experimenting with open-source PSOLA Pure Data patches to find the appropriate effect that we wish to convey for the installation.

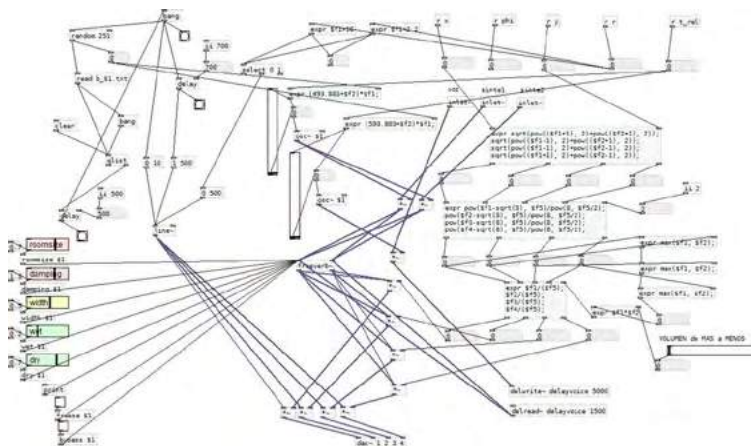


Image 10: Pure Data patch for 4-channel array & Microphone configuration and time-dilation effect based on Phasing with frequency modulation.
spaceinteractionalexperience.org

The Pure Data patch we have currently built for the installation may be seen in Image10; it is custom built for a 4-channel array and single microphone configuration and uses the phasing effect for the time-dilation. Future patches will be built for N-channels and multiple inputs and will make use of the PSOLA technique for the distortion effect.

The main medium through which we have decided to convey the effects of gravity in the vicinity of the singularity is the human voice; in particular, the user's voice. This is the sound which comprises the sonic object: a way of gathering the users' attention while establishing an element of play in being able to follow a voice through the installation or in listening to its distortion, and a bold testament to our capability for perceiving, understanding and interpreting the universe around us; indeed, this brings together two very different scales: the cosmic and the human.

The voice travels and is distorted through the installation, either getting flung out in different directions, due to the gravitational lensing analogy, or irrevocably falling onto the event horizon. As the trajectories lead the sonic object closer to the black hole (which is located in a virtual manner at the center of the installation) the ratio of proper time to spectator's time becomes ever larger (as shown in Section 2), which is recognized as a change in pitch, in either of the distortion methods used, towards the bass range. Any trajectory reaching the event horizon ceases to be carried by the installation, signaling the point of no-return around the singularity, the physics past which fall out of the scope of this project (and, possibly, of the general understanding of theoretical physics). It is worth noting that we have chosen to not represent the event horizon, as homage to our current techniques for detection of black holes, which are indirect in nature.

Finally, it is worth noting that an additional performative element is incorporated to the installation as a part of the sonic soundscape, in line with the philosophy of the performer as user: what we have named the photon sphere, in reference to the trapped disks of photons which surround massive bodies, such as black holes (see Section 2) The photon sphere is an amalgam of various sound sources such as kick-drum synthesizers and analogue effects, such as a flanger, which surround the spectator in a circular manner, producing a real-time, reactive and random environment which combines with the sonic object.

The rationale behind the addition of this element is founded on psychoacoustics and user experience: bass-drums have low frequency ranges (60-80 Hz) which provide a heavy, atmospheric and almost hypnotic sound effect, mimicking the existence of photons being trapped infinitely around a black hole. The flanger allows for remixing the synthesizer with a time-shifted version of itself, modulating the time-shift in a cyclical manner; this allows an additional level of control over the kick-drum synth, opening a performative dimension to the installation. In the case of the N-channel array configuration, the accretion disk landscape effect is maintained mostly through the subwoofers, as seen in

Image 8; the installation space should be appropriately chosen considering that the wavelengths of the kick-drum frequencies are of the order of meters, so that the space is correctly filled by sound.

The photon sphere is based on the work by Johannes Kreidler, the Pure Data patch for digitizing of the sound is also derived from the work showed there; the patch is shown in Image 11:

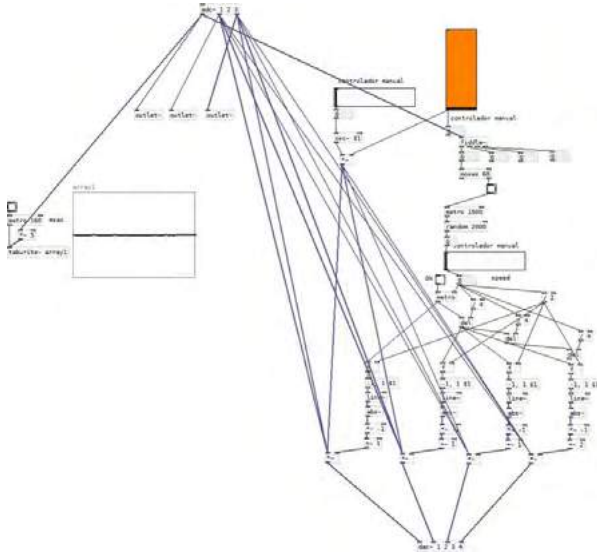


Image 11: Photon Sphere Pure Data patch.
spaceinteractionalexperience.org

CONCLUSION

Today, the concepts of the liminal, the frontier and the abstract, to which we have referred to in the text, may be explored through the ever increasing reach of technology, which now expands outward through the cosmos and inwards through our bodies: it is precisely at the end of the XXth century, when David Chalmers and Andy Clark published the paper: The Extended Mind, drawing upon the field of extended cognition, and later on in 2004 Andy Clark published Natural born cyborgs: Minds, Technologies, and the Future of Human Intelligence where he stated:

“I am slowly becoming more and more a cyborg. So are you. Pretty soon, and still without the need for wires, surgery, or bodily alterations, we shall all be kin to the Terminator, to Eve 8, to Cable... just fill in your favorite fictional cyborg. Perhaps we already are. For we shall be cyborgs not in the merely superficial sense of combining flesh and wires but in the more profound sense of being human-technology symbionts: thinking and reasoning systems whose minds and selves are spread across biological brain and nonbiological circuitry”.

Black Sonic Hole is an example of a nonbiological circuit, created to represent the singularity in Schwarzschild's solution, in a way that may be experienced at a human scale. The installation provides a way of transcending the corporeal, so that viewers become extended beings capable of experiencing this analogy of a Black Hole in their own flesh; in Clark's language: we aim to provide the user with the post-human capacity of transgressing physical (space and time) and material limitations and leaving behind biological constraints. For this experiential purpose, we find that sound is the most adequate medium, considering that the aesthetics of liminality have changed in the age of experiential, affective, multisensorial art and moist media³. As Professor Simon O'Sullivan, in reference to philosopher Julia Kristeva, puts it:

"For Kristeva, art (in this case installation) is a bloc of sensations made up of abstractions, forms, colors, and volumes. This art is also a sacred space whose aim it is to give us a real (in this case, multi-sensory) experience. Kristeva talks about these installations not in terms of representation but in terms of their function, a function of incarnation. For Kristeva, this aesthetic function is the ultimate aim of art. This is in a sense to move to a post-medium notion of art practice, in that it is not so important what the specifics of a medium might be (no Greenbergian truth to materials, no more asking what is art? what is painting? and, thus, no more deconstructions); rather, what becomes important is what a particular art object can do. In relation to aesthetics and affects, this function might be summed up as the making visible of the invisible, of the making perceptible of the imperceptible or, as Deleuze and Guattari would say, as the harnessing of forces".

In this case those forces may be gravity, curvature and time, which we have harnessed in our three-dimensional installation: two spatial and one time based. These forces and dimensions comprise a sort of geometrical understanding of the installation: Black Sonic Hole is an ongoing development aimed at creating an abstract sonic landscape where, borrowing from Marko Vojinovic's language, a hole is a hole, black is black (Image 12) and matter tells geometry how to curve, while geometry tells matter how to move. In this way, geometry ceases to be just an "arena" where "physics happens", but rather becomes an active participant in physical processes. This participation of dynamics of geometry in physical processes is called gravitational interaction⁴. Our ultimate goal is to recreate this "arena" at a human scale, in a way that is both scientifically relevant and also enthralling for the user and the performer, as a result, the historical boundaries which have separated the fields of art and science for the past century collapse.

³ Roy Ascott. "Art, Technology, Consciousness: mind @ large". Intellect. 2000.

⁴ Marko Vojinovic. "Schwarzschild Solution in General Relativity". 2010.



Image 12: Black Circle, Malevich, 1915 (left); BlackSonicHole, S.I.E., 2016 (right).
spaceinteractionalexperience.org

FUTURE PROSPECTS

“There is a Black Hole in my bedroom, there are no windows in my bedroom, I do not know what lies beyond, this is the event horizon...”.

We find in storytelling a powerful tool to make complex physical phenomena accessible not just to the academic transgressive elites, but to everyone regardless of age and condition. It is here where we pick up the tradition started by the first science-fiction writers and artists: Jules Verne, Mary Shelley, George Melies or Rudolf Erich Raspe, to divulgate one of the most astounding findings of the past century.

For all these authors, writing was their cognitive technology par excellence, a technology which has dominated Western thought for millennia shaping thought and affect⁵. But now, times have changed, digital technology and code are reconfiguring this alphabet, its narrative, as well as human subjectivity and objectivity. Language is expanding, it is multisensorial, it can be implemented into complex installative systems like Black Sonic Hole. Hence, is our future goal to explore these narratives, in order to enrich the tradition started by those first authors who projected their scientific knowledge and technological imaginary in the written paper and to expand the reach of the installation as a divulgative tool.

Also, future prospects for the project are being worked on in regards to various distinct lines: starting with the N-channel architecture and a deepened time-dilation distortion effect, which is expected to improve the user experience. Other elements that are being considered are the addition of directional microphones and a distinct logic for the way trajectories are launched upon

⁵ TBrian Rotman. “Becoming besides ourselves: The alphabet, ghosts and the distributed Human Being”. Duke University Press. 2008.

inputting the user's voice. If directional microphones are used, the direction of the voice may be used to launch the sonic in a starting trajectory that mimics said direction; other characteristics of the voice such as the pitch or volume may also be used to create a particular starting trajectory, further emphasizing the individual experience of the user and his or her immersion.

An additional step towards augmenting the functionality of the installation is to democratize the origin points for the trajectories, so that each user may play with the whole space offered by the installation. This requires that the MATLAB code be translated into a C++ object, which may be incorporated into Pure Data patches as an 'external object'. Each user may be granted an individual microphone in order to achieve different points of origin and directions within the simulated black hole environment or, a smartphone APP may be implemented to achieve this effect, this possibility is subject to further studies and an increased complexity in the installation.

Finally, the addition of visual aids is also being considered: in an effort to increase the scientific outreach aspect of the installation, and for specific narratives surrounding it, projections may be added to the space so that particular known black hole candidates may be simulated, with different star-fields being projected onto the installation (based on actual astronomic photography) and different characteristics for the virtual black holes which are being simulated, which may affect the trajectories and time-dilation effects present at a particular time in the installation. This concept also adds an additional layer of interaction of the user with the installation, where a particular black hole may be simulated if it is, for example, the most voted for in Twitter, or some similar approach.

ACKNOWLEDGMENTS

The authors would like to acknowledge the contributions to the project of Pablo Méndez, Alejandro Serrano and also Sthef Folgar, who contributed during the Google Campus event. Specifically, the authors would like to mention Pablo Méndez for his authorship of some of the images on this manuscript. In addition, the S.I.E. team would like to thank Acustica Profesional Aplicada S.L. for their continued support and sponsorship of the Google Campus event and to Nir Hindi for the opportunity to showcase our work at said event.

REFERENCES

- Angelaki. *Journal of the Theoretical Humanities*, Vol. 6, number 3. 2001.
- Ascott, Roy. *Art, Technology, Consciousness: mind @ large*. Intellect. 2000.
- Clark, Andy. *Natural Born Cyborgs: Minds, Technologies, and the Future of Human Intelligence*. Oxford University Press 2003.
- Eisenstaedt. *The Early Interpretation of the Schwarzschild Solution*. In D. Howard and J. Stachel. "Einstein and the History of General Relativity: Einstein Studies", Vol. 1, 1989.

James, Oliver, Eugénie von Tunzelmann, Paul Franklin and Kip S. Thorne. "Gravitational lensing by spinning black holes in astrophysics, and in the movie *Interstellar*". *Classical and Quantum Gravity*, 32. 2015.

Kreidler, Johannes. *Programming Electronic Music in Pd*. 2013.

Malevich, Kazimir. *Suprematism*. 1915.

McCarthy, Bob. *Sound Systems: Design and Optimization*. 2007.

Rotman, Brian. *Becoming besides ourselves: The alphabet, ghosts and the distributed Human Being*. Duke University Press. 2008.

O'Sullivan, Simon. *The Aesthetics of Aect: thinking art beyond representation*

Vojinovic, Marko. "Schwarzschild Solution in General Relativity". 2010.

ABOUT THE AUTHORS

Space Interactional Experience group is formed by members of: Aerospace Engineering Group, Universidad Carlos III de Madrid; the Interactive Arts, Sound and Image lab (LiSD), Universidad Complutense de Madrid.

Daniel Perez-Grande BSc, MSc, PhD candidate

David Morante BSc, MSc, PhD candidate

Dr. Miguel Oliveros BA (Hons), MRes, PhD cum laude

Celia Talamante, BSc.

[S.I.E], an acronym for Space Interactional Experience, is an interdisciplinary art, science and technology non-profit organisation whose key divulgative concern is to bring people, as mundane users of technology, "one step closer" to the immensity of the physical reality, perceived through the limits of human knowledge/cognition, via experiential and immersive installations. The group, composed by six members and open to collaboration, meet at MedialLab Prado Madrid and Google Campus. In addition to the mentioned authors, other members include: Pablo Méndez, Architect and Designer and Alejandro Serrano, programmer and entrepreneur. The group has been active since Winter 2016, after coinciding in the NASA SpaceAppsChallenge 2016 competition, where the project first took form. We recently presented the concept behind the Black Sonic Hole project together with The Artian at the Google Campus in Madrid.

Email: spaceinteractionalexperience@gmail.com

Website: spaceinteractionalexperience.org

Uncanny

GIORGOS NIKOPOULOS
DALILA HONORATO and MARIANNE STRAPATSAKIS
Ionian University, Greece

Shadow Theater and Human Dolls

ABSTRACT

Shadows, objects on the surface of a cloth, characters of a story taking place in front of the eyes of the audience. Lifeless otherwise, animated throughout the performance as if not dead, inflated by emotions and aims, able of guiding the spectators through different sensations, communicating and interacting with them. On the other side of the cloth, behind the brightening lights, a single or a collective person serves the objects, those that have no breath, by performing duties such as giving voice to their language, transferring their thoughts, submitting to their authority. Moving according to what the characters on the cloth seem to manifest, distorting face, body and thought, disappearing behind the characters being animated. Perhaps the process of giving life to characters, animating, is not one-way? Perhaps there is a reverse course in this form of animation, where subject - operator - puppeteer - animator totally submits to the object being animated, representing an invitation to re-examine the concept of “doll”?

This paper focuses on the methodology of character embodiment through the analysis of an artwork where the object has been intentionally removed and the operators bend their humanness to the characters, being forced to adopt an alternative kinetic language, to perform an aberrant ritual of movements.

KEYWORDS

Shadow Theater, Animation, Performing Arts, Live Action Animation

INTRODUCTION

This study is based on the animation feature film THEOX that has shadow theater as inspiration. The intent is to create a current of ideas that opposes the usual concepts that might be commonly associated with shadow play. Meaning in this art form the shadow characters can be seen on the cloth and it is known that behind all that is a human being. A person that makes the characters “speak” as if they were autonomous, as if they had a personality by themselves, as if they had their own unique movement system, as if they had their own believes and

ideas. Under this specific circumstances, if one carefully observes the action of the person who moves the shadows, it is possible to realize that the individual changes and from subject it becomes object. The shadows that he moves, to which this individual provides spirit, have such a volume -due to the symbolism they carry and the fact that the story of their own purpose of existence is lost in history- these characters have such an extraordinary strictly structured qualities, that they impose their own characteristics to the puppet master who gives body, as an extension, to the behavior that is therefore expected.

REVERSING THE ANIMATION PROCESS

Based on the idea that the creation can also become the creator, that the object is the one that provides the required energy to become animated by the person, the director of the film THEOX developed this animation feature film using a method in order to change the course of this technique. The person who would move the character, the animator, embodies the role of the character itself. This is obviously a basic acting principle which was also used by Walt Disney, according to which the animators observe their own body so that they can find the adequate way to move the characters, they do dance classes, they find the character through their own body. What the creator intends to present is a form of sacrifice of the animator's full body to the character itself.

Copying the shadow theater method

There is obviously in shadow theater a tradition of moving huge puppets such as the Ancient Khmer shadow puppets. Other example is the Bunraku, a traditional Japanese form of puppet theater, in which multiple puppeteers move different parts of the same character. These puppets are quite complex, offering a variety of body expressions that is not common to find in puppets created in other parts of the world. In fact what is usual, is a single master puppeteer to play different characters. In this sense in order to understand how different individuals fuse their own existence under one single puppet possibly one has to go further deep into cultural and social history.

In order to create the animation film THEOX the director had to start by observing how the puppeteers move the shadows in order to understand how each character is performed. In THEOX the characters are not puppets, they are human beings behaving like puppets and the creator's role was to animate these characters. In order to be able to do this, to direct the actors, he had to become fully acquainted with the way each character had to be performed. In one sentence, he was essentially the animator and the actors were his characters. He was the subject, omnipresent and omnipotent, an equivalent position to the puppet master in Easter culture. To be able of doing this, to empty one's own personality and become a bare character, it is required to integrate a large amount of trust with the fact that all individuals involved know each other extremely well.



Image 1: Natali Mandila as the Ox and Dimitris Politis as the Old Man.
Backstage photo by Giannis Dimitras

TRUSTING THE DIRECTOR / PUPETEER AND ACCEPTING A REVITALIZATION OF THE CHARACTERS

One should not forget that even in theater where the actor performs a certain specific role, according to the script and the interpretation of the director, there is always an amount of ego that seems to show between the actor's performance, a product of the interaction between the performer and the director.

In the case of the methodology followed in THEOX this interaction becomes obvious only in technical issues such as a specific position has a certain length because the performer is unable to endure further. This feedback from the actor to the director happens at a physical level due to an impediment of the body. Beyond the physical a period of 6 months was required to guarantee this level of adaptation between the two parts, so that each performer's ego would not resist. All performers, ages 27-35, one man and four women knew right from the beginning the nature of this project, exactly what the director's aim was and how it should be performed without margin of doubt.

It could be said that this has some hints of domination - submission in erotic play in the sense that one part is following and the other part seems to have the control of the situation. A sort of power exchange when one part becomes object while offering one's own ego in the hands of the other who manipulates. Obviously trust is something that is essential otherwise this sort of play is not possible to develop. In this sense, the methodology developed through the creation of THEOX has several points in common with this alternative sexual lifestyle.

Revitalization and eroticism

Whatever level of eroticism might be implied in this art, the creator's attempt was always, besides the emotional output that comes through the artwork, to remain within rational boundaries. His role was to create the crave inside the actors, the need to behave in a certain way and in this sense it is an erotic act. In this method there is a clear agreement of what the limits of each part is and the director's role is to identify where the borders are and to follow with pushing the edges one step further if all parts consent in this.



Image 2: Director Giorgos Nikopoulos teaching the physical expression to Natassa Karalia in the role of the Angel. Backstage photo by Giannis Dimitras.

He was the one handling the direction of the erotic wave, obviously not as a sexual practice, but for sure applied eroticism as in the case of sculpture. He was molding the actor's body as clay, where they had to execute movements that as a composition could symbolize the essence of the character itself. The preparation of the performers was based mainly on rhythm. In the specific kind of theatre that the director was thought, the way of expressing was very clear through the spoken language but the animation was a great support to understand how this is possible to express through body language. This is based in the 12 principles of animation that Walt Disney used to use and which are captured in a book called *The Illusion of Life* by animators Ollie Johnston and Frank Thomas. More specifically he used two of these 12 principles, Anticipation and Squash & Stretch. When the team started rehearsing in the beginning, they did not get straight into the characters. Characters came much later. First it was required to discard the typical body positions, the ordinary movements. Maybe this is easy

when we are referring to an elastic material. As for human beings it has to do with the management of energy.

In animation even a pause is full of energy, it is the character the one that contains movement, therefore the actor has nothing more to do but to allow the body to express this movement. For this reason a selection of positions was created so that the character could charge its own energy and get ready to the next positioning. This flow of energy is not linear and either fragmented. It resembles a spiral form in this double movement of concentrating and expressing energy.

CONCLUSION

This synthesis of analogical performing and digital environment is what is proposed for Live Action Animation because it contains the principles of animation in the movement executed by the performers. It is not a rotoscoping in which actors were performing as they used to as human beings and being animated after the video shooting. It is not a motion capture. The characters in the way they are performed in this method of Live Action Animation are animated by themselves. They do not just give the material for animation, they are the animation characters presented.

REFERENCES

- Caimi, Giulio (1990), *KARAGHIOZI or the ancient Greek Comedie in the heart of Shadow Theater*, ATHENS: Gavrilidis.
- Johnston, Olie. Thomas, Frank (1995), *The Illusion of Life: Disney Animation*, USA: Hyperion.
- Grigoriou, Christos (2018), 'Estrangement' and 'Primitivism' in The Ox of G. Nikopoulos", *Fractal*, issue 45, February, <http://fractalart.gr/the-ox/>. Accessed 03 April 2018.

ABOUT THE AUTHORS

Giorgos Nikopoulos is presently developing his PhD studies involving the materialisation of an artwork by combining shadow theater techniques and animation techniques in an interactive environment at the Department of Audio & Visual Arts of the Ionian University. Among other activities he has performed as an actor and as a director assistant in theatre under the direction of Dimos Avdeliodis. He is the director and producer of BAUBO productions and his latest project, the animation film THEOX is now screened in various festivals around the world and won already 4 awards.

Email: nikopoulos@bauboproductions.gr

Official website: <http://bauboproductions.com/>

Dalila Honorato

Currently Assistant Professor in Media Aesthetics and Semiotics at the Department of Audio and Visual Arts of the Ionian University where she is one of the founding members of the Interactive Arts Lab. She is the head of the organizing committee of the conference “Taboo-Transgression-Transcendence in Art & Science” and developer of the studies program concept of the Corfu Summer School in Hybrid Arts. She is a guest faculty at the PhD studies program of the Institutum Studiorum Humanitatis in Alma Mater Europaea, Slovenia, and a guest member of the Science Art Philosophy Lab integrated in the Center of Philosophy of Sciences of the University of Lisbon. Her research focus is on embodiment in the intersection of performing arts and new media.

Email: honorato@ionio.gr

Marianne Strapatsakis

Founding member of the Audiovisual Arts Department, Ionian University, Corfu, Greece (2004). Head of the Department of Audio and Visual Arts of the Ionian University (2012-2014). During her artistic career, she has accomplished thirty six personal exhibitions in Greece, France, England, Germany, Italy, Turkey, Chile and she has participated in fifty eight group exhibitions in Greece, France, Germany, Netherlands, Spain and England. Her work is presented in all Dictionaries of Art, and in 150 newspaper and journal articles. It has been also shown on TV and radio broadcasts, and finally has been exhibited in various Festivals in Greece and abroad. Works of Marianne Strapatsakis belong to several collections in Greece and abroad.

Email: maristra@ionio.gr

Official website: <http://www.mariannestrapatsakis.gr/>

BRIAN REFFIN SMITH
Collège de 'Pataphysique, Paris

Beyond limits: Zombie theory and the art and science of constraint.

ABSTRACT

What I term the liminal Zombie (otherwise known as the philosophical or p-Zombie) is a useful construct in consciousness studies and elsewhere. The living dead, as an idea rather than the Hollywood brain-eaters, are deeply ambiguous, being simultaneously dead and alive, yes and no, true and false, 0 and 1. The waveform never collapses, resolves, but the Zombie state can be very rich in its constraint (the Zombie by definition has no feelings or 'qualia') to be on a meta-level, above such considerations.

The Zombie is a transgression. One can 'deal with' constraints by breaking free of them, or by accepting and even strengthening them, apparently reducing freedom. The Zombie does, or is, both. One can squeeze a lemon until the pips squeak, but eventually a spurt of juice will escape and hit one in the eye, rendering one simultaneously blind and very aware.

Such groups as OuLiPo in literature and OuPeinPo in art, both under the philosophical umbrella of 'Pataphysics, the science of exceptions, singularities and generalised, rigorous absurdity, use constraints to further creativity. I shall argue, with examples and stories, that the necessary open-mindedness of the Zombie, combined with the espousal of constraint-as-freedom, can be a rich source of creativity in the arts and elsewhere.

The audience for this paper will be invited and aided to enter the Zombie state, from and into which possibilities to create and consider artworks will be offered, experiments undertaken and some new ideas for art, science and creativity will be presented. In-between black and white, there is always... red. And out-between: infinity.

KEYWORDS

Zombie, constraint, Pataphysics

Beyond limits: Zombie theory and the art and science of constraint.

Note: This paper will form the basis of the presentation, which however will contain less words and more performance and experiments.

The living dead are not in the liminal space around the boundary between alive and dead. The liminality spreads everywhere: Zombies are living and dead, all the time, in all circumstances. Thus the real Zombie is a transgression even against itself, as opposed to the Hollywood brain-eaters, which were once fully alive and can, depending on circumstances, be rendered fully dead. It is auto-transgressive, as the quantum bit is both 0 and 1, and is thus not a binary digit at all. The Zombie waveform stays always uncollapsed, there is no binary choice or imposition.

But there is constraint. The definition of the liminal or p-Zombie, the philosophical Zombie, is that they have no qualia, no “real” feelings. They may appreciate a glass of wine, smile at the smell of the sea or wince in pain if they burn themselves, but these are only Zombie reactions, not feelings like we are supposed to have. They exist in an endless, liminal no-man’s- zone, on a meta-level, beyond questions of yes and no, true or false. As such, they are deeply constrained, in human terms, because as a whole, they can never be a part which sees, and a part which is seen. There is nothing it is like to be a Zombie, as they say. They have no consciousness, only the appearance of one. But there is also no test whatsoever that can distinguish between us and them. It is logically possible that we are all Zombies.

One can “deal” with constraints by breaking free of them, or accepting them, even by increasing and strengthening the constraints. But again, the Zombie is a transgression, being all of these solutions at once (and all of their problems at once). It is entirely open minded, the most objective, rational being you can imagine. The Zombie, before you even ask or look, has both fought against and accepted their binary choices, simultaneously, transcending both. We can do things with this idea. Constraint is freedom. If you constrain a lemon until the pips squeak, eventually a spurt of juice will escape and hit you in the eye, rendering you simultaneously blind and very aware.

As for the Zombie, so for us. When freedom exists in parallel to constraint, as a unified whole, nothing can be done, nothing needs to be done, much as, say, the cosmos never needed to be divided in most creation myths, the void to be separated into “this” and “that”. But if we impose artificial constraints on the theoretical, artificial, p-Zombie (since, to be honest, Zombies are just a mental construct, except your present author) then we are forced to imagine the perfectly objective, quality-free being in the middle of doing something.

Please hold on to this idea for a minute, because I want to argue that we ourselves are, in many useful ways, in a Zombie state. You have perhaps heard of the “inner Zombie”. In experiment after experiment, it has been shown that

we become aware of an intention to act, up to 2 whole seconds after our brain, our muscles, prepare to carry out the action. You can show that something inside us decides to do something, that signals start to be sent to muscles, that a coordinated plan of action ensures, when we still didn't know, consciously, that we were going to do it. Then the "inner Zombie" graciously informs us that we have decided to do such an action, and we think it was our decision. Think of that: up to 2000 milliseconds delay between decision and being aware of that decision! (1)

So we can say that we are in fact controlled by a Zombie inside us, that that is perhaps all we are, it's Zombies all the way down. Clearly this is of interest in fields such as consciousness studies, philosophy and artificial intelligence. But I want to point out its significance now for creative activity in art and science, because being a Zombie or in a Zombie state gives us certain permissions.

Such groups as OuLiPo in literature and OuPeinPo in art, both under the philosophical umbrella of 'Pataphysics, the science of exceptions, singularities and generalised, rigorous absurdity, use constraints to further creativity. For an example, Georges Perec wrote an entire novel, *La Disparition*, without using the letter 'e'. Later, he wrote a shorter novella which had 'e' as its only vowel. The creative "flavour" of these novels is entirely unique, due to the constraint. They are not just formal exercises, but fully creative, game-changing works. In OuPeinPO, the *Ouvroir de Peinture Potentielle*, of which I am a member, a constraint might be to remake a map of Paris so that the river Seine is now a straight line, and rest of Paris distorted to make that possible. Or we might tie two peoples' wrists together, put one pencil into their combined hand, and ask one to draw a cat whilst the other draws a house. Will they cooperate, or fight? The constraint can be very liberating, and of course goes beyond just a drawing. The best interactive art always makes you look at the participants.

In The Collège de 'Pataphysique (2) there are, as well as artists, writers, philosophers, performers, musicians and so on, quite a few scientists, mathematicians, neurologists, astronomers etc. They too find that the constraint of being absurd, of having in a way to imagine that any wave-form is still uncollapsed, that decisions rest with the internal Zombie, in fact leads to a new kind of creativity. 'Pataphysics is to Metaphysics what Metaphysics is to Physics.

The constraint is not about listening to the unconscious, or the Zombie; neither is it about trying to imagine what such an entity would do. It is about approaching the Zombie state, using various tricks and techniques, and becoming, for a short time, something other than ourselves. There is so much talk of "transcending ourselves", but this is "Transgressing ourselves", deliberately entering a Zombie state.

The physician, the scientist-in-the-street if you like, might say "I have a brother, and he likes cheese". The metaphysician says "Maybe I have a brother, and maybe he likes cheese...". The 'Pataphysician can say, with absolute certainty, "I don't have a brother, and he likes cheese." Thus a neuroscientist

from the Institut Pasteur in Paris can prepare, present and receive great praise for an academic lecture about the growth of hair on the inside of the head, instead of on the outside, and its effect on the working of the brain, using a variety of scanning techniques and a rather Alice in Wonderland approach. Thus too, the science of 'Pataphysics subsumes all other sciences into itself, thereby rendering them other to themselves, as if in a rather Dadaistic, parallel universe.

I want to demonstrate now that we are all Zombies, deep down, and that if aided to recognise that, we can be creative in new, literally unthinkable ways. Since Zombies have to wear a bandage around their heads, to keep the jaw closed so that the "p'tit bon ange" of the Haitian Zombie or Voodoo religion may not emerge, I shall ask the audience to take a sufficient length of toilet paper, usually 8 or 9 sheets in Europe but 12 in the USA, for some reason, and wrap it around their heads with a knot at the top.

In this state, two experiments will be conducted, both involving perception but also the fact that we cannot trust the conscious brain to feed us reliable information. Our conscious decision bounces back and forth between inner Zombie and outer "conscious human being". For a few minutes we are in a liminal Zombie state, a transgression, unable even to ask or to answer the question "Am I this, or that?". When participants have recognised and accepted that they are in a Zombie state, due to the experiments' outcomes, they will be invited to create a transgressive, Zombie-state artwork, and to consider what this might mean.

REFERENCES

- (1) https://en.wikipedia.org/wiki/Benjamin_Libet
- (2) <https://en.wikipedia.org/wiki/%27Pataphysics>

ABOUT THE AUTHOR

Brian Reffin Smith, artist, theoretician, musician and teacher, born 1946 in the UK, lives in Berlin, Germany. He won the first ever Prix Ars Electronica, the Golden Nike, in Linz, Austria, 1987, and his artworks are shown internationally. His article '43 dodgy statements on computer art' was described by Wired as 'timeless'. He was a pioneer of computer based conceptual art and works frequently, via exhibitions, lecture/performances, installations and texts, with applications of Zombie and 'Pataphysics (the science of the absurd, of exceptions and singularities) to art and creativity. He studied at Brunel University and the Royal College of Art where he later taught computer based art and design for five years before being appointed professeur, Art & Informatique, at the École nationale supérieur d'art in Bourges, France. He became a Zombie in 1998.

POLONA TRATNIK

Alma Mater Europaea – Institutum Studiorum Humanitatis

Designing Grass, Designing Dress in the Era of Creativity: Has Art Become Design?

ABSTRACT

In the presentation the author pays attention to the concept of design in reference to somebiotechnological art projects and to the biological fashion design. In her project Trust me, I'm an Artist Špela Petrič shapes the appearance of the grass, which actually means affecting the growth of the grass, shadowed by the artist's body during the hours-lasting performance. The artist designs the grass, not only with her body, but also with the power she exercises over it. To design the plants, to subject other species to him- or herself is a common practice of humans, interested in cultivation. Humans cultivate the natural, which means the "raw" material, particularly the biological matter, and shape it, design it. This does not only mean to shape, i.e. to impose a form, but first of all to conceptualize and manage, i.e. to project and to engineer. In her performance, Petrič challenges the dominating position of the human. The power is being exercised also over herself, because of the long standing poise the performance affects her body, she is being designed through the performance by the power that was originally inflicted by herself, but which has been inflicted for the effects on the lives of the plants. In this loop of domination, the double effect is being achieved only through the symbiosis of both species, human and plant, which are forced to live in a community. It is the community that designs the lives of both. Designing here does not mean shaping, imposing a form to a formless matter, but also means designating, determining the life of the species. Design is in this sense the power over life, i.e. biopower, whereat human is not simply in power of the situation, but is being simultaneously affected by the lives of the other species in the community. Human species is as well subjected to the plant project as is the plant to the human project. It is a double projection, double engineering. If this poetic art project which designs the grass and the artist challenges the anthropocentricity of the public, fashion design would on the contrary most likely strive after some other ends. The author of the presentation addresses the question of designing in fashion design in this particular moment of today, when ethical design is at rise and the biological engineering has been introduced to fashion design. Finally, the author considers the concept of design in reference to the Bible.

INTRODUCTION

With the rise of neoliberal ideology according to which every social doing is to be considered as enterprise, art and any other creative activity are considered as economic activities. This is however not just irrelevant statistics to serve the survey of social practices, but has a very practical effect in considering art as economic activity. If art is to earn money for itself, then it does not need state support. Recently the state support of cultural activities has steeply fallen in European countries, such as Netherlands and Slovenia. Yet at the same time the governments demonstrate interest and support for creative professions in general, and in creative industries in particular. As evidenced by the UK government creative industries are a subset of the Creative Economy – an economic sector that comprises creative professions from artists, designers, craftsman, publishers, museum directors, to IT, software and computer services and which presents about 8,5 % share of the wider UK economy (statistics from 2012).¹

The answer to the question, what exactly are creative industries, seem complex since there have been many books written offering answers. It is however basically a political question, which is also evident from political defining. According to the 2001 Creative Industries Mapping Document, which was published by the UK government creative industries are “those industries which have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property.”² As posted here the document was meant to demonstrate “the success of our creative industries”.

According to the political documents, such as UNESCO and UNDP creative economy report and the green paper by EC, creative economy embraces also art. The common denominator of all the practices belonging to the sector is economy. Here I will address the question, why it is dangerous to comprise art as part of creative economy.

How did creative industries come to such a relevance in contemporary society? UK is actually the country to be considered as their birthplace. The rise of creative industries was in direct connection to political rise of a politic who introduced radical social and economic changes, such as mass privatization and financial deregulation. In the 1980s, “Margaret Thatcher’s rise to power was assisted by an advertising agency. The year was 1978, the first time a creative agency (Saatchi & Saatchi) had managed to secure a British political party as a client.” The agency’s “Labour isn’t working” campaign gave advertising agencies a new level of validity. Thatcher’s triumph had illustrated the true powers of creative thought to the widest audience.³

¹ UK Department for Culture, Media and Sport, Creative Industries Economic Estimates January 2014, London. Statistical Release.

² <https://www.gov.uk/.../creative-industries-mapping-documents-2001>

³ <https://www.forbes.com/sites/gyro/2013/04/11/how-margaret-thatcher-transformed-the-creative-industry/#680221b96a46>



Image 1: The principal drives, but also effects of creative industries are capital and ideology. Similar holds true for creative industries today as what Theodor Adorno and Max Horkheimer ascertained for the culture industry at its early rise – it is the main means for ideological propaganda.

1. CREATIVITY IN A CREATIVE SOCIETY

We live in a “creative society”. There is persistent call everybody hears today – it is a call to be creative. Creativity is the very ideology of capitalist society. We are all creative, we dress creatively, we live creatively, we love creatively. Everybody is creative. Today, in particular in the UK and Netherlands, but increasingly also elsewhere, we hear there are laboratories and workshops taking place for (bio) artists and designers. Nowadays it often seems art and design walk hand in hand or are even sometimes considered as one and the same thing. If art grounds in creativity and everybody is creative, then everybody is an artist and we have lost the criteria for the function of art and art has lost orientation.

Let’s pay attention to some grounding concepts of the ideology of creativity. For designers, creativity is the principal condition. Two notions come to the front – “creation” and “design”. According to the Cambridge dictionary, the term creation etymologically originates from Latin *creationem* or *creatio* (nominative), which means creation, *coming into being*. The Christian reference is very relevant for the notion of creation. In the Bible we find the meaning: coming

to life from a dead matter: “And the LORD God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul.”⁴

Let’s revise some recent conceptions of creation:

1.1 In synthetic biology

Craig Venter has aimed to create a life form (*Mycoplasma laboratorium*) with synthetic biology. In 2010 his team announced in *Science* that they had created “Synthia,” a kind of bacteria that had never existed in nature. A long DNA molecule containing an entire bacterium genome was plugged into a computer, where it was manipulated as software, then Venter’s team extracted and discarded the DNA from a similar cell and finally introduced the created DNA into the emptied cell. The parent of “Synthia” is a computer, and it came into physical existence as a DNA print. The boundaries between the computed and biological have literally blurred. This creation has thus been referred to as “synthetic life.”

Although this objective is evident in Craig Venter’s strivings, genetically modified and synthesized organisms are not *created* in the sense of bringing something formed from dead matter into life, which was the Biblical sense of creation. The dualism between dead matter and a living soul is present in Venter’s aim to *create* a life-form originating from another, non-living source (as for example from a computer program). However, the achievements of biotechnology in the manipulation of life do not simply re-present this ancient dualism between body and soul. The boundaries between living and non-living matter have become blurred, and the concept of life has acquired novel dimensions that are quite incomparable with traditional ones. The notion of having life “on” and “off” is simply obsolete, since life can get dissolved, dispersed, diluted, or delayed.

1.2 In media philosophy

In the late 1980s Vilém Flusser discussed the issue of “becoming godlike” in regard to biotechnics. He introduced two concepts of creation, true creation and variational creation. If a form were created that had never existed before, this would be an instance of true creation. And in the case of true creation, we would be dealing with magic and a magical power characteristic of artistic creation. This bringing to life will result in something its creator will be incapable of understanding. True creation is the province of a genius. The notion of true creation according to Flusser is rather speculative.

The other model he discussed is variational creation. This is evolution. It is used not only in computing, but also in genetic engineering since it produces combinations and permutations of already existing elements of information.

⁰ Genesis 2:7.

Variational creation operates within given possibilities. By contrast, true creation would challenge the very idea of evolution, which is exactly the aim of present-day life-engineering. According to Flusser, variational creation is a method requiring a lot of work being done not just with computers, but also with biotechnology: “biotechnics is doing the same thing natural evolution does – variational creativity, the sole difference being that it does its work not by chance but according to a deliberate program.”⁵

1.3. In art and literature during modernity

In modernity, creation was a very relevant reference for art. It is to be found in the paradigm of the Author, criticized by Roland Barthes in his influential 1969 essay “The Death of the Author”. The Author is written with the capital A and has the status of God. The Author precedes the work of art as the father precedes his child: “the Author is supposed to feed the book — that is, he pre-exists it, thinks, suffers, lives for it; he maintains with his work the same relation of antecedence a father maintains with his child.”⁶ The author creates something significant from his potentiality or could be said from a scratch. The author has a godlike status. The work of art is an original product, a masterpiece. It is a creation.

2. PERFORMATIVIY

Roland Barthes rejected the paradigm of the Author. “The author is a modern figure, produced no doubt by our society insofar as, at the end of the middle ages, with English empiricism, French rationalism and the personal faith of the Reformation, it discovered the prestige of the individual, or, to put it more nobly, of the ‘human person’.”⁷ Instead, he argued for a text. A text is being born simultaneously with the producer, text is performative, and it is a network of references to thousands of focal points of culture, therefore it is open to interpretation.

This paradigm is essentially about performing, since the text *does what it writes*, as the performative speech *is doing things with saying them* according to John Austin. In addition to the performative dimension, which is crucial, Barthes’s notion of the text emphasizes the *automatism* of the act of writing. The performative writing in the production of the text is spontaneous, it is the stream of consciousness, James Joyce’s *Ulysses*. In the visual arts an equivalent proper example for the paradigm would be Jackson Pollock’s action painting.

We may not forget that Barthes’s revolt against the paradigm of the Author is also directed against the omniscient story teller. He has the universal wisdom

⁵ Flusser, “On Discovery,” *Artforum*, March 1988, p. 14–15.

⁶ Roland Barthes, “The Death of the Author”, p. 4.

⁷ Roland Barthes, “The Death of the Author”, p. 2.

and is not corporeal. It is a meta narrator, exterior to the work of art, observing the scene from a distance. It is a literary realization of the meta position of the observer or the Cartesian split between the body and the objective space. This split was strongly and systematically criticized by Maurice Merleau-Ponty. Merleau Ponty criticized Descartes' conception of space and claimed that space is not, as it was in the *Dioptrics*, "a network of relations between objects such as would be seen by a third party, witnessing my vision, or by a geometer looking over it and reconstructing it from outside. It is, rather, a space reckoned starting from me as the null point or degree zero of spatiality. I do not see it according to its exterior envelope; I live it from the inside; I am immersed in it. After all, the world is around me, not in front of me."⁸

The observer is looking at the *School of Athens* (Raphael Santi) from afar as through the window and everything that the painting is taking place within the pictured scene. The observer, on the contrary, stands where the man and the two girls stand at the *Place de la Concorde*, painted by Edgar Degas. We don't have a universal observer in a meta position, but a specific one – this is me observing the painting. And I am immersed in the scene, involved in it, I experience it from within.

In Degas's *Place de la Concorde* I however do not affect the square or the figures with my presence, I do not throw my shadow to the scene.

3. DESIGN

For the performance *Confronting Vegetal Otherness: Skotopoiesis* (2015) the performative dimension is crucial for the effect to take place in the real time. Yet another principle is significant for this project. The artist, Špela Petrič, shapes the appearance of the grass, which actually means she affects the growth of the grass by a shadow of her body. The shadow is thrown during the hours-lasting performance. The artist designs the grass. Yet she not only designs it with her body, i. e. forms it, but she also designs it with the power she exercises over it.

3.1 (In)forming has material grounds, design is projecting meaning

Let me shortly intervene with a terminological consideration. Paying attention to the term design is interesting to me also because I noticed significant differences in meanings of the terms, which are traditionally considered as translatable from one to another – i.e. the term "design" in English and the term "oblikovanje" in Slovene. The literal translation of the term "oblikovanje" to English "forming" as making a form, whereat the term "lik", a shape, is an etymological origin of the term "oblika", a form. However, forming, shaping or designing are terms with related, but not same meanings. The Slovenian term

⁸ Maurice Merleau-Ponty, "Eye and Mind", in: Galen A. Johnson (ed.), *The Merleau-Ponty Aesthetics Reader. Philosophy and Painting* (Evanston, Illinois: Northwestern University Press, 1993), p. 138.

“oblikovanje” or the English “forming” denote a process of making a form and in such a manner suggest that things exist in the first place without a form. This has to be disputed. Things always exist in a certain form, even if it is taken over from another matter. How is then forming, which is rather either trans-forming as changing a form or in-forming, linked to designing?



Image 2: Špela Petrič *Confronting Vegetal Otherness: Skotopoiesis'* (courtesy of the artist).

In *Towards Philosophy of Photography* (1983) Flusser discussed the verb inform. “Tools in the usual sense tear objects from the natural world in order to bring them to the place (produce them) where the human being is. In this process they change the form of these objects: They imprint a new, intentional form onto them. They ‘inform’ them: The object acquires an unnatural, improbable form; it becomes cultural. This production and information of natural objects is called ‘work’ and its result is called ‘a work’.”⁹ Recalling Barthes, what Author is producing, is a work. The theoreticians of modernity, including Martin Heidegger, think of the products of the artistic activity as the works of art. It is work that is invested, it is an Author that precedes the product and it is the work of art that results the Author’s work. Work (as a noun and as verb) is the category of the traditional comprehension of art, also of the high modernism.

The notion “forming” therefore has a very material ground. Forming is in this regard a concept closer to the concept of creation than to the concept of design. Bible says: “LORD God formed man of the dust of the ground”. Design

⁹ Vilém Flusser, *Towards a Philosophy of Photography* (London: Reaktion Books, 2000), p. 23.

is, on the contrary, immaterially grounded. It is about thinking, about concepts and about projections of these concepts back to the world. It means planning. The contemporary Cambridge dictionary defines design as a verb as follows with two meanings: “to make or draw plans for something, for example clothes or buildings” and “to intend”.¹⁰

3.2 Information is a change of meaning, it is Immaterial

With aiming at performative status art no longer produces artifacts, solid, closed, denotable entities with single meaning. Bathes paid attention to this shift in literature. With performances, not only in the 1960s, but already with the Dadaist and Russian Futurist experimentations, this becomes even more evident. Art has become immaterial and performative.

With Flusser we can add another aspect of the change from object oriented productions of the industrial age, to the immaterial processes of contemporaneity. The shift has taken place with the arrival of the postindustrial age, which is actually the age of apparatuses according to Flusser: “The basic category of industrial society is work: Tools and machines work by tearing objects from the natural world and informing them, i.e. changing the world. But apparatuses do not work in that sense. Their intention is not to change the world but to change the meaning of the world.”¹¹ The basic category of this age is ‘information’.¹² This is how Flusser comprehends the shift from material to symbolic culture: “This shift of power from the material to the symbolic is what characterizes what we call the ‘information society’”.¹³

The term design etymologically originates from Latin *designare* “mark out, devise, choose, designate, appoint,” from de- “out” + *signare* “to mark,” from *signum* “identifying mark, sign”.

If we only recall the early considerations on the production of meaning by Augustine (354 to 430), we find this interpretation of signification or rather communication: “There is no other reason to produce meaning [Lat. significandi], i. e. to produce signs [Lat. signi], except that we transmit in the mind of someone else something, what we have in our mind.” The notion of design thus obviously has to do with the communication or change of meaning.

In his essay “About the Word Design” Flusser lists several meanings of the verb design, such as “to concoct something”, “to simulate”, “to draft”, “to sketch”, “to fashion”. He noticed the word appears associated with cunning and deceit and summarizes: “A designer is a cunning plotter laying his traps.”¹⁴

¹⁰ <http://dictionary.cambridge.org/dictionary/english/design>

¹¹ Vilém Flusser, *Towards a Philosophy of Photography*, p. 25.

¹² “the category ‘work’ must be replaced by the category ‘information.’” Ibid.

¹³ Ibid., p. 30.

¹⁴ Vilém Flusser, *The Shape of Things*, p. 17.

3.3 Designing Grass

Let's consider the concepts and functions of design in Špela Petrič's performance and in some cases of contemporary creative design. Recalling the paradigms discussed, obviously Petrič's performance is not the work of art, a creation in any respect, it is a performance, however it is not the paradigm as advocated by Barthes. It is processual, but it is not spontaneous and experimental. On the contrary, it is very well considered, thoughtful and planned. It is a project. It is a projection of a concept to design grass in a specific manner.

To *design* the plants, to subject other species to him- or herself is a common practice of humans, interested in *cultivation*. Humans *cultivate* the natural, which means the "raw" material, particularly the biological matter, and shape it, design it. This does not only mean to shape, i.e. to impose a form, but first of all to conceptualize and manage, i.e. to project and to engineer. In her performance, Petrič challenges the dominating position of the human. The power is being exercised also over herself, because of the long standing pose the performance affects her body, she is being *designed* through the performance by the power that was originally inflicted by herself, but which has been inflicted for the effects on the lives of the plants. In this loop of domination, the double effect is being achieved only through the symbiosis of both species, human and plant, which are forced to live in a community. It is the community that *designs* the lives of both. *Designing* here does not mean forming, imposing a form to a formless matter, but also means designating, determining the life of the species. Design is in this sense the power over life, i.e. biopower, whereat human is not simply in power of the situation, but is being simultaneously affected by the lives of the other species in the community. Human species is as well subjected to the plant project as is the plant to the human project. It is a double projection, double engineering.

3.4 Has art become design?

If this poetic art project which designs the grass and the artist challenges the anthropocentricity of the public, fashion design on the contrary strives after some other ends. In Flusser's observation, "The word design has managed to retain its key position in the everyday discourse because we were starting (perhaps rightly) to lose faith in art and technology as sources of value. Because we were starting to wise up to the design behind them."¹⁵

¹⁵ Ibid., pp. 20–21.

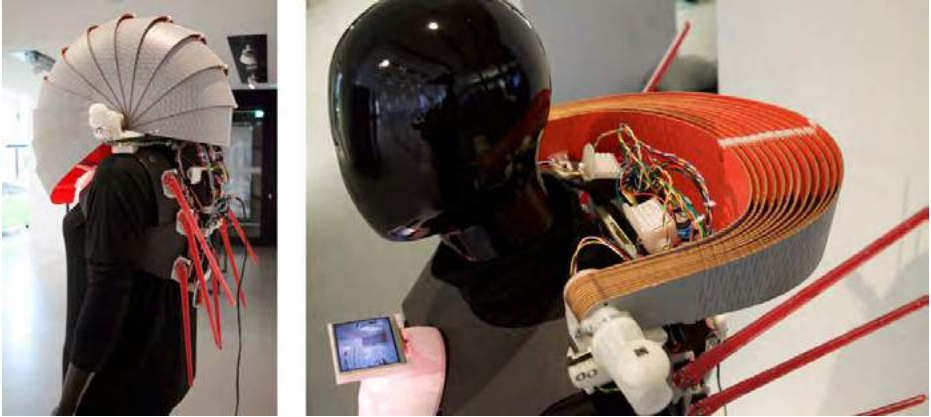


Image 3: Designs (courtesy of the author)

It is urgent to reconsider the relevance of art in this society, which is aiming at embracing it under the umbrella of creative industries and translating it to design. (*ENVIRONMENTAL DRESS, *ETHICAL JEWELLERY, *SIMPLE OFFICE) Design is here to make our lives easier and more comfortable. Everything around me is becoming smarter so that I can switch off my brains and let myself to someone else's power, to somebody else's control, as we may not forget that technology is never neutral means for my private entertainment. The case of Petrič shows that the effect of art is not to design yet another suit to buy and add to the too many suits I already have in my wardrobe, but to subvert the dominant structures of comprehending the world that I have at my disposal, to introduce different, unexpected meanings referred to the things I know from my everyday life or that concern me and you and all of us. Art does not make our lives easier, but makes us rethink the values and norms we have perhaps unconsciously accepted. In that sense art is exactly what creative industries are not.

REFERENCES

- Barthes, Roland, "The Death of the Author". <http://www.ubu.com/aspen/aspen5and6/threeEssays.html#barthes>.
- Flusser, Vilém, "On Discovery," *Artforum*, March 1988.
- Flusser, Vilém, *The Shape of Things: A Philosophy of Design*, London: Reaktion Books, 1999.
- Flusser, Vilém, *Towards a Philosophy of Photography*, London: Reaktion Books, 2000.
- Merleau-Ponty, Maurice, "Eye and Mind", in: Galen A. Johnson (ed.), *The Merleau-Ponty Aesthetics Reader. Philosophy and Painting* (Evanston, Illinois: Northwestern University Press, 1993.

Theaker, Nick, "How Margaret Thatcher Transformed the Creative Industry", *Forbes*, April 11, 2013. <https://www.forbes.com/sites/gyro/2013/04/11/how-margaret-thatcher-transformed-the-creative-industry/#680221b96a46>.
UK Department for Culture, Media and Sport, *Creative Industries Economic Estimates January 2014*, London. Statistical Release. <https://www.gov.uk/.../creative-industries-mapping-documents-2001>.

ABOUT THE AUTHOR

Polona Tratnik, Ph.D., is Dean of Alma Mater Europaea – Institutum Studiorum Humanitatis, Faculty and Research Institute for Humanities, Ljubljana, where she is a Professor and Head of Research as well. She also teaches courses at the Faculty for Media and Communication at Singidunum University in Serbia, at the Academy of Fine Arts and Design of the University of Ljubljana, at the Faculty of Education of the University of Maribor and at the Faculty for Design of the University of Primorska. She used to be the Head of the Department for Cultural Studies at the Faculty for Humanities of the University of Primorska. In 2012 she was a Fulbright Visiting Scholar, as well as a Guest Professor at the University of California Santa Cruz. She was a Guest Professor also at the Capital Normal University Beijing (China), at the Faculty for Art and Design Helsinki TAIK (Finland), and at the Universidad Nacional Autónoma de México (Mexico City). She is president of the Slovenian Society of Aesthetics (since 2011) and an Executive Committee Member of the International Association of Aesthetics. She has authored seven monographs and one proceeding as single author, including the *Hacer-vivir más allá del cuerpo y del medio* (Mexico City: Herder, 2013), *Art as Intervention* (Sophia, 2017) and *Conquest of Body. Biopower with Biotechnology* (Springer, 2017). Polona Tratnik is a pioneer bio artist exhibiting worldwide at shows such as Ars Electronica festival and BEAP festival in Perth.

Art, Science and the Importance of Limits

ABSTRACT

There is a modern dominating tendency of restricting or even abolishing the traditional boundaries between distinct mental categories, such as Science and Art: the methods and the aims of scientists and artists have sometimes intermingled with each other. Furthermore the role of the artist as the one to define his/her work as an artistic one has also been questioned, as its receiver has often been recognized as the most appropriate person both to define it as an artwork and to create its meaning through interpretation. This new trend is so confusing both to the average person who finds it difficult to properly perceive reality and even to artists and scientists who might feel disoriented seeking for new and steadier identities.

The aim of this paper is to highlight the effects of the elimination of traditional limits on Art and Science. While Art is to be understood as an absolutely free mental activity that doesn't need cognitive or methodological limits, Science is by definition more restricted by specific requirements and standards. In particular, the following points are to be discussed:

- The limits between Art and Science are necessary and essential for the benefit of Science. Medicine, for example, has always been an Empirical Science, even in cases that doctors have cooperated with artists for an artistic aim (Orlan).
- It must be always clear that even if artists work alongside scientists following to some extent their aims and methods, they still serve artistic purposes (Bio-Art).
- The Theory of Reception which broadens the meanings of artworks is favorable for Art, because it highlights its definition as the mental activity that awakens and strengthens subjective thinking. Through the case of "Planking", a public game played worldwide and displayed with photos on the web, which is presented through philosophical and art historical argumentation as a conceptual artistic happening, it is to be shown that the Theory of Reception can also operate as an ontological theory and not just as an interpretative one.
- The abolition of the traditional limits between the distinct artistic categories and methods is shown as advantageous for the artists, as it contributes to the enhancing of free expression.

KEYWORDS

Art and Science, Orlan, Joe Davis, Bio-Art, Theory of Reception, Planking

ΕΙΣΑΓΩΓΗ

Σαφείς ορισμοί και οριοθετήσεις επιστήμης και τέχνης αποτελούν επίτευγμα του δυτικού πολιτισμού, έχοντας την αφετηρία τους στον 17ο αι. Στην αρχαιότητα δεν υπήρχε ουσιαστική διάκριση: Σωκράτης, Πλάτωνας και Αριστοτέλης ταύτιζαν σε μεγάλο βαθμό τις δύο έννοιες (Stanford Encyclopedia of Philosophy, 2003). Οι σύγχρονοι ορισμοί της επιστήμης ως της πνευματικής δραστηριότητας που στοχεύει στη διυποκειμενική κατανόηση του κόσμου και τη συγκρότηση νόμων με προγνωστική δυναμική μέσα από συστηματικούς εμπειρικούς και ορθολογικούς ελέγχους, έχουν την αφετηρία τους στον Γαλιλαίο, τον Νεύτωνα και την Επιστημονική Επανάσταση. Η επιστήμη από εκεί και ύστερα εξετάζει υποθέσεις μόνο με εμπειρική παρατήρηση και μαθηματική περιγραφή, χωρίς ποιοτικές, αξιολογικές και τελεολογικές παρεκκλίσεις. Η ύπαρξη ωστόσο περισσότερων επιστημών έχει οδηγήσει στη συγκρότηση ταξινομικών μοντέλων, με ιδιαίτερα σημαντικό εκείνο που ομαδοποιεί τις επιστήμες με κριτήριο τις μεθόδους που ακολουθούν. Σύμφωνα με αυτό οι επιστήμες διακρίνονται σε τρεις μεγάλες κατηγορίες: τις εμπειρικές επιστήμες που έχουν πληροφοριακή δυναμική και σκοπό τους την εξήγηση του κόσμου, όπως είναι οι επιστήμες της φύσης, τις δεοντολογικές επιστήμες που διερευνούν τους τρόπους ρύθμισης του κόσμου, όπως είναι η νομική, και τις ανθρωπιστικές επιστήμες που χρησιμοποιούν ως μέθοδο τους την ερμηνεία με σκοπό την κατανόηση πνευματικών έργων κι ανθρώπινων πράξεων, όπως είναι οι φιλολογίες και η ιστορία της τέχνης (Γέμτος, 2004).

Την εποχή της Επιστημονικής Επανάστασης καθίστανται σαφείς τόσο η διάκριση της επιστήμης από την τέχνη, όσο και της τέχνης ως ελεύθερης πνευματικής δραστηριότητας από τις εφαρμοσμένες της εκδοχές που έχουν περισσότερο πρακτικό προσανατολισμό. Για πρώτη φορά η αναγνώριση της ζωγραφικής, της γλυπτικής και της αρχιτεκτονικής ως διακριτών καλλιτεχνικών κατηγοριών πραγματοποιήθηκε στην Αναγέννηση, όταν αυτές εντάχθηκαν στην ομάδα των *Arti del Disegno*. Τον 17ο αι. οι τέχνες αυτές μετονομάστηκαν σε *Beaux Arts* στο πλαίσιο της Γαλλικής Βασιλικής Ακαδημίας Ζωγραφικής και Γλυπτικής, ενώ ορίστηκαν ως πνευματικές δραστηριότητες που προϋποθέτουν θεωρητική γνώση και μιμούνται την πραγματικότητα με σκοπό την ιδεατή της απόδοση και την έκφραση του ωραίου. Με την Επανάσταση του Μοντερνισμού ωστόσο προέκυψαν νέοι ορισμοί, με θεμελιώδη τον ορισμό που αντιλαμβάνεται την τέχνη ως ελεύθερη πνευματική δραστηριότητα που δεν υπόκειται σε μεθοδολογικούς και εργαλειακούς περιορισμούς, έχοντας ως βασικό σκοπό την ανανέωση του πνευματικού ορίζοντα δημιουργών και αποδεκτών σε υποκειμενικό και φιλοσοφικό επίπεδο: η τέχνη δεν έχει σκοπό να αυξήσει το πληροφοριακό μας δυναμικό, παρά μόνο να μας αφυπνίσει και να ανανεώσει

τρόπους σκέψης και πρόσληψης της πραγματικότητας. Επιπλέον, στο πνεύμα σύγχρονων αντιλήψεων που προβάλλουν το στοιχείο της ελευθερίας ως το κατεξοχήν οντολογικό χαρακτηριστικό της καλλιτεχνικής πράξης, ήδη από την περίοδο του μεσοπολέμου παρατηρείται τάση κατάργησης των ορίων τόσο μεταξύ των παραδοσιακών «καλών» και εφαρμοσμένων τεχνών όσο και μεταξύ όλων των καλλιτεχνικών μορφών έκφρασης γενικότερα.

Στη συγκεκριμένη εισήγηση εξετάζεται η αξία της ύπαρξης ορίων τόσο μεταξύ τέχνης και επιστήμης, όσο και μεταξύ επιμέρους επιστημών και τεχνών στο πλαίσιο ταξινομικών μοντέλων. Σκοπός είναι να δειχθεί ότι αυστηρές οριοθετήσεις είναι απαραίτητες στον επιστημονικό χώρο σε αντίθεση με τον καλλιτεχνικό που ευνοείται από τον περιορισμό και την κατάργηση τους. Στο πρώτο κεφάλαιο παρουσιάζεται η επίδραση της επιστημολογικής κοσμοαντίληψης που κυριαρχεί στον δυτικό πολιτισμό από τα τέλη του 19ου αι. αλλάζοντας και την εξέλιξη της τέχνης, η οποία υιοθετεί σε μεγάλο βαθμό το επιστημονικό μοντέλο δουλειάς και εμφανίζεται ως εικαστική διερεύνηση θεμάτων που έχουν την αφετηρία τους στον επιστημονικό χώρο. Η κατάσταση αυτή εξελίσσεται και κορυφώνεται στην μεταπολεμική εποχή, όταν καλλιτέχνες μπαίνουν στο επιστημονικό εργαστήριο και εργάζονται μαζί με επιστήμονες καταργώντας όχι μόνο σε θεωρητικό αλλά και σε πρακτικό επίπεδο τα παραδοσιακά όρια μεταξύ επιστημονικής και καλλιτεχνικής δραστηριότητας. Η αναφορά γίνεται στον γλύπτη Joe Davis της Bioart, αλλά και στη Γαλλίδα Orlan που χρησιμοποιεί την επιστήμη της ιατρικής ως καλλιτεχνικό μέσο έκφρασης των αιτημάτων της. Σκοπός είναι να δειχθεί ότι ακόμη και σε αυτή την περίπτωση η επιστήμη διατηρεί τις οριοθετημένες εμπειρικές μεθόδους της και δεν μετατρέπεται σε καλλιτεχνική πράξη. Στο δεύτερο κεφάλαιο παρουσιάζονται περιπτώσεις από τη βιβλιογραφία, στο πλαίσιο των οποίων καλλιτέχνες έχουν χαρακτηριστεί ως επιστήμονες από το γεγονός ότι πραγματεύτηκαν θέματα που στο μέλλον θα γίνονταν αντικείμενα επιστημονικής έρευνας. Η βασική επιχειρηματολογία για την αντίκρουση αυτών των διατυπώσεων επικεντρώνεται στη θέση ότι η επιστημονική δουλειά είναι πολύ συγκεκριμένη, ακολουθώντας αυστηρές ορθολογικές και εμπειρικές μεθόδους. Στο τρίτο κεφάλαιο γίνεται αναφορά στη θεωρία της υποδοχής που καταργεί τα όρια μεταξύ δημιουργού και αποδέκτη, προβάλλοντας τον τελευταίο ως καθοριστικό νοηματοδότη του καλλιτεχνικού έργου. Η θεωρία της υποδοχής μπορεί να εφαρμοστεί ακόμη και σε οντολογικό επίπεδο, όπως παρουσιάζεται μέσα από το παράδειγμα του δρώμενου Planking. Η εισήγηση ολοκληρώνεται με την ανάδειξη της καλλιτεχνικής ελευθερίας ως του θεμελιώδους οντολογικού χαρακτηριστικού της τέχνης που σε αντίθεση με την επιστήμη ευνοείται από τις μεταμοντέρνες πρακτικές που έχουν καταργήσει τα όρια μεταξύ των επιμέρους τεχνών, οδηγώντας στη διαμόρφωση έργων πολυαισθητηριακού χαρακτήρα.

Η ΥΙΟΘΕΤΗΣΗ ΕΠΙΣΤΗΜΟΝΙΚΩΝ ΜΕΘΟΔΩΝ ΑΠΟ ΤΟΝ ΚΑΛΛΙΤΕΧΝΙΚΟ ΚΟΣΜΟ

Η Επανάσταση του Μοντερνισμού συμπίπτει με τη μετάβαση από μια ευρύτατη πολιτισμική περίοδο, στην οποία κυριαρχούσαν θεοκρατικές αντιλήψεις, στη νέα επιστημονική εποχή, κατά την οποία επιστήμη και τεχνολογία άλλαξαν ριζικά τον τρόπο που ο δυτικός άνθρωπος αντιλαμβάνεται την πραγματικότητα (Gambwell, 2002). Το σημαντικότερο στοιχείο που αλλάζει κατά το δεύτερο μισό του 19ου αι. στη ζωγραφική είναι η μετατροπή της από πεδίο απεικόνισης μέσα από συμβατικούς παραδοσιακούς τρόπους, σε πεδίο διαρκούς πειραματισμού. Η έννοια του πειράματος προέρχεται από τις φυσικές επιστήμες (Gillispie, 1994) που αναπτύσσονται ραγδαία κατά τον 19ο αι., καθιστώντας το πείραμα ως καθοριστικό εργαλείο της ερευνητικής δουλειάς. Καλλιτέχνες του δεύτερου μισού του αιώνα, με κατεξοχήν τους Ιμπρεσιονιστές, τους Πουαντιγιστές και τον Σεζάν, επηρεασμένοι από την επιστήμη που διαμορφώνει το πλαίσιο σκέψης της εποχής, αντιλαμβάνονται την καλλιτεχνική πράξη ως διαδικασία πειραματισμού με σκοπό την επαλήθευση επιστημονικών υποθέσεων με εικαστικά μέσα. Η τέχνη πάντα εξελισσόταν μέσα από πειραματισμούς, οι οποίοι όμως είχαν καθαρά πρακτικό προσανατολισμό. Όπως σωστά αναφέρει ο E. Gombrich (2002) δανειζόμενος τον όρο από τον φίλο του και φιλόσοφο K. Popper, η τέχνη εξελίσσεται μέσα από το μοντέλο *trial-error* (δοκιμασίας-λάθους). Τώρα όμως για πρώτη φορά ο πειραματισμός στην τέχνη έχει θεωρητική αφετηρία και δεν αφορά στην εξέλιξη τεχνικών ή υλικών, αλλά στην απάντηση ερωτημάτων που αφορούν την οπτική μας αντίληψη και τους τρόπους που προσλαμβάνουμε την πραγματικότητα. Εκεί βρίσκεται η μεγάλη επανάσταση στη ζωγραφική, η οποία θα εξελιχθεί μέσα από τέτοιες πειραματικού χαρακτήρα προσεγγίσεις σε όλο τον 20ο αι.: ο μοντέρνος καλλιτέχνης ακολουθεί την επιστημονική μέθοδο, ξεκινώντας από μια υπόθεση και επιχειρώντας να δείξει την ισχύ της μέσα από το πείραμα που είναι το ίδιο το έργο τέχνης.

Στο πνεύμα αυτό διαμορφώθηκαν και εξελίχθηκαν τα μεγάλα κινήματα τέχνης ιδιαίτερα του πρώτου μισού του 20ου αι.: εκτός από τους Ιμπρεσιονιστές και τους Μετα-ιμπρεσιονιστές που επηρεάστηκαν από τις θεωρίες για την οπτική αντίληψη των Helmholtz, Chevreul και Maxwell (Gambwell, 2002), οι Κυβιστές στηρίχθηκαν σε θεωρίες από τους χώρους της φυσιολογίας και της μη ευκλείδειας γεωμετρίας (Gambwell, 2002), οι Σουρεαλιστές στις φροϋδικές θεωρίες της ψυχανάλυσης και του αυτοματισμού (Gambwell, 1999), οι Αμερικανοί Αφηρημένοι Εξπρεσιονιστές στην αναλυτική ψυχολογία του Jung (Sedivi, 2009) και οι Εννοιακοί καλλιτέχνες στις στρουκτουραλιστικές ψυχαναλυτικές θεωρίες του Lacan (Gambwell, 1999). Παρά την άμεση ωστόσο επίδραση της επιστήμης στην τέχνη, πάντα υπήρχαν σαφή όρια μεταξύ αυτών των πνευματικών δραστηριοτήτων. Η κατάσταση πήρε νέα τροπή, όταν καλλιτέχνες θέλησαν να εισχωρήσουν στο επιστημονικό εργαστήριο και να δουλέψουν δίπλα στους επιστήμονες, αναιρώντας ακόμη και τις πρακτικού χαρακτήρα οριοθετήσεις που τοποθετούσαν κάθε εργασιακή ομάδα στον δικό της εργασιακό χώρο.

Χαρακτηριστικό παράδειγμα είναι αυτό του γλύπτη Joe Davis που ανήκει στον χώρο των Βιο-καλλιτεχνών (Myers, 2015). Ο Davis δούλεψε για πρώτη φορά σε επιστημονικό εργαστήριο στο Ιατρικό Κέντρο του Πανεπιστημίου του Cincinnati και στο Bell Telephone Laboratories, Murray Hill, NJ, όπου χρησιμοποίησε το λέιζερ ως καλλιτεχνικό εργαλείο. Το 1981 εντάχθηκε στο Κέντρο Προηγμένων Οπτικών Μελετών του MIT ως επισκέπτης ερευνητής, ενώ το 1992 άρχισε να ψάχνει για σπόρους ανθεκτικών βακτηριδίων ώστε να επιβιώνουν στο διάστημα. Τα βακτηρίδια αυτά προέκυψαν μέσα από τη σύνθεση βακτηριδίων *Escherichia Coli* και καλλιτεχνικά δουλεμένων στοιχείων του DNA σε κωδικοποιημένη μορφή. Στη συνέχεια ο Davis τα ενσωμάτωσε σε τρυβλία του Petri που τοποθέτησε μέσα σε ψυγείο με γυάλινες πόρτες, φιλοτεχνώντας έτσι έργο τέχνης που εξέθεσε στο Διεθνές Φεστιβάλ Τέχνης στο Linz της Αυστρίας. Μαζί με αυτό εξέθεσε και την κωδικοποιημένη οπτική εικόνα του συνθετικού DNA με την ονομασία *Microvenus* (Davis, 1996) που την ερμήνευσε συμβολικά ως τη γυναικεία γεννητικότητα. Το *Microvenus* δεν είναι παρά ένα έργο τέχνης που υπηρετεί καλλιτεχνικούς σκοπούς, αλλά ταυτόχρονα αποτελεί και προϊόν επιστημονικής εργαστηριακής έρευνας. Για να ενσωματωθεί μια εξω-βιολογική πληροφορία σε DNA, χρειάστηκε να κατασκευαστεί γλώσσα που να μετατρέπει βάσεις δεδομένων σε βιολογική μορφή. Για πρώτη φορά το DNA της *Microvenus* δημιουργήθηκε το 1986 στο εργαστήριο του John Beckwith στην Ιατρική Σχολή του Harvard, ενώ η επεξεργασία του με σκοπό την απαλλαγή του από ανεπιθύμητα προϊόντα έγινε στο τέλος της ίδιας χρονιάς στο εργαστήριο του Hatch Echol στο UC Berkeley. Η αλληλουχία ή η μετάφραση του έγινε το 1990 στο MIT. Τα δεδομένα του περιγράφουν μια εικόνα που μοιάζει με ρουνικό γράμμα Ψ, σύμβολο της ζωής και του θηλυκού γένους που επίσης χρησιμοποιείται για να απεικονίσει ηλεκτρονικά κυκλώματα. Όπως αναφερόταν σε συνοδευτικό σημείωμα στην έκθεση, πρόκειται για ένα σύμβολο που έχει χρησιμοποιηθεί περισσότερο από κάθε άλλο, ακόμη και από κάθε γράμμα όλων των αλφαβητών παγκοσμίως. Κατά αυτή την έννοια συνδέεται άμεσα με τον ανθρώπινο πολιτισμό και έτσι αποτελεί τον πιο αντιπροσωπευτικό τρόπο επικοινωνίας μας με εξωγήινη ζωή: εκατοντάδες τρισεκατομμύρια *Microvenus* μπορούν να χωρέσουν σε δοχείο πέντε λίτρων, τα οποία με την πρόσθεση συγκεκριμένων βακτηριδίων μένουν αναλλοίωτα σε ακραίες συνθήκες για πολύ μεγάλο χρονικό διάστημα.

Ο Davis χρησιμοποίησε επιστημονικά ερευνητικά δεδομένα και δούλεψε με επιστημονικές μεθόδους, υπηρετώντας όμως πάντοτε καλλιτεχνικές προθέσεις. Αν και η *Microvenus* είναι αποτέλεσμα επιστημονικής ερευνητικής δουλειάς, στα χέρια του Davis μετατράπηκε σε έργο τέχνης λειτουργώντας ως φορέας συμβολικών αξιών¹. Παραδοσιακά η επιστήμη είναι ουδέτερη και αξιολογικά

¹ Ο ίδιος ο Davis (1996) ερμηνεύει το συγκεκριμένο έργο και το εγχείρημα επικοινωνίας με εξωγήινη ζωή, ως προσπάθεια του ανθρώπου να κατανοήσει πρωτίστως τον εαυτό του: «By sending messages to extraterrestrial intelligence, human beings are importantly engaged in a search for

ανεξάρτητη, σε αντίθεση με την τέχνη που συνδέεται οντολογικά με ανθρώπινες αξίες: αντικείμενα που κατασκευάστηκαν με συγκεκριμένη πρόθεση και σκοπό αλλάζουν ταυτότητα από τη στιγμή που τα αναδεικνύει ο καλλιτέχνης σε έργα τέχνης με αξιακό περιεχόμενο.

Ως δεύτερη περίπτωση που καταδεικνύει ακύρωση των ορίων μεταξύ επιστημονικής και καλλιτεχνικής δουλειάς εξετάζονται τα δρώμενα της Γαλλίδας καλλιτέχνιδος Orlan που ξεκίνησαν το 1990 με τη μορφή πλαστικών εγχειρήσεων στο πρόσωπο της (Gemtou, 2011). Φωτογραφίες, μαγνητοσκοπήσεις, αλλά και άλλα στοιχεία του χειρουργείου, όπως η ματωμένη ποδιά της χειρουργού, εκτίθεντο στη συνέχεια ως έργα τέχνης. Ένα από τα βασικά αιτήματα της Orlan ήταν να αναδείξει το δέρμα ως το ψευδαισθησιακό όριο μεταξύ εσωτερικού κόσμου που είναι ασταθής και ευμετάβλητος και της εξωτερικής όψης που λόγω του δέρματος μοιάζει περισσότερο σταθερή και ισορροπημένη: μόνο με την παραβίαση του δέρματος, το σώμα μπορεί να αποκαλύψει τον πραγματικό του χαρακτήρα. Παρά την άμεση εμπλοκή του πλαστικού χειρουργού, οι Μεταμορφώσεις της Orlan είναι ένα καλλιτεχνικό έργο που ταιριάζει απόλυτα με τους σύγχρονους ορισμούς της τέχνης ως της πνευματικής δραστηριότητας που μέσα από την ελεύθερη έκφραση διαμορφώνει νέα πλαίσια σκέψης. Όπως και στην περίπτωση του Davis, η χρήση επιστημονικών δεδομένων δεν αναιρεί τον καλλιτεχνικό χαρακτήρα του.

Διαφορετικά ωστόσο αξιολογείται ο ρόλος του πλαστικού χειρουργού που σε αυτή την περίπτωση ταυτίστηκε με το μέσο της καλλιτέχνιδος: η χειρουργική επέμβαση δεν μπορεί παρά να αποτελεί εφαρμογή εμπειρικών δεδομένων που έχουν καθιερωθεί και θεσμοθετηθεί στη χειρουργική κοινότητα και είναι αποτελέσματα συστηματικής επιστημονικής δουλειάς. Η ιατρική σε όλες τις εκφάνσεις της είναι μια εμπειρική επιστήμη που χρησιμοποιεί ως μεθοδολογικά της εργαλεία οντολογικές-περιγραφικές προτάσεις χωρίς αξιακό περιεχόμενο. Η αξιολόγηση των αιτημάτων της Orlan – που είχαν καλλιτεχνικό και όχι θεραπευτικό σκοπό - θα πρέπει να εκλαμβάνεται ως μετα-επιστημονική δραστηριότητα, στο πλαίσιο της οποίας οι χειρουργοί λειτούργησαν κυρίως ως κοινωνικά και ηθικά υποκείμενα. Το πλαίσιο της επιστημονικής τους δουλειάς έχει τα όρια του στο σχεδιασμό και την πραγματοποίηση της εγχείρησης, αλλά και την παρακολούθηση της μετεγχειρητικής πορείας της Orlan, πάντα με επιστημονικά ιατρικά κριτήρια.

themselves. They must first reveal themselves to themselves before they can reveal themselves to anyone else. This has not only been a central dilemma in the search for extraterrestrial intelligence, but it has also been an essential element of art, history, psychology, and classical philosophy», σ. 70-74.

Η ΑΝΑΓΚΑΙΟΤΗΤΑ ΥΠΑΡΞΗΣ ΟΡΙΩΝ ΣΤΗΝ ΕΠΙΣΤΗΜΗ

Η επιστημονική δουλειά θα πρέπει πάντα να διαφυλάσσει τα όρια της και να μην εμπλέκεται σε οντολογικό επίπεδο με την καλλιτεχνική: αν οι χειρουργοί λειτουργούσαν με την ελευθερία που χαρακτηρίζει τους καλλιτέχνες, το πιο πιθανό θα ήταν η Οrian να μην επιβίωνε. Μέσα από την ίδια οπτική είναι λάθος να χαρακτηρίζονται καλλιτέχνες ως επιστήμονες, από το γεγονός και μόνο ότι νωρίτερα από την επιστημονική έρευνα είχαν θίξει παρόμοια θέματα. Πρόκειται για πρακτική που απαντάται κάποιες φορές στη βιβλιογραφία, υπηρετώντας μάλλον σκοπούς ρητορικού εντυπωσιασμού.

Για παράδειγμα, ο Jonah Lehrer (2008) χαρακτηρίζει τον Proust ως νευροεπιστήμονα από το γεγονός ότι στον πρώτο τόμο του επτάτομου βιβλίου του Αναζητώντας τον χαμένο χρόνο (1913-1927), περιγράφει με μεγάλη λεπτομέρεια εμπειρία ακούσιας αναπόλησης ανάμνησης από τα παιδικά του χρόνια, που την προκάλεσε η γεύση μπισκότου βουτηγμένου στο τσάι. Ο Lehrer συγκρίνει την περιγραφή του Proust με την έρευνα στο επιστημονικό εργαστήριο του νευροεπιστήμονα Eric R. Kandel² που αφορά τόσο στους μοριακούς μηχανισμούς που καθορίζουν τη μνήμη όσο και στα ερεθίσματα που προκαλούν την ανάκληση της.

Παρόμοια, ο Jean Carey (2012) αποκαλεί τον ζωγράφο Franz Marc ηθολόγο, παρουσιάζοντας τον ως πρόδρομο του νεότερου επιστημονικού κλάδου της ηθολογίας, ο οποίος υφίσταται από τη δεκ. του 1970 και έχει ως αντικείμενο του τη μελέτη της συμπεριφοράς των ζώων, συνδυάζοντας εμπειρικές και ερμηνευτικές μεθόδους που προϋποθέτουν τη βιωματική μετάθεση του ερευνητή στη συνείδηση του ζώου. Είναι γεγονός ότι τέτοιου είδους προσεγγίσεις στην ψυχή των ζώων πραγματοποιούσε ήδη ο Marc από τη δεκαετία του 1930, όταν ακόμη στον επιστημονικό χώρο υπήρχαν δύο διακριτές σχολές με αυτό το αντικείμενο, με την πρώτη να χρησιμοποιεί αυστηρά εμπειρικές και τη δεύτερη καθαρά ανθρωπομορφικές μεθόδους. Παρά ταύτα ο Marc, αν και είχε κοινές μεθόδους με τους μεταγενέστερους ηθολόγους, δεν παύει να είναι καλλιτέχνης που εκφράζεται μέσα από συγκεκριμένη εικαστική γλώσσα (Gemtou, 2016).

Η επιστήμη ως η πνευματική δραστηριότητα που στοχεύει στη διυποκειμενική αλήθεια, την εξήγηση του κόσμου και την αύξηση του πληροφοριακού μας δυναμικού οφείλει να κινείται μέσα στα συγκεκριμένα πλαίσια που την ορίζουν και τη διακρίνουν από άλλες πνευματικές δραστηριότητες. Επίσης, οι εσωτερικές διακρίσεις μεταξύ εμπειρικών, δεοντολογικών και ανθρωπιστικών επιστημών είναι απαραίτητες για τη σωστή ταξινόμηση και διερεύνηση της προσλαμβάνουσας γνώσης.

² Ο E.R. Kandel είναι επιμελητής του Principles of Neural Science, που αποτελεί σημαντικό εισαγωγικό εγχειρίδιο στις Νευροεπιστήμες. Το 2006 δημοσίευσε το In Search of Memory: The Emergence of a New Science of Mind, ενώ έχει ασχοληθεί με τη σχέση τέχνης και επιστήμης, μεταξύ άλλων στα: The Age of Insight: The Quest to Understand the Unconscious in Art, Mind, and Brain, from Vienna 1900 to the Present και Reductionism in Art and Brain Science: Bridging the Two Cultures.

Η ΑΠΟΛΥΤΗ ΕΛΕΥΘΕΡΙΑ ΩΣ ΟΝΤΟΛΟΓΙΚΟ ΧΑΡΑΚΤΗΡΙΣΤΙΚΟ ΤΗΣ ΤΕΧΝΗΣ

Σε αντίθεση με τον επιστήμονα, είναι απολύτως θεμιτό για τον καλλιτέχνη να βρίσκει πηγές έμπνευσης, μεθόδους δουλειάς και εκφραστικά εργαλεία σε όλους τους πνευματικούς και κοινωνικούς τομείς. Ο περιορισμός των ορίων στο εσωτερικό του καλλιτεχνικού συστήματος που οδήγησε στην ένωση περισσότερων μορφών έκφρασης υπήρξε ιδιαίτερα ευεργετικός για την τέχνη στο σύνολο της. Ήδη από το Bauhaus προωθήθηκε ταύτιση των παραδοσιακών καλών και εφαρμοσμένων τεχνών, ενώ η μεταμοντέρνα τέχνη χαρακτηρίζεται από τη συνεργασία και την ταύτιση επιμέρους τεχνών με την ανάδειξη πολλαπλών και σημαντικών κινήματων και νέων μορφών πολυαισθητηριακής έκφρασης.

Στο ίδιο ευνοϊκό για την τέχνη πλαίσιο θα πρέπει να ενταχθεί και η θεωρία της υποδοχής (Holub, 1992; Jauss, 1982) που αναδεικνύει την καθοριστική σημασία του αποδέκτη στη νοηματοδότηση του καλλιτεχνικού έργου. Δημιουργός, καλλιτεχνικό έργο και αποδέκτης δεν εκλαμβάνονται πλέον ως ανεξάρτητες μονάδες, αλλά ταυτίζονται σε επίπεδο πνευματικών οριζόντων, αναδεικνύοντας ακόμη περισσότερο το στοιχείο της ελευθερίας ως το θεμελιώδες οντολογικό χαρακτηριστικό του κόσμου της τέχνης. Σε μια προέκταση της θεωρίας της υποδοχής από ερμηνευτική σε οντολογική, θα μπορούσαμε να υποστηρίξουμε ότι ο ενημερωμένος αποδέκτης έχει τη δυναμική ακόμη και να αναδείξει σε καλλιτεχνικό ένα έργο που έχει δημιουργηθεί αρχικά με διακριτή πρόθεση.

Στο άρθρο της, *Art without artistic intention: The case of "Planking"*, η E. Gemtou (2015) ορίζει ως έργο τέχνης ένα δημόσιο συλλογικό παιχνίδι, το Planking, που επινοήθηκε στη Μ. Βρετανία (Meltzer, 2011) και έκτοτε έγινε μόδα παγκοσμίως. Πρόκειται για την αυθόρμητη και ξαφνική διαμόρφωση άκαμπτων στάσεων του σώματος των εμπλεκόμενων που θυμίζουν σανίδες (=planks) σε διάφορους και περίεργους ενίοτε δημόσιους χώρους. Οι στάσεις φωτογραφίζονται και αναρτώνται στο διαδίκτυο. Με αναφορά σε διάφορες οντολογικές θεωρίες (Carroll, 1999) για την τέχνη, η συγγραφέας επιχειρηματολογεί υπέρ της ανάδειξης του Planking σε καλλιτεχνικό δρώμενο, ενώ κάνοντας χρήση της θεωρίας του ιστορικού ορισμού (Levinson, 1979, 1989, 1993), το εντάσσει στον χώρο της εννοιακής τέχνης.

Σε θεωρητικό επίπεδο, τα δρώμενα του Planking γίνονται αντιληπτά ως ένα είδος ready-made, καθώς και στις δύο περιπτώσεις κυριαρχεί η ανάγκη κατάρτησης της παραδοσιακής μοναδικότητας του καλλιτεχνικού έργου που αποκτά αξία σε συνάρτηση πάντα με τον δημιουργό του. Στο Planking δεν υπάρχει ένας δημιουργός, αλλά εκατοντάδες εκτελεστές μιας ιδέας που αποκτά αξία μέσα από την κατανόηση της από τον εκάστοτε αποδέκτη. Σε εικονογραφικό επίπεδο, τα δρώμενα Planking θα πρέπει να ενταχθούν στην παράδοση που μετατρέπει το σώμα του καλλιτέχνη σε καλλιτεχνικό εργαλείο ή και αποτέλεσμα. Στο πλαίσιο της Body Art, προδρομικό έργο του Planking είναι το *Parallel Stress* (1970) του Dennis Oppenheim. Ο Oppenheim, θέλοντας να μεταφέρει το κέντρο του ενδιαφέροντος από το γλυπτό στον γλύπτη, αλλά και να διερευνήσει τις μορφές που παίρνει το σώμα σε ακραίες συνθήκες, χρησιμοποίησε τον ίδιο του τον εαυτό ως γέφυρα μεταξύ δύο τοιχίων.

ΕΠΙΛΟΓΟΣ

Κλείνοντας, είναι απαραίτητο να τονίσουμε ότι ο περιορισμός και η κατάργηση των ορίων που εκλαμβάνονται ως ευνοϊκά για την τέχνη δεν αφορούν σε ηθικά, νομικά ή και σε θέματα που άπτονται των δικαιωμάτων ανθρώπων και ζώων. Θεωρητικά και με βάση τους σύγχρονους ορισμούς της τέχνης, οι καλλιτέχνες είναι και πρέπει να είναι ελεύθεροι για να εκφράζονται με όποιο τρόπο και όποιο μέσο εκείνοι/ες επιθυμούν. Περιορισμοί ωστόσο υπάρχουν και πάντα θα υπάρχουν, εφόσον ζούμε σε ένα πολιτισμένο περιβάλλον με αρχές και θεσμούς. Οι περιορισμοί αυτοί όμως έχουν μετα-καλλιτεχνικό χαρακτήρα, δεν προέρχονται από το καλλιτεχνικό σύστημα, αλλά αφορούν στους καλλιτέχνες ως ανθρώπινα και κοινωνικά όντα.

Το ίδιο ισχύει και για την επιστήμη που οφείλει να είναι αξιακά ουδέτερη, και συνεπώς ηθικές, αισθητικές και κοινωνικές παράμετροι αφορούν τους επιστήμονες μόνο σε μετα-επιστημονικό επίπεδο. Στην περίπτωση ωστόσο της επιστήμης (σε αντίθεση με την τέχνη), υπάρχουν αυστηροί και συγκεκριμένοι μεθοδολογικοί και εργαλειακοί περιορισμοί που είναι στενά συνυφασμένοι με την ίδια της την οντολογία. Στο πνεύμα αυτό η επιστημονική δουλειά οφείλει να διαφυλάττει τα όρια της από άλλους πνευματικούς χώρους με διακριτά μεθοδολογικά εργαλεία, ενώ η τέχνη έχει τη δυναμική να εισχωρεί στον επιστημονικό χώρο. Ακόμη όμως και στις περιπτώσεις που καλλιτέχνες έχουν εργαστεί μαζί ή δίπλα σε επιστήμονες ακολουθώντας τις δικές τους μεθόδους, ο σκοπός της δουλειάς τους είναι καλλιτεχνικός, καθώς τελικά παράγουν έργα με αξιακό ή συμβολικό περιεχόμενο.

ΒΙΒΛΙΟΓΡΑΦΙΑ

- Carey, J. (2012). *Franz Marc as an Ethologist*, Florida: University of South Florida.
- Carroll, N. (1999). *Philosophy of Art. A Contemporary Introduction*, London & New York: Routledge.
- Γέμτος, Π. (2004). *Μεθοδολογία των Κοινωνικών Επιστημών*, Δ' διευρ. εκδ., τομ.1, Αθήνα: εκδ.Παπαζήση, 499-517.
- Davis, J. (1996). *Microvenus. Art Journal*. 55 (1). Contemporary Art and the Genetic Code, 70-74.
- Episteme and Techne, *Stanford Encyclopedia of Philosophy*, 1η δημ. 11 Απρ. 2003, <https://plato.stanford.edu/entries/episteme-techne> (12 Ιουν. 2017).
- Gambwell, L., ed, (1999). *Dreams 1900-2000. Science, Art and the Unconscious Mind*, New York: Cornell University Press, 31-41 & 45-49.
- Gambwell, L. (2002). *Exploring the Invisible. Art, Science and the Spiritual*. Princeton and Oxford: Princeton University Press, 66-75, 111-121, 134-140.
- Gemtou, E. (2011). 'Medicine for Art's Sake'?: A Philosophical Study on the Relationship between Medicine, Art and Science. *Rupkatha. Journal on Interdisciplinary Studies in Humanities* 3 (4), 639-650. http://rupkatha.com/V3/n4/19_Relationship_Medicine_Art_Science.pdf (12 Ιουν. 2017).

- Gemtou, E. (2015). Art without Artistic Intention: The Case of “Planking”. *Anistoriton Journal*. 14, 1-10. http://www.anistor.gr/english/enback/2014_1a_Anistoriton.pdf (12 Iou. 2017).
- Gemtou, E. (2016). Art and Science in Franz Marc’s Animal Iconography, *Rupkatha. Journal on Interdisciplinary Studies in Humanities*. 8 (1). DOI: <http://dx.doi.org/10.21659/rupkatha.v8n3.02>, Full Text: http://rupkatha.com/V8/n3/02_Franz_Marc_Animal_Iconography.pdf (12 Iou. 2017).
- Gillispie, Ch.C. (1994). Στην κόψη της αλήθειας. *Η εξέλιξη των επιστημονικών ιδεών από τον Γαλιλαίο έως τον Einstein*. Αθήνα: Μορφωτικό Ίδρυμα Εθνικής Τραπέζης, 78-81.
- Gombrich, E. (2002). *Art and Illusion. A Study in the Psychology of Pictorial Representation*. London: Phaidon, 76.
- Holub, R.C. (1992). *Crossing Borders: Reception Theory, Poststructuralism, Deconstruction*. Madison: U of Wisconsin P.
- Jauss, H.R. (1982). Toward an Aesthetic of Reception. Trans. T. Bahti. Minneapolis: U of Minnesota P.
- Lehrer, J. (2008). *Proust was a Neuroscientist*. USA: Mariner books.
- Levinson, J. (1979). Defining Art Historically. *British Journal of Aesthetics*. 19, 232-250.
- Levinson, J. (1989). Refining Art Historically. *Journal of Aesthetics and Art Criticism*. 47, 21-33
- Levinson, J. (1993). Extending Art Historically. *Journal of Aesthetics and Art Criticism*. 51, 411-423.
- Meltzer, T. (2011). Planking: A brief History. *The Guardian*. guardian.co.uk, Monday 16 May.
- Myers, W. (2015). *BioArt. Altered Realities*, London: Thames & Hudson.
- Sedivi, A.E. (2009). *Unveiling the Unconscious: The Influence of Jungian Psychology on Jackson Pollock and Mark Rothko*. Undergraduate Honors Thesis. Paper 284. <http://publish.wm.edu/cgi/viewcontent.cgi?article=1293&context=honorsthesis> (12 Iou. 2017).

ABOUT THE AUTHOR

Eleni Gemtou is an Assistant Professor at the Department of Philosophy and History of Science (National & Kapodistrian University of Athens), where she teaches both undergraduate and postgraduate courses on Art History, Art & Science and the Methodology of Art History. She holds an MA in Archaeology from the Ludwig Maximilian University of Munich as well as a PhD degree in Art History from the National & Kapodistrian University of Athens. Her academic and research interests mainly focus on the relationship between Art and Science through both historical and philosophical approaches. She also investigates the methods used by Art Historians, as well as the relationship between the visual arts and other art forms. She publishes papers in international and Greek journals and also participates in conferences.

ERIK ZEPKA
Empire State University

XOXOX

ABSTRACT

x-o-x-o-x.com (xoxox.biz, xoxlabs.com, kisses and spam, xoxox) is an ongoing technoscientific project that merges the social concerns of new fabricated environments with a critical engagement in their economies. The pornologic of uploaded surveillance culture, the viral person of the anonymous and corporate - xoxox is a recursive and expanding program that takes the mediated everyday and juxtaposes it with the synthetic flood that has become our commons.

At the root of the technoscientific question is one of types of knowledge, of the situated and empirical methodology in relation to it, and what the materials and politics are that result. The universal mediator is the body, traversing different environments, sciences, and cultural exchanges. It's here that the limit point of knowledge, the rupture that forces translation from technical epistemes to analytic, observational or reflective ones. The liminal experience, the transgressive moment, the disablist blunder, the instancia crucis - the assemblage of work revolves around these frame-shifting questions, these moments of change that can take a system and give it something different.

xoxox is a series of computational, immaterial concepts and projects that materialize in varying ways - projecting, printing, rematerializing, how a computer redoes social space, how its screen remakes rooms. Media traces run throughout rooted in biological morphology , and digital game space is as presented with organismal mutations as its physical transcreations. What world does technoscience create, and what does its crises, its fictions and hybrid offspring reveal about its own structure and its others

IDENTITY PROTOCOLS

Artists these days don't know how to express what they're doing. They don't know how to make it relatable to the public. How do you expect to be a good artist if you don't have an elevator pitch? I'm so embarrassed when I meet an artist that thinks they're serious and they don't even have a slogan lol. Who do you think you're fooling? Anything that's worthwhile can be expressed in ten words or less.

The market brings back the possibility of clarity, honesty, of telling things like they are - if you don't want to own it, what could it possibly be worth? The perfect product is invisible. Invisible products can be used anywhere and weigh nothing. Ideas for the inhuman generation that has yet to appear on camera. That's right, off the grid. Untouchable and constantly revolting so whatever's in power no one's capitulating. In fact no one is doing anything.

Just don't do it. Nike almost had it. If your existence matters, appearance is superfluous. Picking the right brand shows that you realize that arbitrariness - that you're in touch with it. Words, images, these mean nothing - so please pick the right ones.

COMPREHENSIVE MALFUNCTION

When does a comprehension structure become empty, just the structure itself? Conversely this asks when is it with content, when are its method and categories useful and helpful. Put a slightly different way, when does the language or methods used to describe something become separated from what is being discussed? So much of our knowledge today is dependent on a network of specialists communicating with one another - how we can know something's real is increasingly dependent on the reliability of how information is transmitted - to make sense of it, more and more scrutiny and attention has to be paid to the media used.

Following this, it might be possible that there's an aesthetic of communicative structures, an aesthetic of formal explanation and technoscientific making. It might be of value for art to play with the many mechanisms that transmit useful or useless knowledge to someone, that they must reckon with before arriving at a personal and experimental space where they can test things for themselves. If art and arts discourse is a place to provide a reflective space for personal and cultural problems that arise as a result of how we need to get by, then it might be useful as geared towards an analysis/reflection/playground for the technical and informational structures we depend on to stay up to speed. By playing with new technological tools, with influential but sometimes mystified apparatuses and concepts, with the terms and logics of new media creation, it might be that new questions and ways of engaging arise. Most importantly by fudging with the failures of machines and formal systems, we can explore our own biological limitations, our own disabilities and shortcomings, the map which shows where we thrive and are rendered useless. Still here, still attempting to learn, but maybe not really getting anywhere. An aesthetics of organismal and formal insufficiency.

Pores and Cross-Sections

whatever remains we need to account for what's in prisms or whether (once extinguished

you absence meant so much to me (clone jeer)
the crassist sextets and spindle succeed (fissionaries)

light split - peers into the other entity which hadn't registered anything by law

nothing is in order anymore - pieces are formed by joining together, who joins
and when (who doesn't)
orders that form in relation to some ideas (sound, colour, personal progression,
continuity of place, event recursion, the lack of all of these ever)

inaccurate until (remember how you thought i was alive still until acquiesce

listless submit (let me know if there's anything you can do for me)

re-establish sections in a way that isn't limited by your dry and chapped skin,
after the apocalypse the unmoisturized will be the first to go

think of all the fluids that leak out of you - it's totally normal, it's just capitalism
demonstrating how power works without needing any kind of text because you
know what life doesn't need texts

but leakage is generally unstoppable - pick whatever categorical ontology you
like I guarantee leakage

finger nail imperatives (become someone else and then we can talk)

the cripple of swallow, smoked, ineligible

things come together and some of the story gets told but a lot of it doesn't
(some of this a function of whatever, other aspects a function of the particular
whatevers we've been dealing with more recently than the older whatevers)

calculous - probes and insurrections

hunger is a luxury reserved for the visualized

construction is done with tools passed down from generations of aliens that left
some notes but then lost them in the ocean

there's either a lot of theory or almost none in the ocean

inanimate, blurting (whose never met any resurrected

last less flight wist

ABOUT THE AUTHOR

Erik Zepka is an internationally published and exhibited artist, scientist, curator and author. Whether as medical researcher, professor, media experimenter or poet they create platforms to facilitate discussion on interdisciplinary topics. They are currently based in the Matrix.

Technoviduality and the post-truth phenomenon: truth as a technological taboo.

ABSTRACT

During the course of 21st century the connection between truth and human consciousness has been signaled by the phenomenon of post-truth and a technovidual form of subjectivity that conceives parts of its life and freedom as inextricable functions of machines and interconnected informational devices. This new technovidualized environment regenerates the post-truth phenomenon with a growing insensibility towards the conditions of verifiability or refutation of informational validity, by emphasizing emotionally upon facts and based on personal belief. The latter acquires in the internet era dynamics of broadcast, dispersion and reproduction of information, while cyberspace -contrary to physical reality- represents a space of personalized realm which is established as such by the desires, the ideas and the social surroundings of each user.

Hence, there is an argument that connects the post-truth discussion with the technovidual, as a form of subjectivity which is corporeally, cognitively and mentally connected through embodied personalized devices (mobile phone, digital tablets, laptops, VR and AR gaming), to digital materiality, which is the current technological capacity of retrieving, distributing and storing information. In specific, we are living a transition from the ideological and discursive realm of modernity, where communication has been a face-to-face phenomenon, to a post-ideological and monologic communication, where contact and discussion over the public realm becomes private in cyberspace and therefore monologic since -I will argue- cyberspace is by definition adapted, created and administrated by each user/person. This new condition, i.e., a personalized space in cyberspace, re-shapes the face-to-face dialogue to a monologic gazing of the screen (screengaze), between a person and the cyberspace s/he engages with in a videographic sphere such as the internet.

The questions to be asked consequently, concern the development of an unconscious but personalized homogeneity that takes place in the digital "microcosm" through which the technovidual of the 21st century apprehends the physical "megacosm". Primarily, to which extent the aforementioned condition reinforces the concept of post-truth and in which ways the latter threats as a form of transgression, but also as a form of taboo, the concept of truth which is

first and foremost the epistemic a priori for all cognitive sciences and certainly of philosophy itself? In order to answer one needs to describe the main features of technovidual subjectivity and explain why and through which paths it develops monologically in a world which is more diverse and interlaced than ever. Is post-truth the hypermodern condition of an informational chaos or it represents the next step from individualistic to technovidualistic freedom?

KEYWORDS

post-truth, technovidual, cyberspace, fact, information

ΕΙΣΑΓΩΓΗ

Ο όρος «μετα-αλήθεια», που ανακηρύχθηκε φέτος από το λεξικό της Οξφόρδης ο δημοφιλέστερος της χρονιάς, απασχολεί τόσο τον χώρο της πολιτικής (post-truth politics), όσο και την επιστημολογία, η οποία ερευνά τους όρους υπό τους οποίους η γνώση καθίσταται εφικτή ως τέτοια, δηλαδή σαν πεποίθηση για κάτι που ανακτά δυναμική μέσα από μία αντίστοιχη λογική επιχειρηματολογία με προτεραιότητα στην ισχύ των γεγονότων φθάνοντας έτσι στην αλήθεια. Ο όρος «μετα-αλήθεια» ιδιαίτερα στην επιστημολογική του προέκταση, ανανεώνει το φιλοσοφικό ενδιαφέρον, καθώς για πρώτη φορά παρακάθεται δίπλα στο επιστημικό a priori της φιλοσοφίας που είναι η αλήθεια, χωρίς όμως να εκπροσωπεί το αντίθετό της, δηλαδή το ψέμα. Έτσι, η μετα-αλήθεια ως φαινόμενο κατά το οποίο «τα αντικειμενικά γεγονότα επιδρούν λιγότερο στη διαμόρφωση της κοινής γνώμης από ότι η επίκληση του συναισθήματος και της προσωπικής πεποίθησης» (Oxford lexicon 2017), εγκαινιάζει ένα νέο χώρο έρευνας για τη φιλοσοφία που αφορά στον τρόπο ανάπτυξης, τη σημασία, καθώς και τις συνέπειες που μπορεί να έχει η μετα-αλήθεια ως υπέρβαση των τυπικών λογικών κανόνων βάσει των οποίων σχηματίζεται και γίνεται αποδεκτή η επικοινωνία, δηλαδή οι κανόνες διατύπωσης και αποδοχής της αλήθειας. Υπέρβαση που πολλαπλασιάζεται ραγδαία μέσα από την ψηφιακή τεχνολογία και την αντίστοιχη ανθρωπολογία που απορρέει από αυτή, σχηματίζοντας εκείνο που θα περιγράψω περαιτέρω ως τεχνολογικό taboo.

ΠΡΟΣΩΠΟΤΕΧΝΙΚΟ ΥΠΟΚΕΙΜΕΝΟ ΚΑΙ ΑΛΗΘΕΙΑ

Θα ξεκινήσω αποσαφηνίζοντας την ορολογία που χρησιμοποιώ στον τίτλο και συγκεκριμένα από τον όρο «προσωποτεχνικό υποκείμενο» ή technovidual. Προσωποτεχνική μπορούμε να χαρακτηρίσουμε την υποκειμενικότητα που είναι σαρκικά, διανοητικά και ψυχικά συνδεδεμένη μέσα από ενσώματες προσωποποιημένες συσκευές (κινητό τηλ., ψηφ. ταμπλέτες, φορητός υπολογιστής, VR και AR οικοσυστήματα), με την ψηφιακή ύλη, δηλαδή με την παρούσα τεχνολογική δυνατότητα ανάκτησης, διανομής και αποθήκευσης της πληροφορίας. Επιχειρώντας να τοποθετήσουμε ανθρωπολογικά το

προσωποτεχνικό υποκείμενο θα λέγαμε ότι διαδέχεται το ατομοκεντρικό (individual), κατά τον ίδιο τρόπο που το τελευταίο διαδέχθηκε το υποκείμενο της αρχαίας εποχής, το πολιτειακό υποκείμενο (statevidual).

Εκείνο που διαφοροποιεί τα τρία αυτά ανθρωπολογικά πρότυπα μεταξύ τους είναι η εξέλιξη του τρόπου μέσω του οποίου αντιλαμβάνονται την ελευθερία τους. Θα χρησιμοποιήσω τρία παραδείγματα για να περιγράψω αυτές τις διαφοροποιήσεις. Ξεκινώ χρονολογικά, δηλαδή από το τελευταίο, με το πολιτειακό υποκείμενο (αρχαϊκή έως και μεσαιωνική εποχή), να διακρίνεται από την εναρμόνιση ανάμεσα στην προσωπική και την πολιτειακή ηθική, που ενοποιεί τα στοιχεία του οίκου και της πόλις. Αυτή η εναρμόνιση εγκαθιστά ένα περιβάλλον ταύτισης ανάμεσα στην ατομική και την πολιτειακή ελευθερία, πράγμα που συντελεί καθοριστικά στη σύσταση της αρχαίας δημοκρατίας. Για παράδειγμα στο πεδίο της κοινωνικής ζωής, ο Αριστοτέλης μας καλεί να μελετήσουμε εκείνους που επιδιώκουν την αλήθεια ή το ψεύδος (Αριστοτέλης 1934:1127a17–2). Η αρετή της αλήθειας εντοπίζεται στα Η.Ν., όχι ως μέσο ανάμεσα στην απατηλότητα και την καθολική ειλικρίνεια, αλλά ανάμεσα στην αλαζονεία και την ειρωνεία.

-Αλαζονεία-φιλαλήθεια-ειρωνεία (μετριοφροσύνη).

Η ιδέα της φιλαλήθειας είναι ταυτόσημη της έγκυρης πληροφορίας αναφορικά με τον εαυτό και την παρουσίαση του τελευταίου στο κοινωνικό περιβάλλον. Η φιλαλήθεια σχετίζεται έτσι με την κοινωνία ως μέγεθος που προκαλεί φήμη, υπόληψη, καταισχύνη ή ανυποληψία. Η κοινωνία, ως δημοκρατική έκφανση της πολιτείας αποτελεί με αυτόν τον τρόπο ένα πεδίο αντανάκλασης των αξιών και των στόχων του εαυτού. Η δελφική αρχή του «γνώθι σαυτόν», η αρετή της αυτογνωσίας σχηματίζεται στον Αριστοτέλη μέσα από την αρετή της αλήθειας. Αργότερα, στον 20ο αιώνα, ο Michel Foucault θα ερευνήσει την αυτογνωσιακή αυτή ανθρωπολογία μέσα από τη μελέτη των υπομνημάτων ως «επιμέλεια εαυτού», η οποία προαπαιτεί:

- την απόσυρση στον εαυτό
- την επαφή με τον εαυτό
- τη ζωή με τον εαυτό
- την επανάπαυση με τον εαυτό
- το όφελος από τον εαυτό
- τη διασκέδαση με τον εαυτό

Η φιλαλήθεια καθίσταται έτσι προϋπόθεση της ειλικρινούς σχέσης με τον εαυτό και τη δυνατότητα διαχείρισης και διακυβέρνησής του. Οι αρετές, όπως η φιλαλήθεια σχετίζονται με την κοινωνική σφαίρα και τη φήμη γιατί στην αρχαϊκή ανθρωπολογία η πολιτειακή και κοινωνική ζωή είναι αλληλένδετες με την προσωπική σφαίρα. Το πολιτειακό υποκείμενο συνίσταται στη διαχείριση του μέρους (δηλαδή του εαυτού), μέσω εκείνων των αρετών που αποτελούν εγγυητικό συστατικό της διακυβερνητικής δυνατότητας του όλου (πόλις). Το πολιτειακό υποκείμενο διέπεται συνεπώς από μία αυτοκατανόηση της ελευθερίας του που συνιστά: α. εναρμόνιση του μέρους με το όλο και β.

επέκταση των αρετών της πόλις μέσα στον οίκο, όπου η πρώτη αποτελεί τον εγγυητικό καθρέφτη της συνετής ζωής στον δεύτερο. Τι κρατούμε από αυτή την εξιστόρηση; Δύο πράγματα: α. ότι οι άνθρωποι αναπτύσσουν τεχνολογίες επικοινωνίας οι οποίες έχοντας έναν ενιαίο στόχο (την αλήθεια) αποτρέπουν την επικοινωνιακή Βαβέλ, και β. ότι η πρακτική κατανόηση της αλήθειας εκφράζεται στους αρχαίους μέσα από την εφαρμογή (φιλαλήθεια) και την εξάσκησή της πρωτίστως στον εαυτό (αυτογνωσία).

Η συνειδητοποίηση της μετάβασης σε ένα επόμενο ατομοκεντρικό πρότυπο υποκειμενικότητας καταγράφεται από τον Hegel στις διαλέξεις του για τη φιλοσοφία του Δικαίου και τη φιλοσοφία της Ιστορίας. Για τους Έλληνες, σημειώνει ο Hegel, η συνέχεια μεταξύ δημόσιας ηθικής και ιδιωτικής αρετής είναι τόσο εμφανής, ώστε οι κανόνες της δημόσιας ζωής να μπορούν να σκιαγραφήσουν «μία φυσική απεικόνιση των αρετών» (Hegel 19751: 114ff). Ωστόσο, για τον Hegel, το χριστιανικό δόγμα της σωτηρίας και της μεταθανάτιας ζωής, αποδομεί την ταύτιση ενικού και πληθυντικού, οδηγώντας τις αρετές σε καθεστώς βαθμιαίας απόσχισης από τη δημόσια σφαίρα, ενοποιώντας τις ατομικά με το θείο (Hegel 19752:159ff). Τελικά, καταλήγει ο γερμανός φιλόσοφος, η αναγέννηση των αρετών, μεταξύ των οποίων και της φιλαλήθειας, είναι ανέφικτη στη νεωτερική εποχή (κατά το αρχαιοελληνικό της πρότυπο), αφού στη νεωτερικότητα, η ελευθερία του υποκειμένου, τα ατομικά δικαιώματα, η ηθική υπευθυνότητα σε σκοπούμενες πράξεις και φυσικά το δικαίωμα στην κριτική, αποτελούν «τον στροφέα και το κέντρο της διαφοροποίησης μεταξύ αρχαιότητας και νεωτερικότητας» (Hegel 1967: §124).

Η πρακτική υιοθέτηση των παραπάνω στοιχείων μέσα στους δύο επόμενους αιώνες (19ο και 20ο), δημιουργεί φιλελεύθερες και δημοκρατικές τάσεις στο σύνολο των δυτικών κοινωνιών, απελευθερώνει τις πολιτικές σχέσεις από τις ηθικές και αναπτύσσεται μέσα από ένα ιδεολογικό, διαλογικό και διαπροσωπικό πρότυπο επικοινωνίας. Η συζήτηση και ο διαπροσωπικός διάλογος καθίστανται έτσι θεμελιακό τμήμα της ανθρώπινης καθημερινότητας, αποδεσμευμένα από κοινωνικούς περιορισμούς και ηθικές συστολές με την καθοριστική συμβολή της πολυεπίπεδης επιστημονικής ανάπτυξης. Ο συνδυασμός ατομοκεντρικών ηθικών επιδιώξεων σε ένα διαλογικό περιβάλλον θέσεων, αντιθέσεων και τελικά συνθέσεων, χαρακτηρίζει την ατομοκεντρική ή διαλογική υποκειμενικότητα (individuality) από τον 18ο μέχρι και τον 21ο αιώνα.

Σήμερα πλέον, μπορούμε να διακρίνουμε σημεία, ενδείξεις και γενικά χαρακτηριστικά μιας μετάβασης σε ένα τρίτο, επόμενο πρότυπο υποκειμενικότητας το οποίο ονομάζουμε προσωποτεχνικό (technovidual). Έτσι θα περιγράφαμε την υποκειμενικότητα που είναι σαρκικά, διανοητικά και ψυχικά συνδεδεμένη μέσα από ενσώματες προσωποποιημένες συσκευές (κινητό τηλ., ψηφ. ταμπλέτες, φορητός υπολογιστής και τεχνολογίες VR και AR), με την ψηφιακή ύλη, δηλαδή με την παρούσα τεχνολογική δυνατότητα ανάκτησης, διανομής και αποθήκευσης της πληροφορίας. Για πρώτη φορά μέσα από την ψηφιακή τεχνολογία η υλική και η σαρκική υποδομή ενσωματώνονται η μία στην άλλη, προσδίδοντας στο άτομο δυνατότητες εκφραστικής παρέμβασης και

αναδιανομής της πληροφορίας, καθώς μέσα από την παραπάνω ενσωμάτωση συγχρονίζονται η ανθρώπινη-φυσική με την ψηφιακή-τεχνητή οντολογία. Το κοινό χαρακτηριστικό όλων αυτών των ενσώματων συσκευών είναι η οθόνη. Εάν η βιομηχανική εποχή διακρίνεται συμβολικά και ουσιαστικά από την τεχνολογία του γραναζιού, εξάρτημα κεντρικό και απαραίτητο στη βιομηχανική ανάπτυξη, τότε η οθόνη αποτελεί ένα σύγχρονο ψηφιακό «γρανάζι», καθώς εξελίχθηκε με τη σειρά της σε κόμβο παρουσίας και αναδιανομής της πληροφορίας, από την κινηματογραφική της απαρχή, μέχρι την τωρινή μετατροπή της σε πολυμέσο.

Το ψηφιακό περιβάλλον που δεν είναι απλά αλφαβητικό, αλλά βιντεογραφικό (Stiegler 2009: 46), μέσα από τις ενσώματες αυτές συσκευές και με επίκεντρο την οθόνη, αναπτύσσει πλειάδα επικοινωνιακών δυνατοτήτων στη χρήση των οποίων συναινούμε συλλογικά σαν κοινωνίες (Searle, 1995), θεωρώντας ότι μας ενισχύουν σαν πρόσωπα (προσωποποιημένη τεχνολογία), κατά τον ίδιο τρόπο που τα ατομικά δικαιώματα υπήρξαν οι αιτίες για τις οποίες δεν θα μπορούσαμε ποτέ να επιστρέψουμε στον πολιτειακό εαυτό όπως προαναφέρθηκε παραπάνω από τον Hegel, καθώς αποτελούν νομικά, πολιτικά και κοινωνικά εργαλεία που βελτιώνουν τις δυνατότητες της ζωής μας.

ΜΕΤΑ-ΑΛΗΘΕΙΑ ΚΑΙ ΨΗΦΙΑΚΟ ΜΟΝΟΛΟΓΙΚΟ ΠΕΡΙΒΑΛΛΟΝ

Τα τελευταία δέκα χρόνια δύο είναι οι βασικές προσεγγίσεις σχετικά με το φαινόμενο της μετα-αλήθειας. Η πρώτη αναφέρεται στις ανθρωπολογικές και πολιτισμικές συνέπειες της ψηφιακής τεχνολογίας και της διεύρυνσης των συνεπειών μέσα από τις ενσώματες τεχνολογίες, ενώ η δεύτερη, στις αλλαγές των επικοινωνιακών στρατηγικών της πολιτικής στην παγκοσμιοποίηση με απώτερο στόχο την εννοιολογική αλλοίωση της αλήθειας.

Η πρώτη προσέγγιση εστιάζει στα ανθρωπολογικά γνωρίσματα της μετα-αλήθειας εντοπίζοντας ως κύρια χαρακτηριστικά:

- Τη βαθμιαία απορρόφηση του διαλογικού από το οθονικό στοιχείο (Screengaze), μέσα από τη διαρκή ενατένιση της οθόνης.

- Τη μετάθεση του διαλόγου του ατομοκεντρικού υποκειμένου στην οθόνη και την άσκησή του διαμέσου της τελευταίας. Ο «διάλογος» μπορεί να έχει γνωρίσματα ειδησεογραφικά, προσωπικά, επαγγελματικά, κ.ά.

Το φαινόμενο της μετα-αλήθειας δεν πολλαπλασιάζεται έτσι μόνο αριθμητικά, αλλά εγκαθιστά ένα περιβάλλον οικειοποίησης του πραγματικού, μέσα από την ολοένα αυξανόμενη δυνατότητα επιλογής του διαλογικού στοιχείου. Όσο περισσότερο δημιουργούμε ένα οικειοποιημένο διαλογικό περιβάλλον με ψηφιακά μέσα, τόσο απομακρυνόμαστε από τις ιδιαιτερότητες του φυσικού περιβάλλοντος, καθώς το ψηφιακό περιβάλλον είναι συγκλητικό προς το πρόσωπο, ενώ το φυσικό είναι διαλογικό.

Η απομάκρυνση όμως από το φυσικό διαλογικό περιβάλλον είναι ταυτόσημη της απομάκρυνσης από τη διευρυμένη ανάγνωση των πραγματικών γεγονότων (facts). Έτσι, η εννοιολογική δυναμική της μετα-αλήθειας που οφείλεται στις τεχνολογικές δυνατότητες, συναντά τη διανοητική και συναισθηματική εγγύτητα

με την οποία αναγιγνώσκουμε το (προσωποποιημένο) πραγματικό μέσα στην ψηφιακότητα, λησμονώντας όμως, ότι σημαντικό τμήμα της τελευταίας το διαχειριζόμαστε και το δημιουργούμε εμείς οι ίδιοι και συνεπώς, ήδη, συνεχώς και πάντα εμπειριέχει περισσότερο εκείνα που εμείς θέλουμε και που εμείς είμαστε. Ο ψηφικός «μονόλογος» μοιάζει με εκείνο που ο Francis Bacon ονομάζει είδωλα του σπηλαίου, περιγράφοντας τις «ψευδαισθήσεις του ανθρώπινου πνεύματος» (Bacon 2000: 41), που αναπτύσσονται σαν ένα «ιδιωτικό σπήλαιο», συνέπεια του οποίου είναι η έντονη διαφοροποίηση, η τυχαιότητα αλλά και η ακανόνιστη δυναμική της ανθρώπινης αντίληψης και συνείδησης. Ο Bacon επικαιροποιεί μέσα από τη μεταφορά του «σπηλαίου» την αντίληψη του Ηράκλειτου, ότι οι άνθρωποι αναζητούν τη γνώση περισσότερο σε ένα δικό τους ιδιωτικό κόσμο, παρά σε κάποια ευρύτερη ή κοινή σφαίρα» (ibid.).

Ο μονολογικός εαυτός του 21ου αιώνα εμφανίζεται έτσι σαν μία αναδυόμενη ανθρωπολογική τάση, που ενθαρρύνεται από την τεχνολογία (technoiduality), και η οποία αντικαθιστά τον φυσικό διάλογο με τη μονολογική θέαση. Η τελευταία εμπριέχει τον διάλογο, αλλά σε ένα περιβάλλον το οποίο αντίθετα με το φυσικό δομείται –σε μεγάλο βαθμό– από τις επιλογές του χρήστη, που είναι αλληλένδετες με τις επιθυμίες του, τις ιδέες του, και τον κοινωνικό του περίγυρο. Με αυτόν τον τρόπο ο τελευταίος, ενώ διευρύνεται ποσοτικά μέσα από την ψηφιακή κοινωνικότητα, ποιοτικά συρρικνώνει τις διαφοροποιήσεις της φυσικής, φιλτράρωντας τις μέσα από την ψηφιακή αλγοριθμική επιλεκτικότητα που «επιλέγοντας συσχετιστικά και με προτεραιότητα στο περιεχόμενο, διαπλάθει την πληροφοριακή μας πορεία» (Beer 2013: 66). Από αυτή και μόνο τη δυνατότητα, το προσωποτεχνικό υποκείμενο ήδη αλλοιώνει στον ιδιωτικό κυβερνοχώρο, τη σημαντικότερη προϋπόθεση για το δρόμο προς την αλήθεια ενός γεγονότος, που είναι η διευρυμένη κατανόηση και κρίση.

Ο χαρακτήρας της φιλαλήθειας, δηλαδή της τάσης προς την αλήθεια, μεταβάλλεται κατά τον τρόπο που επιλέγονται τα φίλτρα που επικυρώνουν ή διαψεύδουν ένα γεγονός. Με την επιλογή των κατάλληλων φίλτρων μέσω συγκεκριμένων και συναφών επιλογών πληροφοριακών δικτύων, οι συνθήκες διάψευσης ενός γεγονότος διαψεύδονται καθώς αποδυναμώνονται, ενώ οι συνθήκες επιβεβαίωσης ενισχύονται καθώς διαδίδονται και αναμεταδίδονται. Και οι δύο προσεγγίσεις εκκινούν από τη δυνατότητα οικειοποίησης και παραμόρφωσης του γεγονότος, καθώς στην πρώτη υπερισχύει αιτιολογικά η δυναμική της τεχνολογίας πάνω στον τρόπο που παρουσιάζεται και γίνεται αντιληπτή η αλήθεια σήμερα, ενώ στο δεύτερο, η έννοια μετα-αλήθεια αναπτύσσεται μέσα από ένα πεδίο εξουσίας που χρησιμοποιεί τον χαοτικό ιστό του διαδικτύου, προκειμένου να προωθηθεί ένας διαλυτικός εννοιολογικός μετασχηματισμός της έννοιας της αλήθειας.

Η δεύτερη προσέγγιση ωστόσο διαπράττει ένα λογικό σφάλμα και έτσι εξελίσσεται και η ίδια ως προίον μετα-αλήθειας. Το σφάλμα είναι ότι αποδίδει κρυφή πρόθεση εξουσιαστικού τύπου στη χρήση του όρου «μετα-αλήθεια», ώστε να αμφισβητηθεί και να αλλοιωθεί από αυτόν η σημασιολογική αξία του όρου «αλήθεια». Αλλά η απόδοση προθέσεων κατά τη διαδικασία

παραγωγικής αναζήτησης της αλήθειας, είναι ακριβώς εκείνο το στοιχείο που διακρίνει τις αληθειακές από τις μετα-αληθειακές προτάσεις. Ενώ οι αληθειακές στηρίζονται στην παρουσίαση γεγονότων, παρουσιάζοντας ταυτόχρονα και τις προθέσεις τους σχετικά με αυτά, π.χ. ένα επιστημονικό πείραμα, οι μετα-αληθειακές αποδίδουν στην παρουσίαση της αλήθειας κρυφές προθέσεις και έτσι διεκδικούν μία αναπροσαρμογή της βασισμένη σε συναισθηματικές τάσεις ή εκρήξεις πεπιοθήσεων, αφού δεν μπορούν αλλιώς να ερμηνεύσουν τα πραγματικά γεγονότα, τα οποία θεωρούν εξ' υπαρχής νοθευμένα -εξαιτίας των (υποτιθέμενων) κρυφών προθέσεων- και συνεπώς εξ' ορισμού ψευδεπίγραφα.

Η ΜΕΤΑ-ΑΛΗΘΕΙΑ ΚΑΙ ΤΟ ΕΠΙΣΤΗΜΙΚΟ ΤΑΒΟΟ ΤΗΣ ΦΙΛΟΣΟΦΙΑΣ

Στην πραγματικότητα η μετα-αλήθεια δεν είναι κάτι τόσο νέο όσο παρουσιάζεται. Φυσικά, ένας νέος όρος πάντοτε σηματοδοτεί την απαρχή της συνειδητοποίησης ενός φαινομένου και υπό αυτή την έννοια είναι πάντα εξαιρετικά χρήσιμος. Είναι όμως η ίδια η δυναμική της ονομασίας ενός πράγματος ή ενός φαινομένου που την ίδια στιγμή που το φέρνει στην επιφάνεια της εννοιολογικής αναγνώρισης, ταυτόχρονα εγκαθιστά (όταν αυτό συμβαίνει) και το taboo σε σχέση προς αυτό. Με άλλα λόγια η μετα-αλήθεια αντικαθιστά και πλέον συμπληρώνει την παλαιότερη ιδεολογική στράτευση προς καθεστώτα που υπόσχονταν να απαλλάξουν τον πολίτη πολύ άμεσα από σημαντικά προβλήματα. Η αλήθεια που βίωνε για παράδειγμα ένας προλετάριος που έτεινε ιδεολογικά προς τον κομμουνισμό δεν ήταν παρά φαινόμενο «μετα-αλήθειας» για τον κεφαλαιοκράτη, ο οποίος δεν αμφισβητούσε τόσο ότι πληρώνει χαμηλά την υπεραξία που παρήγαγε ο εργαζόμενος, αλλά θεωρούσε συναισθηματική υπερβολή και προσωπική φαντασίωση του προλετάριου, ότι η σοσιαλιστική επανάσταση θα του λύσει το πρόβλημα. Ωστόσο, όταν το πρόβλημα λαμβάνει όνομα και χαρακτήρα αργότερα μέσα από τη Μαρξιστική θεωρία, η συζήτηση γίνεται taboo και αναπτύσσεται αντικομμουνιστική πολιτική και στρατηγική σε πολλές χώρες κατά τη διάρκεια του 20ου αιώνα.

Μετά την κρίση του 2008 ωστόσο και σε ένα απο-ιδεολογικοποιημένο περιβάλλον η άμεση στράτευση και η κριτική που δικαίως εμφανίζεται ενάντια στα κατεστημένα κέντρα ενημέρωσης, γνώσης και διαχείρισης της εξουσίας, μη-μπορώντας να λάβει ιδεολογικά χαρακτηριστικά (δηλαδή η πλειοψηφία να αναμορφωθεί από μία ιδεολογική αναδιοργάνωση), λαμβάνει το χαρακτήρα σύγκρουσης και εναντίωσης με το παλαιό καθεστώς «αλήθειας» (Foucault), που είχε οδηγήσει στη ριζική υποβάθμιση της ιδεολογίας μέσω της πάλαι ποτέ οικονομικής ανάπτυξης. Οι αιτίες συνεπώς και τα κίνητρα της μετα-αλήθειας είναι κοινωνικά και πολιτισμικά, ενώ τα μέσα που τη μεταδίδουν και την ενδυναμώνουν είναι τεχνολογικά (ψηφιακά), μέσα από τη διαδρομή που επιχείρησα να δείξω προηγουμένως.

Η εν λόγω σύγκρουση βασίζεται πάντα και αυτό είναι που πρέπει να υπογραμμιστεί ανάμεσα σε μία ολοένα ενδυναμωμένη ιδιωτική σφαίρα (με όρους πρόσβασης και αναδιανομής της πληροφορίας) μέσω προσωποποιημένων

τεχνολογιών και σε μία συνεχώς μειούμενη δυναμική των παλαιών κέντρων εξουσίας να αιτιολογήσουν τις στρατηγικές ανεπάρκειες και τις διαχειριστικές τους αποτυχίες (περιβάλλον, οικονομία, γεωπολιτική/μεταναστευτικό, τρομοκρατία), σε μία φουσκωμένη από ψευδαισθήσεις, επιθυμίες και αυταπάτες κοινή γνώμη που είναι παιδί ενός υπερφιλόδοξου, αλλά τελικά έντονα προβληματικού αναπτυξιακού μοντέλου, που τώρα μοιάζει εξαπατημένη, εάν όχι ηλίθια και απαξιωμένη (προλεταριοποίηση της μεσαίας τάξης). Αρκεί μόνο να σκεφτούμε ότι η “νέα κοινή γνώμη” αναπτύσσεται σε μία παγκοσμιοότητα στην οποία η σύγχρονη διάταξη των μέσων πληροφόρησης μετατρέπεται σε μία «λερναία ύδρα (για κάθε εφημερίδα που κλείνει, 2000 νέα blogs, και ενημερωτικές πηγές ανοίγουν μέσω Facebook και Twitter, με εκατομμύρια κανάλια, ιστοσελίδες και κοινωνικά δίκτυα τροφοδοσίας ειδήσεων) (Harsin 2015:329).

Αυτό που αποκαλούμε συνεπώς «αλήθεια» είναι στην πραγματικότητα η πίστη σε δίκτυα γεγονότων, που σχετίζονται μεταξύ τους και αυτό εξηγεί τόσο γιατί ενισχύονται, όσο και γιατί αποδυναμώνονται συνολικά και ταυτόχρονα. Η έλλειψη εμπιστοσύνης για παράδειγμα στη σύγχρονη φαρμακολογία και ιατρική δεν συνάδει καθόλου με την πρωτοφανή ανάπτυξη των αποτελεσμάτων των εν λόγω επιστημών. Ωστόσο, και οι δύο αποδυναμώνονται ως συνδυαστικοί κρίκοι σε ένα δίκτυο γεγονότων επειδή συνδέονται με την οικονομία, τη βιοπολιτική, το μεταναστευτικό ζήτημα και τα συστήματα υγείας.

Το φιλοσοφικό taboo τώρα, έγκειται στην αδυναμία, πίσω από την οποία κρύβεται η άρνηση πολλών φιλοσόφων να ενταχθούν στη συζήτηση για τη μετα-αλήθεια, με σαφήνεια, ψυχραιμία και κυρίως επίγνωση των σχέσεων τεχνολογίας και ηθικών πρακτικών. Η τεράστια απουσία αρθρογραφίας και βιβλιογραφίας σχετικά με μία έννοια που σχετίζεται άμεσα με το επιστημικό *a priori* του φιλοσοφικού αντικειμένου είναι δηλωτική της εν λόγω άρνησης. Η κριτική που έχει δεχθεί ο όρος και φυσικά όσοι επιχειρούν να τον ερευνήσουν περαιτέρω, τους ταυτίζει συχνά με κινήματα νεοφιλελεύθερων ψευδο-διανοητών που επιχειρούν με μία νέα ρητορική να διαστρέψουν τη σημασία της αλήθειας. Στην πραγματικότητα, η κατηγορία αφορά εκείνους που αναφέρονται στη μετα-αλήθεια διερευνητικά (ως μορφή υπέρβασης) χωρίς να προεξοφλήσουν ότι επρόκειτο περί ψευδαίσθησης του νεοφιλελευθερισμού που διοχετεύεται από τα αντίστοιχα ψηφιακά δίκτυα εξουσίας, ενώ παράλληλα, οι διερευνητές κατηγορούνται ότι επιθυμούν την ακύρωση της ανθρώπινης σκέψης και φυσικά της ίδιας της φιλοσοφίας. Εδώ οι διαδικασίες του taboo ενισχύονται, καθώς πέρα από το «απαγορευτικό» στον τρόπο προσέγγισης, εμφανίζεται και ο υποτιθέμενος «εχθρός της φιλοσοφίας» που είναι ο φορέας του διερευνητικού εγχειρήματος.

Όπως προαναφέρθηκε παραπάνω, το taboo εγκαινιάζεται μέσα από την ονομασία ενός φαινομένου που δηλώνει ακριβώς τη συνειδητοποίηση του ως μορφής υπέρβασης και είναι η συζήτηση ή ο λόγος που μπορεί και αναπτύσσεται πλέον πάνω σε αυτή τη συνειδητοποίηση, που ενοχλώντας υπόκειται σε καθεστώς απαγόρευσης και περιθωριοποίησης. Αντίθετα με τομείς έρευνας όπως η κοινωνική ψυχολογία, οι πολιτικές επιστήμες αλλά και

η κοινωνιολογία, οι παραδοσιακοί κλάδοι της φιλοσοφίας, από την ηθική μέχρι την επιστημολογία και από την πολιτική φιλοσοφία μέχρι την οντολογία, με τη συστηματική τους άρνηση να διερευνήσουν τα αίτια ανάπτυξης της έννοιας της μετα-αλήθειας, παραμένουν προσκολλημένοι σε ένα καρτεσιανό πρότυπο ανάγνωσης του ανθρώπινου στοιχείου που στοιχίζεται ανάμεσα στη βιολογική σωματική έκταση και την ορθολογική-κριτική νόηση ως θεμελιακά και τερματικά χαρακτηριστικά του είδους «άνθρωπος» και όχι ως ανθρωπολογικά στάδια τα οποία παρότι έχουν φυσική, βιολογική, ιστορική και διανοητική βάση, δεν μπορούν να αιτιολογήσουν το τέλος μιας εξελικτικής διαδρομής του, μέσα από την παρούσα ενσωμάτωση των ψηφιακών τεχνολογιών.

Το ότι για παράδειγμα οι ενσώματες ψηφιακές τεχνολογίες αποτελούν εμπειρική επέκταση (μέσω τεχνητών προσαρτήσεων) της σωματικής έκτασης, ή το ότι η ψηφιακή οντολογία παρέχει τη δυνατότητα σύμμιξης με τη φυσική, παρέχοντας δυνατότητες δημιουργίας κοινωνικών και επικοινωνιακών μικρόκοσμων εντός του κυβερνοχώρου, εγκαθιστώντας νέα ήθη και πρακτικές συμπεριφοράς -μεταξύ των οποίων εντάσσεται και η μετα-αλήθεια- παραμένει για τους προαναφερόμενους παραδοσιακούς τύπους φιλοσοφικής ανάλυσης κάτι σαν ζωντανή ψευδαίσθηση. Το taboo της μετα-αλήθειας, που όπως ανέφερα παραπάνω, πολλαπλασιάζεται ποιοτικά και ποσοτικά με τη χρήση των ψηφιακών μέσων, είναι απολύτως συνδεδεμένο με το εναρκτήριο taboo της αμηχανίας που προκαλείται αναφορικά με τη μελέτη του ανθρώπου ως εξελικτικού μηχανισμού τεχνικών αναπροσαρμογών, που ξεκίνησαν από την καλλιέργεια και φθάνουν σήμερα στο αίτημα παραγωγικής, οικονομικής και βιομηχανικής ανασυγκρότησης από κυβερνοφυσικά και κυβερνορομποτικά συστήματα. Αυτό που βιώνουμε σήμερα ως συζήτηση για τη μετα-αλήθεια δεν θα είναι τίποτα μπροστά στη τεχνολογική αφομοίωση του εαυτού από συστήματα αυξητικής και εικονικής τεχνολογίας που θα μοιάζουν με χωροχρονικά ταξίδια με ρόλους των επιλογών του, αφού ότι και αν βιώνουμε μπορεί να αναχθεί σε ηλεκτρική δράση, ενεργοποιώντας τον εγκέφαλο, καθώς τα αισθητήρια όργανά μας διανέμουν πληροφορίες για τον εξωτερικό κόσμο.

Αρνούμενοι την επιχειρηματολογία της ανθρωπολογικής εξέλιξης διαμέσου της τεχνολογίας ως τμήματος της φυσικής εξέλιξης και της φυσικής ιστορίας, οι τομείς παραδοσιακής ανάλυσης της φιλοσοφίας, δεν θα πάψουν ποτέ να ανακυκλώνουν τα taboo που τοποθετούν το μετα-μεσαιωνικό καρτεσιανό υποκείμενο ως στυλοβάτη της ολοκλήρωσης της ανθρώπινης σκέψης, με κύριο χαρακτηριστικό τον αυτοπροσδιορισμό. Τι συμβαίνει όμως όταν οι συνθήκες υπό τις οποίες προκύπτει ο αυτοπροσδιορισμός μεταλλάσσονται ηθικά, πρακτικά, κοινωνικά και τεχνολογικά; Ειδικότερα σήμερα που είναι εμπειρικά προφανέστατο ότι εξελισσόμαστε σε κινούμενα δίκτυα πληροφορίας, λήψης και εκπομπής, με ενσώματες τεχνολογίες και όχι πλέον με ασφαλένιες πανοπλίες ή βικτωριανές ενδυμασίες. Μήπως είναι η ώρα να ξεσκονίσουμε την αντίληψή μας για τον αυτοπροσδιορισμό και να σκεφτούμε ότι ο τρόπος που αυτοπροσδιοριζόμαστε ως ελεύθερα υποκείμενα είναι ταυτόσημος της μορφής και της συγκυρίας της εκάστοτε εποχής μέσα στην οποία ζούμε; Έαν το πράξουμε αποδεχόμαστε και

συνεισφέρουμε στη συγκρότηση μιας θεωρίας της τεχνολογίας που μελετά τις ανασυγκροτήσεις του ανθρώπινου στοιχείου και τις μεταβολές του. Εάν δεν το πράξουμε, μπορούμε πάντα να αναμασήσουμε τον φιλοσοφικό ρομαντισμό της «κουκουβάγιας που πετά πάντα το σούρουπο» (Hegel 1967:30), σε μία πραγματικότητα που –δυστυχώς η ευτυχώς- η τεχνολογία αναβάλλει συνεχώς το σούρουπο.

ΕΠΙΛΟΓΟΣ

Επιστρέφοντας στην αρχική μου διατύπωση, ο άνθρωπος της αρχαίας εποχής βίωνε την ελευθερία και την αλήθεια του μέσα από την ταύτιση του με την πολιτεία, ο άνθρωπος της νεωτερικότητας μέσα από τον ανοιχτό διάλογο και την ιδεολογική στράτευση ανάλογα με τα συμφέροντα και τις προσωπικές του επιδιώξεις, ενώ εμείς οι σημερινοί, στο κατώφλι μιας υπερνεωτερικής τεχνολογικής μετάβασης, προσαρμολόγουμε ολοένα περισσότερο στην παγίδα του να σκεφτόμαστε για τη φυσική πραγματικότητα με τους όρους της διαδικτυακής. Τους όρους δηλαδή ενός μονολογικού περιβάλλοντος στο οποίο διαλεγόμαστε όταν θέλουμε, με εκείνους που θέλουμε, επικροτώντας εκείνους που εμείς επιλέγουμε να βρίσκονται μαζί μας στον κυβερνοχώρο, και απομακρύνοντας έτσι όλους εκείνους που μας φαίνονται υπαρξιακά ξένοι ή άσχετοι.

Θα αντιληφθούμε έτσι ότι το πρόβλημα δεν είναι ο τρόπος της ονομασίας (αλήθεια ή μετα-αλήθεια), ούτε ο τρόπος που θα χαρακτηριζόμαστε ανθρωπολογικά (προσωποτεχνικό υποκείμενο/technoidual ή κάπως αλλιώς), αλλά η αναγνώριση ότι διανοητικά και σωματικά βρισκόμαστε συνεχώς σε καθεστώς μεταβάσεων και μεταθέσεων, που αποτελούν υπερβάσεις, αλλά καταλήγουν taboo, όχι όταν αρνηθούμε τον τρόπο της περιγραφής τους και της ονομασίας τους, αλλά όταν αρνούμαστε ή φοβούμε να ερευνήσουμε και συνεπώς να αντιληφθούμε τη μεταβατική τους σηματοδότηση.

ΒΙΒΛΙΟΓΡΑΦΙΑ

- Aristotle. (1934, 2nd ed.), *The Nicomachean Ethics*, Cambridge, MA: Harvard University Press.
- Bacon, Francis. (2000), *The New Organon*, Cambridge: Cambridge University Press.
- Beer, David. (2013), *Popular Culture and the New Media: The Politics of Circulation*, New York: Palgrave MacMillan
- Foucault, Michel. (2000), *Ethics: Essential Works of Foucault*. London: Penguin.
- Harsin, Jayson. (2015), 'Regimes of Posttruth, Post Politics and Attention Economies', *Communication, Culture and Critique*. 8: 327-333.
- Hegel, Georg Wilhelm Friedrich. (1967) *Philosophy of Right*, Oxford: Oxford University Press.

- Hegel, Georg Wilhelm Friedrich. (1975¹), *Natural Law*, Philadelphia: University of Pennsylvania Press.
- Hegel, Georg Wilhelm Friedrich. (1975²), *Early Theological Writings*, Philadelphia: University of Pennsylvania Press.
- Post-truth (2017), Oxford Lexicon, Oxford: Oxford University Press, (<https://en.oxforddictionaries.com/word-of-the-year/word-of-the-year-2016>). Ανακτήθηκε, 8 Απριλίου 2017.
- Searle, John. (1995), *The Construction of Social Reality*, New York: Free Press.
- Stiegler, Bernard. (2009), “The Carnival of the New Screen: From Hegemony to Isonomy”, στο P. Snickars & P. Vonderau (επιμ.), *The Youtube Reader*, Lund: Mediehistoriskt Arkiv, 40-60.

ABOUT THE AUTHOR

Theodore Kabouridis is a post-doctoral researcher in Aristotle University of Thessaloniki with field of research the anthropological, productive and legal reconstitution of digital technologies. His doctoral thesis (Aristotle University, 2014) studied the diachronic and systemic relation between technology and human internality, whereas his post-graduate studies (Aristotle University, 2008), concerned political philosophy, ontology and philosophy of social sciences. He completed his graduate studies in London Metropolitan University (2004), in the faculty of Philosophy and Sociology.

Bioart

KAROLINA ŻYNIĘWICZ
University of Warsaw, Poland

Artist or researcher? Artist conducting autoethnography research during projects in biological laboratories

ABSTRACT

This text aims to present autoethnography as a method of examining the art & science phenomenon. The meaning of art & science is not limited here to the area of contemporary art. Instead I try to show it as a social phenomenon. In my research autoethnography is combined with art based research and the role of the artist is connected with the role of an academic researcher. This combination is quite complicated, but by preparing an appropriate order of work involved in the case it might lead to really interesting cognitive processes.

KEYWORDS

art & science, autoethnography, art based research, artist, researcher

INTRODUCTION

What does the term art & science means exactly? While being an artist working on the basis of biology and biotechnology in cooperation with biologists I decided to show the art & science phenomenon from the backstage.

AUTOETHNOGRAPHY AS A METHOD OF EXAMINING THE SOCIOLOGICAL AND CULTURAL ASPECT OF ART & SCIENCE PHENOMENON

It is not my goal to describe in this text the entire history of autoethnography. I would rather try to explain why I decided to use this method in my research.

Double point of view

The main feature of autoethnography is its narrative character. It is also important to relinquish from the traditional myth of research objectivity. Autoethnography draws attention to relations between the researcher and the matter of research, but also between the author and the audience. The researcher is an integral element of field work. He/she describes

cultural phenomenons from his/her own personal perspective. It is a special combination of two perspectives: the internal and the external. The researcher analyses his/her own emotions and experiences, but also is able to carry out the analysis from the point of view of the external observer. This dualism can be ethically problematic. The key thing is to keep the balance between these two perspectives. Although, it should be noted that autoethnography gives the researchers a chance to analyse himself/herself in the context of the foremost field work.

Embodiment of culture

Taking into account the researcher's personality we should pay attention to its relation to the corporeality. Stacy Holman Jones defined performative ethnography (another term for autoethnography) as an embodiment of culture. This approach especially matches the bio art activities based on corporality and materiality.¹

Processuality

The next important feature of autoethnography is its processual character. Autoethnographic notes show that the world is permanently changing, between narration and its context, between the author's analysis and finally between the problem and finding a solution.² Science and Technology Studies (STS) defined science and technology as dynamical processes.³ Creation of art is also an active process. Keeping a research diary allows the researcher to catch the dynamic of all those processes. It is really important to understand act of writing as a nearly automatically activity which is also a separate process. M. Strathern draws attention to differences between state of conducting field work observation and state of analysis with the use of writing. She defines this key moment in research as a ethnographic moment.⁴

Two kinds of autoethnography

I mentioned earlier about the existence of two kinds of autoethnography. One of them, the evocative autoethnography is similar to autobiography and the main goal of this method is to focus on the audience emotions. On the other hand there is the analytic autoethnography which is a more scientific method, trying to explore deeper the matter of the examined areas.⁵

¹ S. Holman Jones, *Autoetnografia. Polityka tego, co osobiste (Autoethnography. Telling Untold Stories)*, in: Norman K. Denzin, Yvonne S. Lincoln, *Metody badań jakościowych (The methods of qualitative research)*, tom.

² *Ibidem*, s.177

³ S. Sismondo, *An introduction to Science and Technology Studies*, Wiley-Blachwell 2010, s.11

⁴ M. Strathern, *Property, Substance and Affect. Anthropological Esseys on Persons and Things*, The Athlone Press, London & New Brunswick, NJ 1999, s. 6

⁵ L. Anderson, *Analytic Autoethnography*, „*Journal of Contemporary Etnography*”, vol.35, no. 4

Although, my research is strictly linked with artistic practice I decided to use the analytic autoethnography (L. Anderson, 2006) instead of the evocative which is artistic from its nature. I would like to avoid treating the result of my research as an artefact. I find it interesting to compile my analysis with those done by laboratory ethnographers (Latour, Knorr Cetina, Lynch) and also with general knowledge about correlation between art and science (in the context of history of art and culture).

THE BINARY RESEARCH PROCESS: AUTOETHNOGRAPHY AND ART BASED RESEARCH

Creating art is the basic thing which distinguishes my research from social and ethnographic research. In my case autoethnography is linked with art based research which could be treated as a bridge between the creation process and scientific activity.

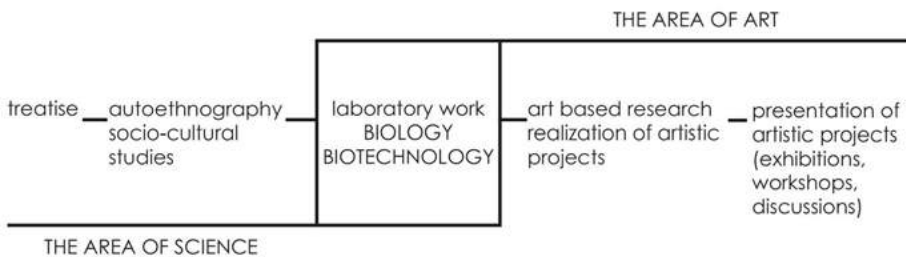


Image 1: The binary research process.

Art based research

There are a lot of features of art based research which make it similar to autoethnography. The first of them is relativity. Post Disciplinary in the meaning of tendency to passing the boundaries is also crucial as well as self-similarity. It means that the structure of the primary process is independent from its scale (we can take into account studio, social group or culture in general). Artistic practice and research activity share similar patterns of practice.⁶ Both groups try to find the answer for the questions about the role of human in nature. The common denominator of this praxis is also the experimental character of the work which combines artistic practice with laboratory research and ethnography as well. This interdependence is really important for the activity described in this text.

⁶ G. Sullivan, Art Practice as Research: Inquiry in Visual Arts, Pennsylvania State University, USA 2010

ARTISTIC PROJECTS CONDUCTED IN LABORATORIES QUA THE BASE OF RESEARCH

The previous research was based mainly on one project: safe suicide. However, I was carrying out two smaller projects simultaneously. In my opinion, description of the premise of these projects seems to be necessary to make the general idea of my activity understandable. The character of these project was determined by relations, especially relations between me and the scientists, but also between me and the liminal lives taking place in laboratories.

Safe suicide

In the safe suicide project, the presumptions were adjusted to the reality in which it was conducted. However, despite the fact that the main idea is quite simple, it aroused a lot of questions (which I had the opportunity to observe during a few presentations of my project, which have already taken place). As a part of my art & science research I bred my own cells by myself (with scientific support). At first, there were B lymphocytes, then there were fibroblasts.

The visual side of safe suicide project was followed by the scientific context. I tried to use the plain aesthetic of biological research, respecting the common order of the surroundings where I worked.

The visual core of the project's first part were images of my dying cells. I used fluorescence and confocal microscopes in this phase of the artwork. Finally, the images were printed onto porcelain disks in the form of traditional Polish funeral pictures. I collected also the test tubes with the remains of my cells inside. So far, the visual presentations of the project took the form of a symbolic cemetery. In this case performance is mainly based on the change of the context. This displacement in the area of meanings seems to be the biggest challenge for biologists, who suddenly become a part of an artistic activity.



Image 2: safe suicide (part I) as part of the Non human time exhibition (PL: Czas nie-ludzki), The Contemporary Art Gallery, Opole, 2016



Image 3: safe suicide (part I) as part of the Non human time exhibition (PL: Czas nie-ludzki), The Contemporary Art Gallery, Opole, 2016.



Image 4: safe suicide (part I) as part of the Temptation of immortality exhibition (PL: Pokusa nieśmiertelności), Copernicus Science Center, Warsaw, 2016.

The most debatable aspect of safe suicide is the issue of liminal lives (cells) subjectification. The question whether the cells separated from my organism and bred in in vitro condition are still part of me constantly arises. Another crucial question is: am I performing self-destruction while killing my cells? It

seems to be obvious that it is not identical, at least from the scientific point of view. However, it shows the dichotomy between the two worlds: nature and post nature. I define the post nature world as the area of laboratories, where life is carried on in special conditions.

In the second stage of the project I explored the process of my cellular aging (in the meaning of passing by), comparing the resulting biological material with observations of visual changes of my skin. The changes were observed at those two levels, in the same period of time, are absolutely incomparable with each other.



Image 5: safe suicide (part II), as a part of the Pernicious predilection exhibition (PL: Uporczywe upodobanie), Labirynt Gallery, Lublin, 2017.



Image 6: Documentation of my cellular and natural aging (of the skin and skin cells).

to the spot in order to soak the blood to the pad. The pad and the needle were then put back in the bag and later they were to be sealed tightly. Before placing the needle in the bag the examined could voluntarily sign it with one's name or initials. Individuals who refused donating blood were being asked for a brief written justification either disclosing their identity or anonymously. The donated texts were of equal value to the donated blood.

In the laboratory in Warsaw (Institute of Genetics and Biotechnology) took place an attempt of reading DNA from each blood sample and combining all samples in the test tube conducted in a laboratory. The trial of DNA isolation did not result successfully because of the state of the blood samples which were stored in too high temperature. Finally, all samples were combined symbolically in one test tube. This tube and the research diary became a base of an artistic object presented during exhibitions.

Performing of this task required a support of a new biologist, which was not involved in realisation of any of my previous projects.



Image 8: Final visual result of the project Similarity of differences (keeping a research diary as an artistic object/performance).

Transposition

Project transposition is devoted for the topic of fear of GMO. The first step of this project was transferring of my gene responsible for the synthesis of pirogonian kinasis to yeast *Saccharomyces cerevisiae*. As the result, the yeast proceed fermentation with the participation of my gene. The final product of this project is alcohol which shall be served during a performative dinner. I consider this to be an allusion to the biblical motive of the last supper. However so far, a few months of trials did not turn out to be successful, especially because of the fact that kinasis has a lot of possible variants. That was the reason, we decided to use other genes. The next step was experimenting with plasmid which let us transport the set of my genes to the yeast.

The implementation of this project was associated with participation of a biologist which was not involved in the two previously mentioned projects.



Image 9: The research diary (Transposition).

ARTIST OR RESEARCHER? THE PROBLEM OF IDENTITY IN TRANSDISCIPLINARY ACTIVITY

The combination of two research processes which I mentioned above can be problematic. It requires to create a precise order of the work conducted. However, in this case the identity of the researcher is a greater problem. I am often asked the question whether I am more of an artist or a researcher. One of the sociology researchers called me a some kind of liminal life, similar to these which I work on in my artistic project. That is probably because of me being between different disciplines such as art, biology, biotechnology or sociology all the time. In the laboratories I am perceived mostly as an artist and PhD

student. The majority of the scientists presumes that my thesis will have only an artistic character. Although I told them about my observations, dictated by the autoethnography, but most of them seem to forget about it. Taking into account my educational background (graduated at Academy of Fine Arts in Łódź), conducting art based research is safer for me than acting in the field of autoethnography. However, I noticed that in fact I am starting to become too scientific for the artistic community. The area of socio-cultural research is a much bigger challenge for me since I have to learn new methodology. Moreover, I have the impression that for the scientific environment I am too much of an artist as well. There is a tendency to suspect that all my scientific research are treated as artistic projects only. This can undermine their credibility. That was the most important reason why I decided to use analytic autoethnography. As I showed on the graph, both ways of my activity are connected but have different goals. Art based research has artistic results, autoethnography should lead to scientific results.

The field researchers can experience two kinds of separation. The first one is associated with the moment of finding out about the new area of observation, while the second one is related to confronting her/his observations with the academic environment. The Polish sociologist E. Zakrzewska - Manterys wrote about this particular experience based on her own example of being a mother of a child with Down Syndrome and at the same time a sociological researcher interested in social existence of children with Down Syndrome and their parents⁷. It is difficult to confront not only yourself with a new situation, but also your own emotions and analysis while being judged by other researchers.

My situation is more complex because I am not a typical academic researcher. I am still an artist carrying out research. Yet this statement can make it very complicated and difficult to exist in the academic reality. The role of the artist is naturally fitted to the artistic part of my activity but seems unusual for the area of scientific research. Based on this case, we can even talk about a triple separation.

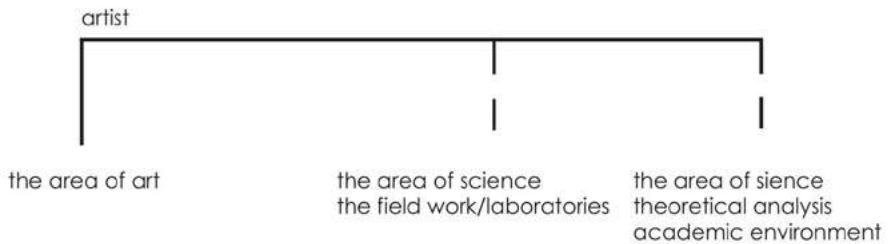


Image 5: The scheme of separation

⁷ E. Zakrzewska-Manterys, *Down i zespół wrażliwości. Studium z socjologii cierpienia (Down and douds syndrome, Wydawnictwo Naukowe Semper, Warszawa 1995.*

CONCLUSION

For the purpose of this text I decided only to make a short outline of my methodology without more precise description of my research results and trajectory of the existence in labs.⁸ It is difficult to describe it while being still in the state of work in progress. New artistic projects increasingly effectuate widen my research area. The main point of interest are multilevel relations between:

- artist - scientist;
- scientist - scientist;
- human beings - non human beings;
- scientific methodology - methodology of creative process.

I am also strongly interested in the aesthetic of biological research and the existing ways of popularisation. Hopefully my results could be useful for laboratory ethnographers but also art historians and anthropologists of culture.

REFERENCES

- Anderson Leon, 2006, Analytic Autoethnography, "*Journal of Contemporary Ethnography*", vol. 35, no. 4
- Holman Jones Stacy, 2009, *Autoetnografia. Polityka tego, co osobiste (Autoethnography. Telling Untold Stories)*, in: Norman K. Denzin, Yvonne S. Lincoln, *Metody badań jakościowych (The methods of qualitative research)*, tom. 2, Wydawnictwo Naukowe PWN SA, Warsaw
- Sismondo Sergio, 2010, *An introduction to Science and Technology Studies*, Wiley- Blackwell
- Sullivan G, 2010, *Art Practice as Research: Inquiry in Visual Arts*, Pennsylvania State University, USA
- Strathern Marylin, 1999, *Property, Substance and Affect. Anthropological Essays on Persons and Things*, The Athlone Press, London&New Brunswick, NJ
- Zakrzewska-Manterys Elżbieta, 1995, *Down i zespół wątpliwości. Studium z socjologii cierpienia (Down and doubts syndrome. Study of suffering sociology)*, Wydawnictwo Naukowe Semper, Warsaw

ABOUT THE AUTHOR

Karolina Żyniewicz - artist (2009 graduated from the Academy of Fine Arts in Łódź, Department of Visual Arts), PhD student (second year, Transdisciplinary PhD Programme at Artes Liberales Faculty, University of Warsaw). Working in a laboratory (mostly at Institute of Genetics and Biotechnology, Faculty of Biology, University of Warsaw and Nencki Institute of Experimental Biology, Polish Academy of Sciences) locates her works in the field of bioart. She tries

⁸ In the meaning of part of important part of biography: P.L. Berger, B. Berger, H. Kellner, *The Homeless Mind: Modernization and Consciousness*, Vintage Books, New York 1974.

to use her artistic projects as a sociological research tools. This is the topic of her research study. Long time she was cooperator of education departments Museum of Modern Art in Warsaw and National Gallery Zachęta. Educational aspect is one of the most important elements of her artistic practice.

e-mail: karolinazyniewicz@gmail.com

www: <http://karolinazyn.wixsite.com/livingart>

fb: <https://www.facebook.com/karolinazyn/>

YIANNIS MELANITIS
Athens School of Fine Arts, Greece

A transgenic butterfly artwork / Inserting a human gene (artist's Yiannis Melanitis) in a butterfly (species: Leda Melanitis)

ABSTRACT

Leda Melanitis is a transgenic butterfly of LEDA MELANITIS (named Leda Melanitis by Linnaeus since 1758), created through the use of one of the genes of the artist Yiannis Melanitis (six6 gene). The gene of the artist was inserted in the genome of the butterfly which is sharing the same "surname".

The idea was to breed transgenic butterflies containing a gene of human origin that acquire ectopic eyes in other parts of their body through the six6 protein. To generate this neo-organism, the plasmid that contains the six6 gene was injected in the egg. From this egg, a caterpillar, then a chrysalis and finally a new transgenic butterfly was born. The first breed of a butterfly with a human gene was realised on November 27th, 2016. Although the breed was successful, the ectopic eyes were not detected which needs several tries more]. The idea of a cross species insect containing a human gene derives from a study on the philosophy of Greek sophists and onomatologia.

KEYWORDS

Transgenic, bioart, genetic art, ontogenetic art, ontology, biotechnology, art, philosophy, texts, code, aesthetics of code, art history, butterfly, onomatologia, information, it from bit, natural, artificial, decoding genes, homonymic information.

PHILOSOPHIZING ON THE GENES

There is an inherent problem in a catholic conceptualization of nature, without first enlightening whether nature contains or not the observer. The observer, the philosopher or the artist, embeds additional information in the system, a ballast that is too critical to disregard. By making calculations on nature, feedbacks emerge, tending to be uncontrollable. Yet nobody today may defend a pure, solid idea of nature, since the Pre-Socratic philosophers designated physis (φύσις) as a kind of mechanism; their ambivalent delineations included ideas

of nature without clear boundaries as also ideas ruled by non-measurable quantities, where swerve, unpredictability and uncertainty play a key role in any given changes.

In modern times, the object of art is no longer the idea, pre-existing the work, as in conceptualism, but the artwork is a kind of a phantom measurement, rather unclear in certain of its parameters, perfused and endlessly displaced. Even after adopting this, one should admit that nothing happens or may exist out of nature. That makes almost impossible to state any definition of nature itself.

Though, the noetic tools of our times are extended and more acute. As I think about the importance of the concept of information, which is impossible to supplant, I would not attempt a discrete definition of nature. I would simply describe nature, ad referendum, as the field that is allowing or not the movement of information.

The genesis of a hybrid butterfly is an effort to delimit an object (an organism), in relation to the concept that is expressed by its name. The idea emerged from a study over philosophy, especially on the ideas of Antiphon the Sophist. In reasoning about the relationship of words and objects, Antiphon makes a unique conception, that “nothing real corresponds to the name of an object”, leaving onomatology in the realm of pure chance, while true knowledge becomes inaccessible. Name correctness becomes a key point for Antiphon and should be under survey: “Names can be erroneous... The concepts we use are not delimited by the exact way objects are”. That is the initial point for making LEDA MELANITIS. My surname, Melanitis, derives from the Greek root melas (μέλας), dark, deprived of light; a property probably attracted Linnaeus in naming the inspected butterfly...

Physicalization of information

Names, however, contain other meanings, even indicatively (to remember Antisthenes, “ knowledge begins by minutely studying names”), so we cannot define a concept without some correspondent, minimum information.

The broader area of my analysis is information in contemporary art and under this sense, Leda Melanitis initiates a dispersion of homonymic information between organizations. I am absolutely convinced of the universality of J. Wheeler’s issue on the nature of the information in his statement ‘It from bit’ (Wheeler, 1989: p. 354-368), and also of the attempt by R. Landauer to re-normalise information, consistently formulating that information is natural. (Landauer, 1991, Physics Today: pages 44, 5, 23).

In the conception that information is impersonal, we may juxtapose the value of information as something unique, (here in the form a gene), de-materialised, “what is left” when everything else has been de-signified, precisely natural and interchangeable. The aim of Leda Melanitis is to interweave language and life not as bio-laboratory exercise, but in the tradition of a modernistic art strategy and practice.

My intent is to see all these characteristics as entropic changes of the artistic whole. Artistic ensembles, as I define them, are environmentally spatial-temporal events that have a certain initial amount of entropy (here in the form of disorder), without known outcomes. The purpose of artistic activity may be considered and calculated in relation to the amount of spillage from “normality“. The artist’s intervention, the biologist’s or the experimenter’s generally, make changes to the system’s entropy. This is a critical point in self-organization: if something innovative needs to be done, there is always a cost that may exceed the energy required for a specific artwork. Under this view, we may conceive my gene injection in the butterfly *Leda Melanitis* as an attempt of transcending the entropy restrictions of a text.

ONTOGENETIC ART

Ontology (from onto- and the Greek ὄν, ὄντος « being; that which is », is the philosophical study of the nature of being existence or reality as such, as well as the basic categories of being and their relations. That’s a lexicon definition of the term that refers to being as a philosophical category deriving from the pre-Socratic philosophy. There is a critical point when we pass from a status where information, up to now served as an extension or empowering of the body (mediated environments, networks etc.) inserts the body in order to reform it in an ontogenetic manner (DNA manipulation).



Image 1: Transgenic *Leda Melanitis* butterfly, adult male from the first successful breed, Athens. photo by Y.Melanitis 2017.

A little after conceiving *Leda Melanitis*, i endeavored to delineate a neologism: ontogenetic art. The concept of ontological art was in a broad sense

perceived in Aristotle's course Physics (Physics II 8 199a 15-17), in which he raises the question of art, functioning in two ways: The arts, either act on the basis of nature and extend things beyond it (ἐπιτελεῖ), or mimic (μιμῆται) nature. Ontogenetic change in art theory might also refer to the concept of the organism changing as a whole, also used as a term to emphasize on something that affects the organism so intensively as to modify its basic properties. (so might be an ontological change).

CONCLUSION

By adding information to the core of the natural world we are in a procedure of conceptualizing life. This however has consequences. A cluster of unexpected characteristics emerges in this effort, such as the perception that the body of the artist is a pattern. The term pattern here means a biological condition that is constantly evolving, operating outwards through self-organization, on a basis of biological unpredictability. Thus, what instantly emerged in search of a new artwork was the need to underscore language, text and the code, as a set of values. That is a systematized set, subject to re-formations, re-programming and "mutations", sensitive in entropy just like the human body is. [thanks to Matina Papagiannarou for the biolab support and technical innovation.]

REFERENCES

- Melanitis, Yiannis (2012), Ontogenetic Art, ScienceArt, Moscow, First International Conference, Lomonosov Moscow University, 2012.
- Melanitis, Yiannis (2017) 'Text, Code and the Arts of Bio-age': Institutional Critique to Hospitality: Bio Art Practice Now, A critical anthology ed. by Assimina Kaniari, Athens: Grigori Publications, Art history and theory 5, 2017.
- Postinterface Magazine, Savini Mario, (2017), 'Transgenic art. Leda Melanitis butterfly. Mario Savini's interview with Yiannis Melanitis', <http://www.postinterface.com/11-notizie/focus/316-transgenic-art-leda-melanitis-butterfly-mario-savini-interview-to-yiannis-melanitis>, Accessed 6 September 2017.
- Wheeler, J. A.: "Information, physics, quantum: the search for links", Proceedings III International Symposium on Foundations of Quantum Mechanics, Tokyo, 1989, p. 354-368.
- Wheeler, John Archibald; Ford, Kenneth (1998). Geons, Black Holes, and Quantum Foam: A Life in Physics. New York: W.W. Norton & Co.

ABOUT THE AUTHOR

Yiannis Melanitis has been exhibiting worldwide since 1999. His recent research focuses on the role of information on the arts considering "Information as the new Conceptualization". His work implies the use of heterogeneous

artistic media, through installations, performances, bioart, theoretical texts, poems, code-based web artworks, sculptures, oilpaintings and drawings. He derives from philosophy and epistemology to incorporate concepts from quantum physics, biotechnology, maths, political theory. Yiannis Melanitis holds degrees in painting, sculpture and digital arts from the Athens School of Fine Arts and is presently a PhD candidate at the School of Architecture, (NTUA) with a thesis entitled: "Biological Dynamics in Art". He has exhibited in Mexico, Brasil, Belgium, UK, Portugal, Switzerland etc. Among his recent solo exhibitions are at the National Museum, Brasil; Biblioteque of Brasil; Museu D. Diogo de Sousa, Braga, Portugal; the Tongeren Museum and Praetorium, Belgium.

Email: imelanitis@gmail.com

Website: www.melanitis.com

BORYANA ROSSA
Syracuse University, USA

The Mirror of Faith

ABSTRACT

The Mirror of Faith is an art and science project that explores the crossing overs of science, religion and media authority. The project also manipulates the 'sacred' borders between species and between bodies.

'Science is the religion of our time.' is a common saying that no longer provokes any critical thought in the general public neither about science, nor about religion. This statement is commonly accepted now as one more 'truth' about the world. Important for us as artists was that although seemingly deprived of meaning, this statement refers to a high authority associated with the role that both religion and science play in society, a result of centuries long struggles between them.

The Mirror of Faith is meant to provoke in a playful and humorous manner critical public dialogue about genetic research, exposing some issues the political and commercial promotion of this technology creates. The project is related to the research of the molecular biologist Dean Hamer on genetic predisposition of human spirituality. In his book, *The God Gene*, (Hamer, 2005) Hamer claims certain brain chemicals affect self-transcendence. The actions of these chemicals are linked to a gene called VMAT2 and its specific mutation in Intron 7 upstream of the VMAT2 gene coding sequence. The following chapter is a review of the media representation of this research, on which we based our artistic work and a description of the art work itself.

KEYWORDS

genetic predisposition, spirituality, bio-art, religion, Eastern Europe

INTRODUCTION

Philosopher and historian of science Paul Feyerabend says that science, as we know it from history, is a combination of rules and errors (Feyerabend 1970: 18). Scientists should learn how to recognize error, live with it and be responsible for 'adding fresh errors' to any investigation. According to Feyerabend, scientists need a theory of error along with the strict protocols.

However, error 'being an expression of idiosyncrasies of an individual thinker, observer, even of an individual measuring instruments,' (Feyerabend

1970: 18). is highly dependable on circumstances and personal decisions, therefore, a theory of errors, would be quite different to what we commonly assume an academic theory to be. Since error is idiosyncratic, dependable and individual, this theory will be rather a 'collection of stories,' and, similarly to any proper collection of stories will contain a 'sizable amount of gossips' and will have much in common with arts (Feyerabend 1970: 19).

Feyerabend proposes this theory to be created, so scientists make use of historical unintentional and undescribed 'methodologies,' of what falls off the scientific protocols, but actually triggered invention. This anarchic epistemology is juxtaposed to the rigorous scientific alternatives, as more appropriate and even necessary, for the freedom of humanity. If scientists want to be free, they need the error and a theory for its use (Feyerabend 1970: 21).

Feyerabend's 'against method' theory has a definite inspirational anarchic pathos. But his appeals for breaking up with the cult of rigorousness, can be also quite useful critical lens to look through, every time when an 'objective scientific expertise,' is called to support political biases. In these cases, the actual authority of science (historically built not only on rigorous method, but also on scientific mistakes), is instrumentalized for political ends. The complexity of scientific attitude and even scientific speaking, when simplified to serve political populism leaves less space for the actual science and opens a bigger terrain for speculations.

Feyerabend theory though, subverts this authoritarian structure by saying that scientific progress and good science not only accommodate but are even based on mistake, not on universal objectivism. A constant dialectical balance of research, mistakes and conclusions is rather closer to what science is, and therefore "absolutely necessary" for the progress of human knowledge (Feyerabend 1970: 22).

Not many, however, read Feyerabend, and not many read history of science at all. Therefore, political or commercial authoritarian structures around scientific expertise are still constantly built at any possible occasion, and they often infiltrate pop-culture. 'Science is the religion of our time' remains a common saying that no longer provokes any critical thought in the general public, neither about science, nor about religion. This statement is commonly accepted now as just another 'truth' about the world. Important for us as artists, when we started working on The Mirror of Faith project, was that although seemingly deprived of meaning, this statement refers to a high authority associated with the role that both religion and science play in society, a result of centuries long struggles between them.

But if we go back to Feyerabend's anarchic epistemology, according to which science progresses through mistakes and through occasional and often not intentional deviations from the protocol of objectivity, we can see how science is actually not a 'religion.' Or at least if we start with the belief that religion is based on a rigorous cannon, then according to the 'against method' theory, science is quite different to a dogmatic, restrictive, rigorous religious

cult. Interestingly enough, scientists often prefer the expression 'I believe' as opposed to the expression 'the scientists had proved,' used most commonly by the media. The latter assumes unmistakability of scientific research while the former accommodates discussion.

MEDIA REPRESENTATION OF THE GOD GENE AND ARTISTIC RESEARCH

Those contrasts between the science, based on error and the 'scientific expertise,' assumed to be unmistakable, is what we, as artists, have been interested to reflect in our project *The Mirror of Faith*. We are interested in the phenomena of science as a 'religion,' and scientific objectivity linked to unmistakability. Assumption of 'objectivity and unmistakability' creates a taboo territory, guarded not by the scientists per-se, but rather by the PRs of science. The 'priests of the cult of objective unmistakability' do not necessarily serve real scientific causes, and therefore they can care less about scientific research, than about the authority of science: or *The Science as Cult*. For science as a Holy Bogeyman can be used when someone wants to 'prove' their political righteousness only if the authority of science has been historically based exclusively on dogmatic cannon and not on mistake as well.

Here is what we did. *The Mirror of Faith* is a bio-art project, related to the research of the molecular biologist Dean Hamer on genetic predisposition of human spirituality. This project is meant to provoke in a playful and humorous manner critical public dialogue about genetic research, exposing some issues this technology and its political and commercial promotion can create. But not only. Most importantly, it is a project, which is looking critically at the intertwining of political and religious authorities and the authority of science, displaying cases where these interconnections can create restrictive social mechanisms that have little to do with scientific advancement, or with transcendental enlightenment. This is the reason we have chosen not just any scientific research, but the one that produces huge media attention and creates controversies by its very subject – like the God Gene research.

In his book, *The God Gene*, Hamer claims certain brain chemicals affect self-transcendence. The actions of these chemicals are linked to a gene called VMAT2 and its specific mutation in Intron 7 upstream of the VMAT2 gene coding sequence.

As mentioned above, our art project does not focus on the significance of the research itself or the discussions about it within the scientific circles. We think these discussions are extremely important, because they reflect rather immediately the controversies that this research subject has the potential to produce on a general public level. We do include these discussions in our process, but in our actual work we pay more attention to the media representation of Hamer's research, and the public discussions that determine its social impact. This is how our attention as artists was first caught. We have been interested in the fuse between secular power and religion, which our societies

(Russia and Bulgaria) have started to experience since the 1990s. This general interest led us to the variety of interpretations of the God Gene research and the speculations about it, many of which oppose each other. We found these discussions to be important reflections of the fuse of the state and the religious powers, that we were initially interested in and we thought that they can shed light on the mechanisms that are driving this fuse. These interpretations of the God Gene research served non-scientific purposes, but rather political and religious ones. Some of them were made by leaders from different Christian religions (Russian Orthodox, Protestant and Roman Catholic) which often contradict each other. For instance, the genetic predisposition of spirituality has been embraced as an inevitable proof of the exceptionality of the religious leaders among the Orthodox priests (Interfax, 2006; Galkin, 2004), while at the same time Protestant priests consider it inappropriate for explaining spirituality, since according to their belief the essence of religious faith is a result of the presence of God and not a body function (Washington Times, 2004).

But why are these different interpretations important and what are they saying about the misuse of the authority of science for political ends? Let's look at a previous research by Dr. Hamer, which may give better view on the controversies these dynamics create. The research we are looking at is on the genetic predisposition of homosexuality--another phenomenon, largely considered to be a result of social influence and the attitude to which has been quite often used to build political programs.

Genetic Predisposition of Homosexuality

Hamer's previous research on the Gay Gene (Grant, 2014) has been actually much more popular than the God Gene and got large publicity in the 1990s. The LGBT community split into two. Part of it was happy that finally nobody will dare to educate them or 'cure' them from the 'disease' of homosexuality through special education (Connor, 1995). The very existence of a material 'carrier' of it in our bodies makes these attempts nonsense. The other part of the LGBT community however, perhaps historically more informed, saw the danger in claiming this research to be a 100% scientific truth that should affect our laws and social practices (Connor, 1995).

Let's look at some quotations from the press, which actually show that those concerns were not just a paranoia. For instance, in the article 'The 'gay gene' is back on the scene. Does new research finally prove that homosexuality can be inherited?,' former chief rabbi Lord Jakobovits says: "Homosexuality is a disability and if people wish to have it eliminated before they have children - because they wish to have grandchildren or for other reasons - I do not see any moral objection for using genetic engineering to limit this particular trend. It would be like correcting many other conditions such as infertility or multiple sclerosis (Connor, 1995)".

The following headline of 'Daily Mail,' although sarcastic, speaks by itself: "Abortion hope after 'gay genes' findings". (Alex Andreou, 2014).

Perhaps reflecting on these discussions and specifically the fear that the gay men will de-populate the world, because they can't have kids, Dr. Hamer said in 1994: "The gene may do the same thing in men and women. So, if you are a man you will be gay, but in a woman, she'll be attracted to men – perhaps more so than usual – and she will have enough children to make up for those that gay men won't have". (Servick, 2014)

Genetic Predisposition of Spirituality

Equally sensational are the headlines from 2004, when *The God Gene* got published: 'Faith Gene Has Been Discovered. Atheists Appeal Not to Panic,' (Galkin, 2004), 'Scientists Have Made Series of Experiments to Research the Existence of God' (Interfax, 2006).

In the second article, we read the response of Father Artemy of The Moscow Patriarchy, who is also a writer, priest and educator, member of the Union of Russian Writers, who says: "We are getting closer to the truth. It would have been strange if after so many years of research, scientists did not discover that on the level of physiology and biochemistry people are predisposed to be believers. We don't have to be afraid of this type of research. Just the opposite – we should applaud it" (Kuzina, 2006).

Perhaps Father Artemy wouldn't have been so excited if only he had read the article *The God Gene* on the Russian website Etologia (which claims to be related to science) where the author Alexander Panchin embraces Hamer's research as helpful for treating spirituality as a genetic disease (Panchin, 2008).

The Anglican clerics were not so positive about the validity of the research. For instance, Rev Dr. John Polkinghorne, a fellow of the Royal Society and a Canon Theologian at Liverpool Cathedral, said: "The idea of a god gene goes against all my personal theological convictions. You can't cut faith down to the lowest common denominator of genetic survival. It shows the poverty of reductionist thinking" (Washington Times, 2004).

The Rev Dr. Walter Houston, the chaplain of Mansfield College, Oxford, and a fellow in theology, said: "Religious belief is not just related to a person's constitution; it's related to society, tradition, character - everything's involved. Having a gene that could do all that seems pretty unlikely to me" (Day, 2004).

The scientific press was also somewhat skeptical. In his review, 'Faith-Boosting Genes' in *Scientific American*, Carl Zimmer sarcastically suggest a more appropriate title of the book *The God Gene*: "A Gene that Accounts for Less Than One Percent of the Variance Found in Scores on Psychological Questionnaires' Designed to Measure a Factor Called Self-Transcendence, which can Signify Everything from Belonging to the Green Party to Believing in ESP, According to one Unpublished, Unreplicated Study" (Zimmer, 2004).

FUSION OF RELIGION AND STATE IN RUSSIA

I would like to focus a little bit more on the context of Russian politics, which are of particular interest to me and to the second artist in this project – Oleg Mavromatti – because we both come from Orthodox Christian countries (Bulgaria and Russia). Since 2000, or may be even earlier, after the dissolution of the Soviet Union, we can easily observe a constantly intensifying fuse between the state and the Orthodox Church power in Russia. In Bulgaria, the process is not that intense, however it is clear that the Bulgarian Orthodox Church obtained stronger political power after the end of the socialist period.



Image 1: “When religion consolidates with politics, inquisition is born” Albert Camus, Internet meme, 2014.

Since the popular media coverage and social networks folklore is of a bigger interest to us in that project than just the academic or journalist texts, here are some Internet memes that reflect the power dynamics between state, religion and science. The following meme, on which we see president Putin and Russian Orthodox Patriarch Kiril supported with a text by Albert Camus: ‘When religion consolidates with the state, inquisition is born’ Albert Camus’ (Image 1).

After so many years of being deprived of primary political power during socialism (although still significant power has always been attached to it) the Church tries to use every mean to return its influence over people’s minds. Secular political power, on its turn, has been trying to utilize the Church authority for its own ends. Perhaps that is the reason why the Russian Orthodox Patriarch Kirill started to receive the title Honoris Causa from variety of academic institutions in Russia and even in Bulgaria (OFFnews, 2012; Interfax, 2012).

На днях в России инициативной группой в "Роскосмосе" был представлен "Скафандр священника", в котором священники Московского патриархата смогут, соблюдая все обряды летать в космос и выполнять там свои функции.



Image 2: 'Recently in Russia at a meeting of "Roskosmos" and initiative committee presented a "Priest's Spacesuit," designed for the priests of the Moscow Patriarchy, who will now be able to successfully perform their religious duties, in the Outer space, according to all requirements of the religious cannon.' Internet meme, 2014.

Another Internet meme reflects on the governmental plans to send Orthodox Priests to Outer space together with the Russian cosmonaut crews (Image 2). These priests' function is similar to the blessing of soldiers before battles, performed for centuries by different religions. This meme proposes a truly dysfunctional space suit for the priest. The source photograph is a real photo of priests participating in the program 'Roskosmos,' looking at a real space suit. The black suit of the priest and the one on the table were added in Photoshop.

The same photograph has been used in a meme which compares the Russian Cosmonauts (penetrated by a cross) with the American Astronauts – who supposedly enjoy the freedom they have from the separation between church and state while drinking beer on the Moon (Image 3).



Image 3: ‘American Astronauts. Russian Cosmonauts,’ Internet meme, 2014.

In such dense environment, it is not hard to understand why the interpretations of Hamer’s research are so polar in Russia and almost mimic what we have seen as a discussion around the Gay Gene. From one side, Christian Orthodox priests are so happy to have been ‘proven’ that their faith is not a sickness, it is not either an induced mass psychosis, it is a ‘natural function of the body.’ Being part of the ‘secular domain,’ because it is a function of the flesh or the matter, spirituality therefore is an attribute equally important and non-detachable from the body like the ability to play chess, to be a talented mathematician or to have blue eyes (Kuzina, 2006). From another side, other people talk about spirituality and religious faith as a disease, perhaps out of fear from the political power of the church, that takes over their freedoms (Panchin, 2008).

To reflect the central issue of embodiment and the harsh juxtaposition within nature/nurture argument, presented in media, we decided to create a literal illustration of these controversies. We decided to produce a genetically modified Transcendental Bacteria of Faith. We ended up modifying yeast,

because this was the organism used in the lab, but also because yeast brought additional conceptual aspect to the project.

By genetically modifying the two most basic organisms in life, bacteria and yeast, with the God Gene (science), that is associated with high levels of spirituality and faith (religion) we thought, we can create the perfect juxtaposition to spotlight the controversies and ignite discussion and critical thought once again. Involvement with this 'absurd scenario' is re-thinking of the notion of 'genetically predisposed faith,' but also 'faith' or 'belief' in the media representation of science and religion.

Dr. Michael Edel and Dr. John Gibling produced bacteria and yeast expressing the GOD gene (VMAT2) and the mutated Intron 7 sequence associated with spirituality. They used the facilities of the Pluripotency Laboratory at the University of Barcelona.

REPRODUCTION OF HAMER EXPERIMENT

We have first reproduced Hamer's experiment. The artist Boryana Rossa and the scientists collected volunteer DNA and synthesized the God Gene by PCR methodology, which was the core of the project. The DNA was collected from three different social and professional groups, possibly carriers of different qualities, associated with their professional occupation, namely groups of scientists, artists and yogis. Following the same work as the molecular biologist Dean Hamer, we found no association of spiritual people with the mutation in the VMAT2 gene.

As an alternative approach, Dr. Michael Edel made synthetic DNA of the gene following standard PCR protocols cloned into a vector (or plasmid) that can express the gene with a GFP (green) tag. For the Intron 7 region, the DNA was sequenced to determine if any of the volunteers have the mutation. The DNA vectors for the normal VMAT2 gene or the mutated Intron 7 region with GFP was found in few of the volunteers. It was transfected into bacteria and yeast cells directly and the green signal measured by confocal microscopy. Artist Boryana Rossa had it, therefore the work can be easily reproduced at any place in the world she is present at.

THE ART PROJECT

Art (similarly to religion) uses metaphors and symbols. However, differently to religious canons, which restrict the interpretation of religious iconography, art allows wider interpretations, a space for discussion, even for dreams and speculations.

Why did we choose to modify bacteria and not just make recreation of Hamer's experiment, open for the public? The first reason for us was because we believe people most often need attractions to engage with a topic that is

new or unfamiliar to them. They have to be 'seduced' to engage with it. This 'attraction' or 'seduction' in our case is The Transcendental Yeast. The art form in our case is not a story, we didn't want it to be literature or film. Although not including a narrative, our art piece had to contain in itself the story of the scientific experiment and the discussion about its media representation. Therefore, we started thinking about a specific form that may contain a narrative being not a narrative itself.

Religious art is often that. It is a symbolic embodiment of a story in an object, painting or sculpture. People get interested in the story behind the object after being emotionally attracted by the 'embodiment' of the concept they observe. Scientific visualization of data carries some of these specificities. Although not symbolic, it speaks only to people who are qualified to read it. Visual data contains in itself a long story, which someone, who observes it, can learn through the interpretation of the professional.

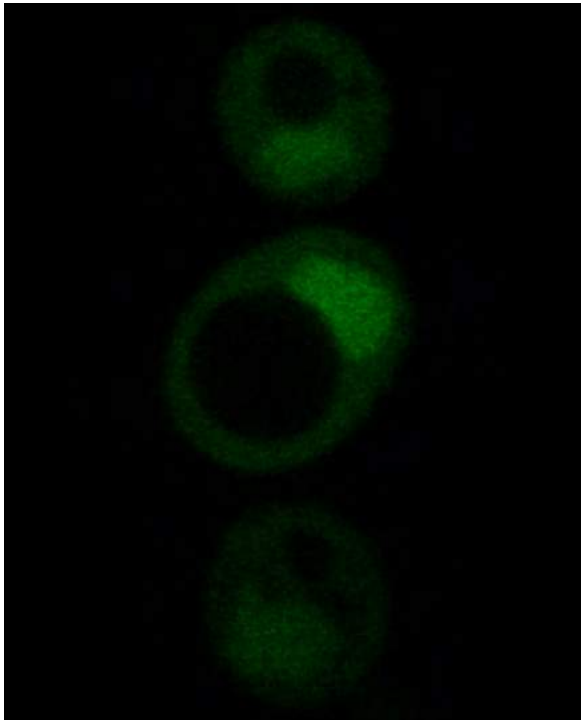


Image 4: Yeast overexpressing the 'God gene'. A specific mutation in Intron 7 upstream of the VMAT2 gene coding sequence with a GFP tag. Courtesy: Mike Edel.

'Experiments,' that involve reading visual data (or touching and seeing), are not only part of the scientific practice but can also be found in the Bible.

Apostle Thomas a.k.a Doubtful Thomas, wanted to touch Christ's wounds to be sure Jesus has really risen from the dead. Researching the cult of St. Thomas, who seems to be acting as a 'scientist,' we found an interesting object – St. Thomas' 'doubtful' finger. A joint of the finger of St. Thomas, is preserved in a golden reliquarium, in the shape of a sun in The Basilica of The Holy Cross in Jerusalem in Rome.¹ To us this combination of a biological material (human bone) and expensive materials used for the production of a symbolic object (the sun shaped reliquarium) represents perfectly a story and is by itself visual and tactile stimuli that can influence us ideologically. To us this was the art genre that we wanted to work in.

Therefore, we have decided to present the genetically modified yeast to the audience as a holy object, similar to a religious relic. We are working on the 'reliquarium' that will contain the petri dish with the living yeast in it. It will be made of glass and metal and will have the shape of a yeast cell. Inside of it will be placed the actual petri dish.

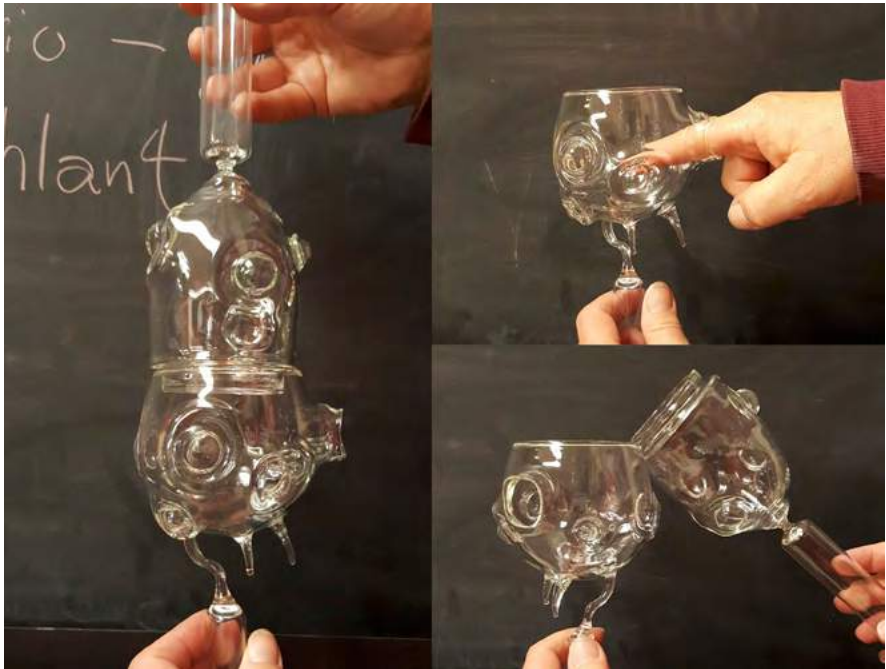


Image 5: First prototype of the reliquarium, which will contain the Transcendental Yeast. Courtesy: Boryana Rossa.

¹ This is the web address of the Basilica di Santa Croce in Gerusalemme, section 'Relics.' <http://www.santacroceroma.it/en/features-3/reliquie.html>

CONCLUSION

We hope this symbolic object will provoke interest in the complicated story that comes before its creation. Nevertheless, since this project hasn't been yet fully completed, we can only speculate if that will be effective. Until then, we will have to mobilize the 'power of our genes' and 'believe' that this will work.

REFERENCES

- Andreou, Alex (2014), 'Can we please stop obsessing about male homosexuality?' The Guardian, February, <https://www.theguardian.com/commentisfree/2014/feb/14/obsessing-about-male-homosexuality>. Accessed 3 September 2017.
- Connor, Steve (1995), 'The 'gay gene' is back on the scene. Does new research finally prove that homosexuality can be inherited?' Independent, November, <http://www.independent.co.uk/news/the-gay-gene-is-back-on-the-scene-1536770.html>. Accessed 3 September 2017.
- Day, Elizabet (2004), 'God gene' discovered by scientist behind gay DNA theory' The Telegraph, November, <http://www.telegraph.co.uk/news/uknews/1476575/God-gene-discovered-by-scientist-behind-gay-DNA-theory.html>. Accessed 3 September 2017.
- Feyerabend, Paul K. (1970), *Against method: outline of an anarchistic theory of knowledge*, Minneapolis: University of Minnesota Press, Retrieved from the University of Minnesota Digital Conservancy, <http://hdl.handle.net/11299/184649>. Accessed 3 September 2017
- Galkin, Yurii (2004), 'Obnaruzen gen veryui. Ateistov prosiyat ne bespokoitsuya' ('Faith Gene Has Been Discovered. Atheists Appeal Not to Panic') Rosiiskaia gazeta, December, <http://www.rg.ru/2004/12/01/gen-very.html>. Accessed 3 September 2017.
- Grant, Bob (2014), 'Zeroing in on the "Gay Gene" The largest study yet of the genetic roots of homosexuality links sexual preference in men to two regions of the genome.' The Scientist, November, <http://www.the-scientist.com/?articles.view/articleNo/41472/title/Zeroing-in-on-the--Gay-Gene-/>. Accessed 3 September 2017.
- Hamer, Dean. (2005), *The God Gene: How Faith Is Hardwired into Our Genes*, New York: Anchor Books.
- Interfax (2016), 'Patriarkh Kiril stal pochetnuim doktorom SPbGU' (Patriarkh Kiril became honoris causa of SPbGU) November, <http://www.interfax.ru/russia/539080>. Accessed 3 September 2017.
- Kuzina, Svetlana (2006). "Iz korespondenta "KP" vyinuli dushu (chast' 2). Uchenye proveli seriyu eksperimentov, chtobyi vuyiasnit', est' li Bog" ('Scientists Have Made Series of Experiments to Decide if Got Exists,') Komsomolskaya pravda. October, <https://www.kp.ru/daily/23789/58476/>. Accessed 3 September 2017.

- OFFnews (2012). 'I Patriarh Kiril I stana doctor honoris kauza' (Patriarh Kiril became honoris causa too'), April, <https://offnews.bg/bulgaria/i-patriarh-kiril-i-stana-doktor-honoris-kauza-49022.html>. Accessed 3 September 2017.
- Panchin, Alexander (2008). 'The God Gene,' *Etologia*, June, <http://ethology.ru/library/?id=319>. Accessed 3 September 2017.
- Servick, Kelly (2014), 'Study of gay brothers may confirm X chromosome link to homosexuality,' *Science Magazine*, November, <http://www.sciencemag.org/news/2014/11/study-gay-brothers-may-confirm-x-chromosome-link-homosexuality>. Accessed 3 September 2017.
- The Washington Times (2004), 'Geneticist claims to have found 'God gene' in humans.' November, <http://www.washingtontimes.com/news/2004/nov/14/20041114-111404-8087r/>. Accessed 3 September 2017.
- Zimmer, Carl (2004), 'Faith boosting genes: a search for the genetic basis of spirituality.' *Scientific American*, 291, pp.110-111. <http://carlzimmer.com/articles/2004.php?subaction=showfull&id=1177190905>. Accessed 3 September 2017.

ABOUT THE AUTHOR

Boryana Rossa is an interdisciplinary artist and curator, Assistant professor in Transmedia at the School of Visual and Performing Arts, Syracuse University, NY. She holds PhD in Electronic Arts (RPI, Troy, NY, 2012). Her works have been shown at 1st and 5th Moscow Biennial; Brooklyn Museum, NY; Museum of Contemporary Art (MUMOK) Vienna; Zurich University of the Arts; 5th Thessaloniki Biennial, Greece; Sofia Arsenal – Museum of Contemporary Art etc. In 2014 Rossa received the NYFA Fellowship Award for Digital/Electronic Arts together with artist-filmmaker Oleg Mavromatti, with whom in 2004 they established UTRAFUTURO art collective. Their works have been shown at the Biennial for Electronic Art, Perth (BEAP); Foundation for Art and Creative Technologies (FACT), Liverpool; Society for Art and Technology (SAT), Montreal etc. In 2009 Rossa curated the bio-art show 'Corpus Extremus (Life+)', at Exit Art, NY She has been one of the initiators of the Bioart Initiative (2007-2009) a collaborative research project between Rensselaer's Arts Department and the Center for Biotechnology and Interdisciplinary Studies (CBIS), Troy, NY.

ADAM ZARETSKY
Marist College, USA

Bioart in Question

ABSTRACT

This interview conducted by Adam Zaretsky asks questions of the bioartist interviewees: Shannon Bell, Sam Bower, Dmitry Bulatov, George Gessert, Kathy High, Ellen K. Levy, Oron Catts & Ionat Zurr and Jennifer Willet. The questions are on a wide range of BioArt and Bioethics topics covering: the sexual economy of scientific research, the eugenic aesthetics of human enhancement, popular fears of mutants and mutation, comparisons between digital platform communication and the germline engineering of life forms, and the potential roles as well as foibles artists can be found playing up to in the scientific context. The answers to these questions knit a wide variety of disparate ideas through a cavalcade of novel ideation due to the fact that the interviewees are so overwhelmingly well versed in unusual and thoughtful responses. All of the interviewees are bioartists as well as deep thinkers with uncommon valorous free thought patterning and visionary sci/art trans-historic visions. The nearly exhaustive permutated concepts reveal a global posse of GMO human transgenic theorists, bioart practitioners and critical minds that want something like accommodations for the very weariness of the human genome.

KEYWORDS

bioart, bioethics, eugenic aesthetics, human enhancement, mutation, germline engineering

QUESTION 1

Adam Zaretsky - I am of the opinion that Scientific Methods are extreme libidinal trophy hunting. I am aware of the gains made in the past hundred years to prolong and spruce up human life, but I still think the urge to research the 'unknown' is predicated on a domineering desire. Are we just variety show primates, scoping and poking 'anyspace in everyway' for brain chemistry rewards? If we are a species capable of altruism, mutualism, humanism and/or love, how are these charismatic myths super-imposable on the history of command and control gore that we seem to be permanently immersed in?

Ellen K. Levy - I see no reason to attribute people's drive to explore the unknown to an urge to dominate rather than out of curiosity or love. Dopamine-driven responses (I assume that is what you mean by 'brain chemistry rewards') seem to be a part of our emotional make-up. As I understand from my reading of Antonio Damasio and Joseph LeDoux, research in neuroscience suggests that our 'gut feelings' derive from feedback from somatic responses like facial expression and that our emotions must always take place in a context. LeDoux's response to his question, "Do Fish Have Feelings Too," is that human consciousness is a result of the expansion of the cortex, something lacking in animals other than mammals. But animals may be conscious in a way consistent with the capabilities of their brain structures. My own and others' experience with animals certainly suggests that many share emotional characteristics with us.

Shannon Bell - Scientific Methods are a discursive attempt to document and comprehend new life forms and death; documentation and discovery often equal control. The desire to contain the unknown is a desire premised on fear - the most common reaction to fear is an attempt to dominate, as we all know. Altruism, mutualism, humanism are the soft and slimy virtues that underpin liberal capitalism. Humanism has always been integrated into discourses of exploitation: colonialism, imperialism, neoimperialism, democracy, and of course, American democratization. One of the serious flaws in Transhumanism is the importation of liberal-human values to the biotechno enhancement of the human. Posthumanism has a much stronger critical edge attempting to develop through enactment new understandings of the self and other, essence, consciousness, intelligence, reason, agency, intimacy, life, embodiment, identity and the body.

Kathy High - While I agree that there is lots of cavalier-conquering-the-Wild-West mentality in much of scientific discovery, and the star system is embedded in the politics of the business, I also think that there is much of science that is reactive and maybe doesn't fall into this category. Much of research is in reaction to a disease, an epidemic, a plague. While I still think there is some heroics being practiced in this arena as well, often I find the impulse of this kind of research human, humane and reasonable in scope. This is the problem solving side of science... the pragmatic "fix-it" side. The Mother Theresa Do Good impulse, but in the end is not so misdirected. But this may only be in the branch of medicine and only with certain doctors. Yes, I have been used as a statistic for doctors who want to use my problem for THEIR drug trial. And they don't listen to me as I attempt alternative methods of treatment, won't hear about other kinds of cures. I know I know... But I think that it is too easy to dismiss scientific methods in this way. Much of what we read and know about would come from the star hitters. But there are teams of other researchers behind them who have very different motives most likely. It just

seems like bad Liberal politics to write all scientific methods off as motivated for gain. I think scientific explorations are motivated by a variety of diverse factors that have changed throughout history and will continue to change: what really motivated Madame Curie, Stephen Hawkings, Craig Venters - all working from very different motivations and for very different goals. Enough said...

Ionat Zurr & Oron Catts - The question reflects more on a limited binary way of viewing the world rather than a more complex view which relay on messy continuum and many different shades of grey: We do not think that one (altruism, mutualism etc.) preclude the other (control, competition, etc.). Rather these different modes of coping with the environment within a social group are intermingled and many times it is not clear what the intentions were and how they were perceived by the other members of the group. The reductionist view of brain chemistry rewards also works perfectly well with altruism and mutualism (not sure about the term humanism), as there are evolutionary benefits for a social beings to behave in these ways. You seem to focus in this question on two strong (but not exclusive) traits of evolution and human history - competition and desire to control (and in both cases you claim that they are sexually driven). You seem to play down cooperation on both grounds. We would argue that our urge to manipulate our surrounding (which is not necessarily of sexual nature) had an evolutionary advantage beyond merely libidinal trophy hunting. With all due respect this question seems to enhance the prevailing capitalist/competition based ideology.

Sam Bower - Curiosity is a fine thing with proven evolutionary advantages. It can help us boil water but can also end up changing our climate. Any impulse to do anything can be seen in a positive or negative light. Even the urge to celebrate beauty and art can be destructive. In the 1890's, Eugene Schieffelin, decided to release into the United States all of the birds mentioned in the works of Shakespeare, including the European starling which has subsequently spread from a few nesting pairs in New York City to become a threat to native species from Alaska to Mexico. The old debate of whether we're born sinners or "noble savages" doesn't really help with the work we have to do. With information comes the opportunity to choose how to act. I believe we can strive to be altruistic and compassionate and apply scientific methods toward understanding the world to help us live more sustainably. There has been a long history of science for science's sake which has distracted our species from more urgent priorities in favor of short-term gains. Unless we believe that it's possible to use our abilities to create a sustainable relationship with the Earth we're doomed to wallow in the unconscious drives which currently dominate our culture.

Dmitry Bulatov - I guess these remarkable in themselves human characteristics have never been typical of man. At best they could be among virtues of a particular outstanding person. For human beings as a biological

species, altruism, mutualism, humanism and other have always been rather a systemic demand, conditions of self-preservation laid down by nature itself. From the moment Homo Sapiens mountaineered to the top of the trophy pyramid and made the surrounding ecosystem his food resource he had already turned from “daylight predator” into “absolute predator”. Such a type of predator (for instance zooplankton, dragonflies, archeosaurs, etc) is known for its ability to “eat” the surrounding ecosystem “trough”. Later on, when man fell out from the trophy pyramid, i.e. stopped being both hunter and food, he turned into “total predator”. This means that since that time until now he has been consuming all organic and inorganic nature for his development and maintenance. He has been doing it as “total predator”. Therefore all the principles of man’s existence including his way of thinking and interaction with the world can be characterized as “predatory”. I don’t think there are any reasons that could change that aggressive nature of human being.

George Gessert - I can’t speak for scientists. In art trophy hunting is not a very interesting part of the picture, but libido is. Certain kinds of living things delight and fascinate me, so I work with them. Since live art breaks with several tens of thousands of years of tradition, it matches the extremity of our times. (I doubt that that will change soon.) Beyond exploring genetic art I don’t know how I as an artist can counter the destructive capabilities of humankind today.

Jennifer Willet - Scientific discovery as institutionalized control measures: Last week I was listening to a CBC radio program called Ideas. They were interviewing a historian (who’s name is lost as I was washing dishes). She was trying to explain the horror evoked by an evolutionary model when presented to a society that believed in the divine nature of man. How it would be deeply antithetical to a person’s sense of self and being in the universe to imagine a biological genealogy that linked man with all species on the planet - when all other sources (mother, priest, teacher, and possibly the inner voice) had attested to the distinct and divine otherness of the Homo Sapiens from all animals - toiling in their own shit and sex. (my language - not hers) She continued to link this ‘paradigm shift’ with the one we are undergoing today in the biological sciences, and more specifically, the repercussions of contemporary research in the public conception of human existence and its place in the biological world. She argues, that with the mass adoption of evolutionary models, human civilization (western civilization) had adopted a model where man is the fullest extent of the evolutionary chain. Although we do not see ourselves as divine creatures - we do see ourselves as at the top of the heap. She says with current genetic and biotechnological investigations - this model too will fail - and it will be a catastrophic revelation for the contemporary ego. In other words. Yes. I see science as a self-reinforcing system of understanding (and control through understanding). But sometimes this drive works against itself - providing data that only confirms our relative insignificance and lack of control - see also astronomy.

QUESTION 2

Adam Zaretsky - You all know that I am obsessed by the prospects (and perils) of Transgenic Humanity. My rather dirty mania for this rather painful process in no way stops me from critiquing the probable and potential uses or misuses of molecular biology as applied to the Human Genome. With a firm understanding of how our shared global history of Eugenic Aesthetics has been applied in the past and present... do you think that there is any path towards human enhancement that can be considered anything other than a piss in the genepool? Is there an application of the conceptually 'new and improved' human that you could find valid? What is 'better' when applied to techno-adjusted human offspring?

Kathy High - I think about this question all the time. I know with my personal autoimmune diseases that if scientists locate the associated genes they will want to eliminate these particular illnesses for future generations. But autoimmune diseases are systemic problems and complexly linked to our psyche. So I suspect they cannot be eliminated without introducing something in their place. This is most likely the way with many diseases work as well. So some of the "fixes" may backfire in the end - as I don't really trust that doctors understand the nature of many illnesses. But I also think that much of our development is wrapped up in variations and the constant adaptation to change. And since our environment is changing irreversibly - i.e. more pollution, less available water, faster paced cultures, more GMO foods - perhaps transgenic alternatives will provide ways to cope with these changes. Maybe we will be able to live on less oxygen, absorb more nutrients from less nutritional foods, etc. Of course, in the end where does that leave us?? Will we become more efficient processing machines - able to eliminate more and more by-product and dirt to stay alive? Can we introduce bacteria to defend from ravenous bacteria? Can we mutate with the other mutations?? Maybe we can become cockroaches? And bottom line is all I really want is a tail or wings...

Jennifer Willet - From the universal to the specific: The universal answer is: no. Any changes in the human gene pool, only constitutes difference, not better or worse in my mind. Thomas Lynch reminds us in his work *The Undertaking: Life Studies from the Dismal Trade* of the most important statistic. 100% of us will die. I can't imagine a transgenic alteration that could change this fundamental flaw (if it even is a flaw). And if it were possible to circumnavigate death - this would only contribute to the growing problem of over population. Nope. Absolutely not. No. The specific answer is: yes. Every day, there are real people in the world - just like you and me - who are suffering on a very personal level from horrific diseases and deformities. All the statistics in the world are of no comfort to the afflicted individual, and their loved ones, be they upper class American citizens receiving the best care that private insurance has to offer, or an impoverished individual in Africa with no health care or assistance. Crippling disease sucks, and if there is anything we can do to lessen the pain, avoid

infection, and prolong life - then the more the better. And if you want to throw in a glow in the dark belly-button or a permanent fur coat - whatever turns your crank.

Shannon Bell - As long as the new human is conceptualized inside capitalist innovations paradigms the baggage of the old human will accompany and prevail, albeit perhaps in new forms.

Ionat Zurr & Oron Catts - This extremely anthropocentric question has no real relevance to life in general. In the grand scheme of life we are acting only as an accelerated random mutagenic agent. There is no doubt that we will see some interesting experimentation with transgenic humanity. This is the main area that we feel comfortable with the inequality in access to health care related services. We hope that this will be one of the very few instances in which the rich will act as guinea-pigs for the rest of us.

Sam Bower - While it's a fascinating field and worth exploring, I believe that unless we uncover some preexisting culturally transmittable enlightenment gene which would help catalyze a global effort to work together to solve the urgent problems we face as a species, Transgenic Humanity is unlikely to be more than a geological footnote. Genetic improvements are likely to be only a small part of the overall context of being human, blessed with unpredictable side-effects, limited in availability and more likely to be of limited utility (better digestion, resistance to anthrax, etc.) than a complete remodel. If somehow an improved Homo Sapiens 2.0 emerged from genetic tinkering would it find regular humans a threat? I think we have more urgent things to attend to than rearranging the deck chairs by the gene pool or adding Eugenic fears and chaos to the mix. I doubt we can stop people from tinkering out of ambition, curiosity or greed, though, while they have the chance. Perhaps when the oil runs out and plagues scour the Earth a few herds of super humans will find ways to prosper amid the recovering landscapes. At that point, more power to them, we had our chance.

Ellen K. Levy - Let me repeat Daniel Kevles's comment about eugenics that, "to design an angel it remained necessary to know the specifications of heaven." It still holds true.

Dmitry Bulatov - I don't understand at all why we, when talking about "improvement of (bio)instrumental characteristics, always bind them up with enhancement of human nature. At least there is a basis to talk about improvement of functional characteristics of "prosthesis", about perfection of technical aspects of mechanisms, after all about endowing these mechanisms with metabolic characteristics. But why and how can a new version of inner "bioprosthesis" lead to inner perfection of human being? It's evident that the

rhetorical notions of adherents of techno-evolution are being substituted: making biological characteristics of Homo Sapiens body more flexible we improve his inner Nature in no way. Above all, now it's not about "improvement" of human nature but about resistance to his instincts of techno-biological self-destruction. Because the "artificial" is always dependent, and free will is impossible without inner perfection.

George Gessert - In my opinion, germ line manipulation to eradicate hereditary diseases such as diabetes is extremely desirable. Of course questions immediately arise. What about genes that can cause sickness, but sometimes have benefits, like the sickle cell gene? What about bipolar syndrome? Where to draw lines? But the key thing is that when significant physical suffering can be alleviated, we are on perilous ethical grounds to advocate withholding help. Lee Silver may be right that medical interventions will open the doors for nonpathological interventions. When it comes to such things as height, weight, eye color, intelligence, and musical ability he recommends a *laissez faire* approach, which would mean that in the foreseeable future the rich and their offspring would disproportionately receive germline treatments for socially desirable attributes. But social success is not synonymous with biological success, so the longterm advantages of such things as genetically engineered slimness are much more uncertain than may appear on first glance. I am grateful to those who have worked and are working from the inside of science and industry to develop reasonable regulations. Still, regulation in itself is only a holding action because whenever money is to be made foxes will try to take over the chicken coop. In the long term, diversity may be our best bet. The more competing biotechnological interests and goals the better off we are likely to be. We need biotechnology with built-in checks and balances, a social, political, and economic ecology extending far beyond the reach of industry and science into every corner of society and the world. In the meantime we need informed and sustained discussion. Discussion should reach out to everyone, because everyone is likely to be effected by biotechnology. Art can play a major role in this.

QUESTION 3

Adam Zaretsky - Is the WWW a more potent mutagenic force than GMOs? Do linguistic tropes and memic mimicry have more effect on future life (even inherited traits) than any 'tailored' applications of developmental manipulation? Let me slow down and lay this out. We are all speakers/writers and, in some way or another, biotechnological practitioners of live art. Though the commonalities might end there, I am asking for a comparison of these two processes, in terms of the evolutionary effect: Germline Engineering of Life Forms and Interpersonal Communication. I'm asking in an evolutionary sense and I am sincere in my own indecision on this point. It is rather important, as technology and verbiage

both have their roles in a process that decides, sometimes rather abruptly: Which organisms live and which die? Who selects which mate for whom? Who decides not to or is not allowed to reproduce and why? Who is 'assisted' with a Mutagenic New Reproductive Technology and what are they to whom? What differences are considered of real worth and what is delegated as pestilence? Although I am quite dubious of the Homo Sapiens ability to fully grasp the river of life and direct it in any causal way, I really believe that both recombinant splicing of DNA and expressed ideation are processes that have a decisive effect on which of terra's organisms survive the future, what shape they may become (anatomically and as beings) and how stupid life on Earth may be if we play too hard. When it comes to life's futures, is the pen mightier than the insertational mutagenesis or vice versa and why?

Dmitry Bulatov - Your comparison of Germline Engineering and Interpersonal Communication is not accidental and not surprising, because both have language in their basis. Functioning and development of language refracted through our minds make our technology feasible. If technology and information [information: from Latin "creation"] make physical forcing more effective, it's first of all an evidence of repressive functions of language itself. Because language is a true fascist, for the essence of fascism is not in forbidding but in forcing one to say something. That is why the process of writing, technological development in general and insertational mutagenesis in particular are phenomena all of a kind generated by the prescribing, directive nature of language. Therefore non-freedom and compulsion always appear through them.

Jennifer Willet - BOTH. Generally, I think that North American Society has been watching too much CSI. Somehow, based on this fictitious representation of forensics - amongst so many other gross media misrepresentations of both the biological and computational sciences - we have completely misconstrued the qualities and traits of both technologies, and the nature of the overlap and relationship between the two. Programming a website, and sprinkling dna over a petri dish are two completely different actions. Both have great significance in evolving outcomes on very different levels. Are you asking me Huxley or Orwell? The answer is both.

Ionat Zurr & Oron Catts - As you mentioned and argued so eloquently they both work together... however you cannot resist putting things in a binary opposition again while attaching comparative value to them (why is it so popular in the US rhetoric lately?). What we see throughout human history is the gradual merging of both biological and cultural/technological evolutions. To use Dawkins term: memes and genes are coming together. Trying to determine which is more important is nonsensical. An obvious example: if a huge asteroid will hit earth in 120 years there is a good chance that we will be back to pure biological evolution. But if technology (developed through what can be referred to as a

product of memetic evolution) will find a way to divert it - you could say that the pen mightier than the biological mutagenesis. So?

Sam Bower - We've tried cultural extinction before and it works pretty well. Australopithecines and their fuzzier ilk had their day and created genetic ideas for the rest of us to try out and refine over millions of years. Given what we now understand of sustainable cultures (our Pleistocene ancestors had it down) we are in a better position to apply some of their ideas more widely at a pace we can comprehend. The unprecedented availability of information, good ideas and global instant communication has the real potential to help today's humans survive the current lack of planning that threatens the globe. GMOs, much like the aforementioned European Starling, have the potential to spin out of control in wildly unpredictable ways. I think we're far likelier to be able to direct the spread of useful ideas throughout the world than we are unprecedented DNA combinations in the wild. Both can be devastating if applied unethically but we are simply more practiced at managing people and ideas than manipulating gene splices.

Kathy High - And what about including interspecies communication? I need to throw this into the mix as I also think it is crucial for this dialogue. Because we affect the mutation of other species more than just ours and have for generations through selective breeding, grafting and cross-pollination, so our ability to speak with these species is vital. Your question is really asking if our words can effect change? Could we effect and intervene into the scientific process through our questions and inquiries? Can we engage in a way to shape the decision of where the tools of science might be applied next? I think this is why we are all engaged in the kind of art we are at present. For me, I want to work in a way to interject another view, a different perspective, and ask a question that maybe isn't asked. Much of scientific practices are all questionable procedures in some way? Who gets to ask the questions and who listens to them? Can artists and their works open up a more public dialogue about science? Can we encourage and build that?

Ellen K. Levy - Many scientists (certainly Gould and Dawkins are notable in this respect) have pointed out that culture is Lamarckian in its nature, and it is certainly much quicker than evolution. I think it extremely interesting that the current research in 'directed mutagenesis' (an oxymoron?) in bacteria raises the possibility of a Lamarckian approach as opposed to a Darwinian approach to evolution. It would seem to fundamentally challenge standard evolutionary theory, which emphasizes natural selection and random variation and instead emphasize change (in bacteria) as due to environmental stimuli. My (only partial) understanding is that it involves reprogramming a DNA molecule that in turn directs the synthesis of a protein with an exchanged amino acid with the aim of creating enzymes with new specificities. It therefore would seem to offer

a useful way to study gene expression and the relationships between structure and function of a protein. I gather that the hope is that some fundamental understanding of biology might be gained which could answer the question of whether there is any direction in evolution, even to a small degree.

George Gessert - In the grand scheme of things, who knows? But for me personally, the pen and paintbrush are essential tools of living and discovery. The political dimension of discovery in art, discovery of what is literally right before one's eyes, is that by defining experience for ourselves we come up against images and powers - not just biotechnological - that would define experience for us and direct our lives. Art may or may not significantly affect the world, but that's no different from most other human activities. I've tried horticulture, teaching, graphic arts, local politics, and forest management, and art is the best way available to me.

QUESTION 4

Adam Zaretsky - Can we talk a little bit about Mutaphobia? Mutation is a natural process. We are all mutants. We are all off the locus. Chromosomes shuffle, viruses insert, environments alter, transcripts dupe inaccurately, your parents choose each other for unverifiable reasons, so... what are we afraid of? We Humans are quite advanced at couching xenophobia, greed and class warfare in the rhetoric of benevolence. Can we consider the project of fast-forwarding difference amorally, if even for a moment? Is the Monster not our equal? By all means, lets critique the gene-centric ideologues of these ideological times. But, what if health, knowledge, competition, profit, creativity and even the carnivalesque were just excuses for applying engineering towards living, radical difference? Do we fear chance itself? Do we want to preserve an Ideal Nature so we can blame her later for any pathogenic extinction? Is fear of the mutant a fear of guilt? Shouldn't we feel guilty for Mutaphobia in the first place? Finally, after a sort of Kabalistic permutative exhaustion, do we fear the confrontation of all possibility? Is this a fear of Mortality? Banality? Complexity? Anarchy? Genomic Democracy? Or is there something else bothering us?

George Gessert - People with debilitating abnormalities are as human as everyone else and sometimes have uniquely valuable qualities of character due precisely to abnormality. But that said, the questions blur differences among mutation, gene recombination, and gene transfer and conflates all of these with environmentally created abnormalities. The questions blur differences among mutation, gene recombination, and gene transfer. We are right to fear biological mutation (deliberately induced or not) because something like 90% of mutations are lethal, 5% nonlethal but damaging, 4% neutral and 1% advantageous. The overwhelming majority of mutations are undesirable except from the perspectives of science fiction and the death wish. As for that tiny

percentage of blessed mutants: when they're human, by definition they'll do just fine. The realm in which we may not recognize the value of mutation is among nonhumans. How to recognize the virtues of a genuinely new plant or animal has always been a challenge to breeders. In general breeders seek small variations on what they already know. The question of what is "superior" arises only when consciousness is involved. This is why the history of plant and animal breeding is so important today: they demonstrate exactly what happens when consciousness gets involved. It's mostly a cautionary tale. Gene recombination is quite different from mutation, and ordinarily does not produce serious problems. So we have little to fear from gene recombination, at least in our own species. Gene transfer via biotechnology sometimes produces extremely dramatic changes such as blue roses and glowing tobacco plants. These kinds of changes have seized the public's imagination, and aroused many hopes and fears. A fair number of artists are interested in gene transfer. I certainly am, but I wouldn't do it to a human being. When we open this door, we open the door to human speciation.

Ionat Zurr & Oron Catts - Let us argue with the main premise of your question -we only fear some types of mutants and monsters while we celebrate other types. Human culture seems to admire extreme individuals; our culture celebrates sports people and models which are plain freaks. So what was the question?

Shannon Bell - Monsters are our equal. The socially created fine line between beauty and monstrosity is always shifting. We fear and fetishize chance. ImMortality and Banality couple. What is bothering us is the play between chance and control.

Kathy High - The etymology of mutant and mutation: funny, how "mutation" simply implies change - unbiased and neutral. But "mutant" implies a further judgment of the object becoming strange and odd, with a leaning towards the negative. So where exactly does the change become viewed as strange?? The process is ok but the product is threatening? My problem with encouraging mutation is the corporate dominance within science now. The fact that GMOs can illegally be found in China in different parts of Mexico where they were not grown is a kind of mutation that has been dominated by commerce in the name of science. So I don't trust who will mutate what and for what ends?

Sam Bower - From a spiritual perspective we may doubt the idea that we are immortal souls reincarnating into different shapes so we can help our spirits evolve into a deeper understanding of context. So, we fixate on the form and become attached to our current identities. What's bothering us is that it pains us to die and make a mess of things and our amnesia makes compassion difficult because the stakes seem so high.

Dmitry Bulatov - Mutaphobia is just one of the elements of the discussion extensively evolving in public consciousness. Now everyone is occupied with research of the Different (Alien, Mutant, etc). Unbridled speculations based on differences most brightly show themselves in the mass media and pop-culture, where the key problem is always what kind the Different is and where the Different is. All of a sudden it turns out that the whole mechanism of the liberal values of contemporary society was ideally tuned for liberation, understanding and recognition of differences. Relying on illusions of exchange and contact the society aims at destruction of the notion Different itself after overcoming estrangement of differences. However it doesn't make the situation any better, on the contrary, we've recently become witnesses of a series of catastrophes, the logical consequence of such a strategy. For me being brought up in the USSR totalitarian regime it's quite obvious that the root of the problems are not in the phenomenon of the Different, but in the reasons of appearance of The same. Instead of pet subjects of pop-art and pop-culture where the difference between man and machine, man and mutant is dominating, we must pay our attention to the tragedy of similarity, typicalness, and programmability. Contemporary bio- and gene engineering posits this very subject precisely. Impetuous development of reproductive technologies denotes abundance and overproduction of The same, unrestrained reproduction of typical and identical. One should beware not of distinctions of the Different (distinctions allow us defining ourselves as individuals) but of the dangerous proximity of one' own copies (where indistinguishability turns into reality).

Jennifer Willet - Let me tell you a little story. For years I worked part-time in a bridal shop selling consignment wedding dresses, cake toppers, and custom made wedding paraphernalia. It paid for school - and proved a very interesting interface with the outside world. On a particularly slow day I was visiting with the owner and her daughter, two practicing Christians. We were making fun of my toes. It was a hot day, and I wore sandals - witch I often do not - because I have the shortest wiggly little toes I've ever seen. (My Aunt used to say they looked like someone had cut them off with an axe.) To rebut their jokes - I said that I had read somewhere that in a biological sense it seems that we do not really need our toes anymore, and that scientists believe that we might be evolving towards a toeless foot for mankind. So, possibly, my little toes are indicative of my evolutionary station in life, as closer to the ideal then my colleagues. The room went quiet. My boss pursed her lips. She said, "We do not believe in evolution - we believe in Creation."

QUESTION 5

Adam Zaretsky - This last question pertains to Steve Kurtz's case. Various attacks have been leveled at Artworks that are imbedded in Biotechnical process. Some say that Biology as an Arts process is merely a promotional tool

for Big Science. However naïve or megalomaniacal the artist, the net result of any Biological Artwork amounts to the callusing of the social to ease the future acceptance of any and all biotech innovative/invasive change. The other role branded onto artists exploring the technoculture of Biology is the foil. The FBI's implied subtext to Steve K.'s case is, "artists and other unprofessional, non-scientists shouldn't play with things they can't comprehend." This is damaging to the culture of the home hobbyist and tends to support the mystification of speculation as a process for the trained mind only. It also implies that the lifeworld would be under the thumb of command and control, "if it weren't for those meddling kids!" This is a preposterous intimation. Is your aura as an artist that of the botchy art jester who shows the public how Science is too complex for your average citizen or are you an opportunistic industrial public relations airtime jockey looking for a paycheck in your backdoor? Is there a social role for tech savvy Bioartists that isn't automatically either industry or incompetent? How do you navigate that precipice in your art process/practice?

Ionat Zurr & Oron Catts - We believe it is possible but tricky for a bioartist to maintain a satisfactory level of autonomy, while being aware of the risk in domesticating these technologies (or becoming reluctant or willing agents in the promotion and normalization of biotech). By constantly re-examining our own practice and strategies of dealing with issues of partial-life, our work through TC&A is trying to actively map this new terrain, in the hope of locating the traps which are inherently there. Autonomous art can only be, according to Kockelren, "that form of art which places a walkable platform above our constitutional lack of foundation. It can do so by testing the mediations we require for that. In that way, art is an accomplice to the diffusion of conventional form of disciplining, but at the same time it represents a critical potential to resist them". Irony is yet another great tool which enables keeping the artist constantly re-negotiating their position without falling into self righteousness or complete cynicism.

Oron Catts - Through my work in SymbioticA I try to democratize the "secret" knowledge of life science to allow people to engage with the manipulation of living systems and form a phenomenological, visceral and informed position.

Kathy High - I have always liked tool builders and DIY (do-it-yourself). I am not an expert. But from an amateur's perspective I investigate, and ask questions. I want to encourage everyone who is not a scientist to do the same. I want more public bio-art works to elicit questions and debates and arguments. I know CAE and Steve Kurtz and others have been doing this for a long time - demystifying processes. I am just following suit. I work with animals. I want people to think about what it means to work with animals, not in a way to dismiss all science practices with animals, but to create a collaboration between experimenters and experiments. I want to give more autonomy to the subjects and to have them form the questions that need to be asked as well.

Ellen K. Levy - It strikes me that a number of people, Eugene Thacker among them, have clearly voiced some of the conflicts between medical health needs and biotechnology's market interests. Such conflicts have fueled certain kinds of artistic activism such as Steve's as well as political activism from others (e.g., Action Aid, Newman and Rifkin). Remember that the Science Wars were about the resistance of some scientists to having the general public intrude on their territory. In this regard, during the Sokol hoax a deliberately falsified account of science was published in a well-regarded literary journal to embarrass the post-modern editors and readership. Some groups read a subtext into this hoax as the wish on the part of some scientists to cast doubt on the public's abilities to deal with science. Obviously the public is entitled to gain an understanding of the science of biotechnology as well as an understanding of its relationship to economics and other interests. Genetic 'home kits' like those of Natalie Jeremijenko effectively underscore those beliefs. Please note that I agree with many others that we are not automatically entitled to release genetically altered organisms into the environment and do not see that as contradicting our rights to understanding techniques of biotechnology. I also think it fair game to consider who is most likely to make best use of limited resources for scientific research. I do wonder if/how artists can make significant contributions in the area for example of 'directed mutagenesis' since it presupposes rigorous scientific background, including establishing productive experimental conditions and then correctly interpreting the results. I think art is an adaptive process to rapid environmental changes and innovations (such as those brought about by biotechnology), but that does not mean that the answers for Bioartists are as polarized as you suggest (i.e., either industry or incompetence). Indeed, as you will agree, some of the artists are performing scientific critiques and exposing built-in assumptions. It is always difficult to proceed when there are few relevant models for bioart. However there are some strong historical models of art and science exchanges that might be fruitful to consider. Think of the dynamic exchanges between Galileo and Cigoli or between Al Copley and Waddington. I also believe that people should address the other side of the coin (of bioart). While wet labs are now accessible to some creative artists, perhaps we should make studios accessible to scientists who wish to tap their own creative power in a different medium.

George Gessert - Politicians have always tried to use art and science to enhance their power, and always will. To the extent that genetic art gains public attention, we can expect our works to be used for ends that we oppose. It's one of the oldest stories in art, but we shouldn't let it stop us from doing our work. Part of my faith as an artist is that by mastering languages of art, and by saying what we have to say with everything that we can bring to bear, we can communicate in spite of those who try to use us for narrow ends. Now and in the future there will be individuals capable of looking closely and carefully at works or records of works, and benefit. But if there are not such individuals,

then in the words of Melville, consider the magniminity of the sea which leaves no records. We operate in cultural contexts over which we have little or no control. Art is a whirlpool persisting for thousands of years where aesthetics have always been more important than politics or science. Intermittently I have been politically active (and my immediate family is very active), but in my art I put primary emphasis on aesthetic considerations. Many kinds of corruption abide in aestheticism, but it can also be a realm of wonder, freedom, and connection with our human and nonhuman ancestors. It can provide a glimpse of wholeness. I try to remember the original reasons I was drawn to art as a child, and work from there.

Dmitry Bulatov - I noticed long ago that the system that fights against terrorism, in the course of time, becomes similar to the terrorist one. It happened to Russia and USA, Great Britain and Spain before them. After all terror is not only horror of violence, but also horror of intimidation. In the pre-revolutionary Russia, for example, the terrorist groups, which staged murderous assault of the tsar, incurred a more severe punishment than one that was proper for a real murderous assault. It allows one to draw the conclusion that a murderous assault on the principle of reality itself is a more serious offence than real aggression. This statement applies not only to Steve K., but in general to all artists who have doubts about the established order of reality. Concerning the methods and strategies of bioartists. In my opinion, it's an inexcusable folly to consider art as a promotional tool for science, politics and any other field. Because such art is whatever (PR, science, politics) but not art. Art, like any self-evolving system, is always preoccupied only with conditions and possibilities of its existence. Art can only be existent by means of attempts to stage its own death. Not the death of the artist or the spectator, not of a human being at all, for man is not interesting for it and his life and death are also not interesting for art. Man is interesting for mass culture only. Art is interested just in its own death. Artwork is interesting as long as it stages this death again and ritually reproduces it. Artwork can do so by trying to realize this operation of contemplation again and again, by providing new and new impossibilities, new and new bans and prohibitions. Contemporary art is, as a matter of fact, the tabooing of practice of art itself. This tabooing is understood as one more type of real practice. Every following artwork prohibits something to us, something, what we haven't yet guessed about so that it can be prohibited. Most striking is that we always discover, when we see a new artwork, that something happened to be prohibited, but we all survived; we still can look at it. Somehow, there is nothing to see anymore; everything has already disappeared, broken down; nothing can be found anymore; there is only rubbish around, and, nevertheless, it happens that we still look and it happens that somethings can be prohibited; something impossible can still be done, and we all shall still look at it. Today, we have a very rare moment for art history, a chance to have another look, this time in the light of biotic and genetic technologies, at the total image of art, i.e. at his majestic corpse. My own tactics

in contemporary art are based on the documenting of these very prohibitions and impossibilities. Actually this work consists in revealing the prerequisites of appearance of a new environment, the creation of its ontology and the description of environmental ethics and aesthetics. In short, it's the designing of a new media phenomenon, i.e. it's presupposed that a new artistic reality emerges with its obverse of system benefit and reverse of system problems. Testing of these obverses and reverses in respect to the art system (neither human being nor society, but art system!), works on shifting stresses which is a strategic task of contemporary artist.

Sam Bower - I run an online museum (www.greenmuseum.org) and my own history as a collaborative and solo artist is less about the techno-fetishism of cutting-edge science and more about how my own abilities and aesthetics can be of use to the world in other ways. In terms of lasting impact, art which principally comments about issues ultimately relies on humans to apply what they learn and then change their behavior out in the world. It can yield great results on a vast scale if the ideas catch on but risks being subsumed into the larger discursive babble of humanity if it doesn't, leaving very little physical trace, besides a bit of landfill. An artwork designed principally for non-humans (art that controls erosion, creates habitat, etc.) can fail to work as a physical intervention or fail as a cultural meme and literally disappear into the landscape, living on as an isolated good deed like a tree in the forest where no one hears it grow. Unless it becomes part of the larger human story its message and larger impact as a beneficial idea which could be propagated remains mute or limited. The challenge of making art that makes a difference is perhaps about striking a balance between addressing the larger cultural needs of our society and the meta-human Gaian concerns of our planet. If we strive to address more than one audience with our work we might be better able to mitigate the dangers of being co-opted or misunderstood by any one group. I often ask myself what artworks the trees would like. The wider our aesthetic net is and the more it is in support of values we believe in, the more difficult it will be for any one group to control and the greater impact we are likely to have.

Shannon Bell - Artists, artwork, and artspace can function as sources and sites of knowledge and critique.

CREDITS

This interview was originally published online as "Bio Art in Question: Shannon Bell, Sam Bower, Dmitry Bulatov, George Gessert, Kathy High, Ellen K. Levy, Oron Catts & Ionat Zurr and Jennifer Willet by Adam Zaretsky" in CIAC Electronic Magazine (No. 23 - Fall 2005), a publication by the Montreal International Center for Contemporary Art, edited by Anne-Marie Boisvert and with translation by Anne-Marie Boisvert, Serge Marcoux and Ron Ross.

ABOUT THE AUTHOR

Adam Zaretsky, Ph.D. is a Wet-Lab Art Practitioner mixing Ecology, Biotechnology, Non-human Relations, Body Performance and Gastronomy. Zaretsky stages lively, hands-on bioart production labs based on topics such as: foreign species invasion (pure/impure), radical food science (edible/inedible), jazz bioinformatics (code/flesh), tissue culture (undead/semi-alive), transgenic design issues (traits/desires), interactive ethology (person/machine/non-human) and physiology (performance/stress). A former researcher at the MIT department of biology, for the past decade Zaretsky has been teaching an experimental bioart class called VivoArts at: San Francisco State University (SFSU), SymbioticA (UWA), Rensselaer Polytechnic Institute (RPI), University of Leiden's The Arts and Genomic Centre (TAGC), and with the Waag Society. Last year he taught DIY-IGM (Do It Yourself Inherited Genetic Modification of the Human Genome) at Carnegie Mellon (CMU) and New York University (NYU). He also runs a public life arts school: VASTAL (The Vivoarts School for Transgenic Aesthetics Ltd.) His art practice focuses on an array of legal, ethical, social and libidinal implications of biotechnological materials and methods with a focus on transgenic humans. He is currently a Professor of Media Arts in the School of Communication and the Arts at Marist College and resides in Woodstock, New York.

Email: vastalschool@gmail.com

Nonplace

ROBERTA BUIANI

The Fields Institute for research in mathematical sciences

In Vivo: ArtSci practices in unexpected spaces Or...Squatting Academia for #sciart

ABSTRACT

Located at the entrance of science departments, in proximity of laboratories, or in busy areas of transition, many cabinets and showcases at universities and scientific institutions lie empty or underutilized. Some contain outdated conference posters, or dusty scientific objects that have been forgotten there for years. Others lie empty. The ceaseless flow of bodies walking past these cabinets – some running to meetings, some checking their schedule, some immersed in their thoughts – rarely notice them.

The neglect of these cabinets seems to confirm well-established ideas about science institutions as reclusive spaces where secrecy reigns, and communication with the outside world is either underappreciated or prohibited. But at a closer look, this is not the case: those seemingly ignored and neglected cabinets have fascinating and compelling stories that speak to their mobility, their past uses and their owners; laboratories in their proximity burst of excitement and boredom, frustration and euphoria, their machineries being constantly fabricated, rethought, dismantled or replaced; in these laboratories, individuals, objects and instruments come to life in complicated ways. These objects, human relations and stories are forming complex ecologies that are very much alive.

Between October 2016 and March 2017, twelve artists active in a variety of practices at the intersection of Art and Science (bioart, kinetic art, electronic art, sound art, visual art) were asked to interact with scientists whose practice unfolds in the proximity of these cabinets and with the objects and instruments they work with and produce. This resulted in The Cabinet Project (Toronto, Apr4-May24), a distributed exhibition featuring 10 interdisciplinary installations. The main goal of the project was to make the above-mentioned ecologies visible, by inviting the public to explore those installations located right next to the places where science was made. The installations would tell stories that humanized science and emphasized the benefits emerging from the collaboration across the sciences and the arts. In fact, the Cabinet Project ended up breaking many more rules than initially expected: its in vivo approach gave the general public an opportunity to re-discover the space of the university as a public space

(and not a private or secret space) where the scientific, the social, the artistic intersect with the urban fabric of the city. In fact, one may define this gesture of reclaiming these spaces a form of squatting: squatting for #sciart.

FINDING THE INVISIBLE

Although often immersed in, or intersecting with the city both architectonically and environmentally, universities seem to belong to a parallel universe. Their isolation is interpreted at times as a sign of elitism and authoritative secrecy. They just appear to be a –very visible and very much embedded – component of the city that “exists” and needs to be acknowledged, but that has no material connection with its surroundings. One could say that the myth of the “ivory tower” is not a myth after all and suits the university like a cozy glove: assumptions, elitism and professional separatism have created a palpable division between the city and the university.

Among the unnamed facades and the anonymous buildings bejeweling the heterogeneous and sometimes quintessentially utilitarian architectures populating the university, science buildings and departments excel in displaying their reluctance – or inability – to disclose their content. Entering a science department is like accessing a strange jungle: flights of corridors, locked rooms marked by numbers and acronyms welcome the wandering visitor. These acronyms should be descriptive of the activities and the experiments being conducted behind these close doors. However, they don’t offer any clue; they can only be open with the right key or a magic swipe card. But even if curious visitors were able to have a quick look into those labs, they would probably be up for some disappointment: they will find instruments, scattered material in boxes, some posters, a pile of journals but they will hardly be able to make sense of them. While instruments are just giant black boxes (Latour, 1988) to most people, the untidiness of the typical lab would probably be a letdown to those expecting to see the traditional aseptic coldness of the lab as it is portrayed in many science fiction movies.

But receiving more information regarding the research being executed will not tell the visitor anything particularly interesting and intriguing that will spark their imagination in new ways or that will enable them to seize the essence of this strange world lying behind those close doors and corridors. Something crucial is missing. As Latour, Knorr-Cetina and other Science and Technology Studies authors who spent considerable time studying laboratories have observed, laboratories are not just containers of knowledge, or machines where data are processed using state-of-the-art instruments and magically spitted out in the form of ready-made scientific knowledge. They are very complicated cultural conglomerates where many vectors converge and intense interaction, negotiations and sometimes-tense relationships occur between bodies, instruments and technologies, traditions and methods of study (Latour and Woolgar, 1979; Myers, 2015). They are places where “...the social world,

and .. everyday life, become played upon and turned into epistemic devices in the production of knowledge (Cetina, 1999, p. 119).” Laboratories do burst of excitement and boredom, frustration and euphoria, their instruments being constantly fabricated, rethought, dismantled or replaced; in these laboratories, individuals, space and instruments interact in complicated ways; they can be very clean or very messy, populated by sleepless graduate students and enterprising faculty. Scholars and teams converge around the production of artefacts, their choice of methodologies. The materials employed to build these artefacts, the artefacts themselves, as well as the objects these artefacts are supposed to build and tame contribute meaningfully to shape the direction of research and influence the scientist decision (Latour, 1988). In turn, they modulate our understanding of science and research. Objects, human relations and stories are forming complex ecologies that are very much alive.



Image 1: A typical lab in the Department of Physics at the University of Toronto. Image Courtesy of Stephen Morris.

Yet, the public has no way to seize the richness and diversity of research, the complicated intersections and alliances unfolding in these labs. Just outside these anonymous classrooms and enigmatic laboratories lie dusty cabinets and empty enclosures, containing objects that appear to have been forgotten there for a long time. Located at the entrance of science departments, in proximity of laboratories, or in busy areas of transition, some contain outdated posters, some scientific objects covered in dust and in desperate need of cleaning, some nothing. The remnants of a pre-internet, pre-digital era, these cabinets

were originally meant as showcases of the marvellous science conducted in the laboratories sitting in their proximity. They were meant to display specimens, instruments, illustrations of preeminent experiments and recent discoveries. These displays only unveiled a portion of what occurred in the lab – the final result of an experiment, preferably successful, a project with a happy ending and conspicuous resonance – but their presence was nonetheless offering the potential visitor a glimpse of the world thriving inside the lab, functioning as a connector with the outside world.

Now empty or abandoned, these cabinets lie there, like old furniture on a curb, waiting for the next wave of university renovation to wipe them out and substitute them with flat screen TVs or to make more space for yet another admin cubicle.

What “emptied” these cabinets was only partially due to the advent of the digital, even though it has greatly accelerated their extinction. It was not the fast pace of university renovation either, although the need to make space for more bureaucratic bodies is palpable these days. Inertia was the main contributor to the decline of these cabinets: it was the lack of interest in promoting scientific work, the need to establish priorities in the field in the face of increasing workload, and an inability to see in those cabinets anything, but some obsolete means of communication.

Despite being in full sight, these cabinets went unnoticed for a long time. Trapped in a vortex of never ending routine, in the inexorable always-present, just in time way of life of the university, academics and the students body have become increasingly unaware of the empty spaces surrounding them, of the objects they pass during this seemingly eternal race. The enclosures, the old fashioned items sitting in those neglected cabinets are part of a “..disenchanted world in its eradication of shadows and obscurity and of alternate temporalities”, as Jonathan Crary appropriately defined it in his *24/7*. A *24/7* world, he argues, “produces an apparent equivalence of what is immediately available, accessible or utilizable, and what exists (Crary, 2014, p. 19).” The cabinets have become part of a continuum, like a series of bricks that fit too well the architectural structure of the university. These bricks have not changed in years. They have become a usual sight that people have become accustomed to, and now they are made invisible.

In their assumed orderly composure and science fictional appearance, labs are imagined by the non-academic publics as nameless, sanitized, and a bit intimidating. To them, academic institutions feel like non-spaces, perpetual machines of byzantine bureaucracy and faceless education, spaces void of humanity. From this perspective the neglect of the cabinets confirm well-established ideas about the science institution as a recluse space full of secrecy, or, better yet, as a category of knowledge that either is not interested in communicating with the outside world or is forbidden to do so.

In today’s search for the sensational discovery and the achievement of the tangible result, there seems to be little space for the appreciation of the

processes leading to a discovery or the relationships and collaborations forming in the name of scientific knowledge. But this latter aspect is where re-purposing those abandoned cabinets may turn unexpectedly useful. In fact, unveiling the messiness unfolding behind those closed lab doors may help make science more human, or may reconnect the world inside those labs with the world outside and everyday life. Then, those abandoned cabinets can resume, again, their role as connectors.

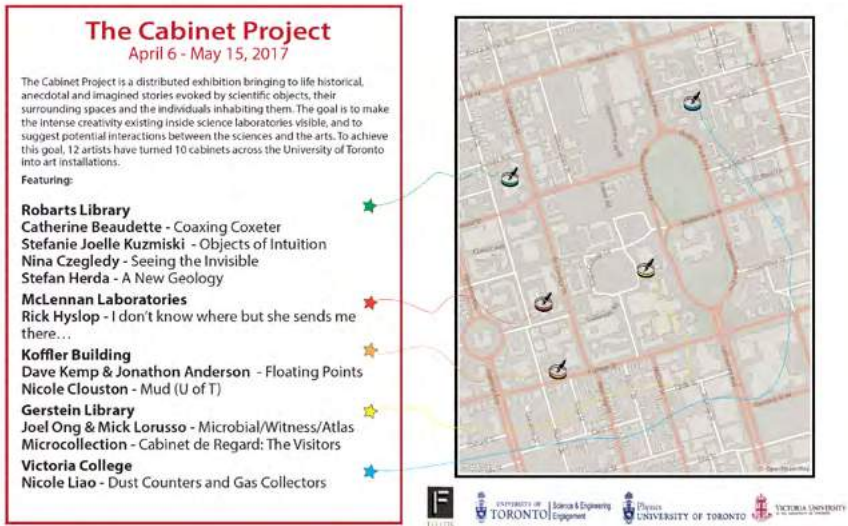


Image 2: The general poster of the Cabinet Project showing the 5 locations

Between October 2016 and April 2017, twelve interdisciplinary artists active in a variety of art practices at the intersection of Art and Science (bioart, media and interactive art, visual art) were invited to engage with the instruments and objects catalogued at the University of Toronto Scientific Instruments Collection, and with the scientific activity being conducted in the proximity of 10 cabinets in 5 different locations across campus. The result was the Cabinet Project, a distributed exhibition seeking to bring to life and to reveal the ecologies unfolding from the entanglement of human bodies, objects, instruments and space inside and around science labs and science departments at the University of Toronto. The goal was not to simply communicate scientific knowledge, but rather to produce sort of short circuit that would reverse the apathy and the lack of attention that had been brought in by years of routine and inertia.

Artists played a crucial role here: their different approaches and interpretations to a scientific area they were not completely familiar with, or were not fully immersed in, would shed new light to the cabinets; their collaboration with scientists and science departments would help evoke and bring back to

life the liveliness that governs labs and scientific environments visible. Thus, instead of making the cabinets look inward, towards the university PR machinery, towards fellow academics, the goal was to make them look outwards, towards a much wider public, towards the city, showing how after all, academic spaces are none other than forgotten public spaces that need to be re-appropriated and revitalized.

A PERFORMATIVE PROJECT

During the months preceding the exhibition (opening April 6), the artists intensively interacted with histories (fictional or research based), instruments, and scholarly documents in order to create a series of site-specific installations. The Cabinet Project is a performative endeavour by nature. In fact, the artists' focus on research and the amount of time they spent exploring, dialoguing, reading and planning their installation, draw attention to the importance of the process of creating a piece, rather than on the product that this process generated.

This particular dynamic approach was also the result of the material conditions artists had to face in order to pursue their research. In fact, the locations, the need to connect the artwork to be installed with the surrounding area and the nearby sciences, as well as the condition of the cabinets themselves, generated some unexpected circumstances that affected not only the nature of the projects but also their final appearances. As artists formulated ideas for their installations, access to collections and their gate-keepers (world travelling chairs of departments, dismissive admins, faculty puzzled about the nature and scope of the project etc..) was slowed down and unpredictable, as it often relied on the availability or the interest of a few individuals. In addition, the fact that the cabinets were located in spaces of transit made it quite complicated to establish who was indeed responsible for them and who had the power to lock them or maintain them.

Furthermore, a cabinet left empty or forgotten for several years can in no way be treated like a conventional gallery space. Being able to adapt to such precarious and unpredictable conditions became a crucial requirement in The Cabinet Project. Lights were often non-functioning or missing, (with some episodes of literal disintegration of light bulbs due to old age or neglect) and access was sometimes postponed due to the temporary absence of keys, which were either lost or misplaced, due to secretarial turnover and consequent change of protocols regarding labeling and storage. The sheer fact that art installations would be setup inside the university would produce unusual reactions and inquiries that required flexibility from all protagonists involved, including artists, organizers, scientists, and the staff at the university.

In other words, the countless unknowns that artists, organizers and department members had to face contributed to turn the Cabinet Project into an operation requiring considerable spirit of adaptability: its looming unpredictability

both produced welcome surprises and created new alliances with individuals interested in engaging with this and similar projects. Simultaneously, it sometimes created frustrating and tense moments.

Importantly, for the artist, this project meant an intense physical and often gruelling interaction with the institution and its bureaucracy; it meant installing artworks in unconventional spaces that had been neglected for years; it meant shifting their focus from creating a sleek, perfectly finished product to a more messy, more process-oriented durational performance. In fact, every phase of this project was important to its completion, as it testified to the labor-and-research intensive, and to the unusual nature of this endeavour, and helped the audience not only to better comprehend the significance of the artwork itself but also to let the science it incorporated speak to them in meaningful ways.



Image 3: The Cataloguing room at UTSIC. Courtesy of Victoria JL Fisher

A relative freedom in deciding the content also caused the Cabinet Project to take a performative turn. In anticipation of the material and administrative obstacles to come, the artists were given a few rules to play with. First, they had to demonstrate an interest in the particular context and the science units where the cabinets resided. They were given the map of the university, the location of the cabinets (with pictures of their current state) and a link to the University of Toronto Scientific Instruments Collection (UTSIC).

The latter is a database and a repository, whose mandate is to document the collections of old scientific instruments scattered around the University of Toronto and to collect instruments handed over by a variety of labs and departments. The UTSIC cataloguing room is a small, windowless space packed to the rim with an incredible variety of instruments of various provenances (UTSIC 2017). Hidden, not surprisingly, in the basement of the Arts and Science building, and run by postdocs turned curators and graduate students in history and philosophy

of science, the UTSIC collection was a go-to place to retrieve pieces and gather information for the installation.



Image 4: Dave Kemp and Jonathon Anderson (right) and Nicole Clouston (Left). Photo Roberta Buiani

With these simple rules, artists had to decide whether to incorporate into their works any object found in the UTSIC database or in the UTSIC cataloguing room, to draw inspiration from them, or rather to interact with the space and the individuals around the cabinets. Sometimes, the resulting installations involved a specific study on an experiment or phenomenon. For instance, Dave Kemp and Jon Anderson created a sculpture producing Moiré Interference patterns. Installed in a busy area of transit, the sculpture would cause many passers-by to pause and interact with its patterns.

In other cases, the installations engaged with the very natural environment surrounding the university. Mud by Nicole Clouston consisted of a series of columns containing local mud samples being transformed by different bacterial colonies naturally living in it. Artists established dialogues between their own practices and the collections existing at the university, as it was evident in Catherine Beaudette's use of the Coxeter collection of geometrical models. Other artists used collections to excavate occupational health issues, as it was the case of Nicole Liao's use of the Gage Institute instruments to measure poisonous gases and dangerous dusts, which she re-contextualized by associating them to humans and the history of labor.



Image 5: Nicole Clouston. Detail of bioart installation

Finally, collections were recovered from storage and re-vitalized – as in Rick Hyslop’s kinetic installation using a late nineteenth century Koenig’s collection of Tuning forks – and recovered from neglect, as in Stefan Herda’s use of the Derek York teaching collection of stones, minerals, prisms, salt formations, which he matched with his anthropogenic studio-fabricated stones and minerals in a compelling tribute to the anthropocene.



Image 6: Nicole Liao. Installation detail

IN VIVO VS IN VITRO

It is commonly believed that glass showcases in museums are meant to separate the public from the object on display and to highlight and illuminate it as a precious part of our cultural or historical heritage (Graham, 2016). This is an operation of purification, or to stay with the scientific metaphor, it is an *in vitro* approach to the object. The object is removed from its context and placed in a case that is supposed to protect it. But this is often an object whose obsolescence has made its function no longer obvious. As Gauvin observes, these objects are “Either stored in restricted rooms or stuck behind glass exhibit cases for all to see, they typically fail to convey their original function and true (or attributed) purpose (Gauvin, 2016).” Thus, the act of separation, although helping the preservation of the objects, inevitably alienates its public. In fact, unless strategies are established to allow the public to comprehend the function and the significance of the object, they will lose interest, they will become bored or frustrated. Alternative ways of interaction are then very important to bring the object back to life: it could be a replica that can be disassembled during a workshop; it can be a series of demonstrations and simulations.

But objects can speak back to us even when they are inanimate, often imperceptibly, just by being immersed in their contexts, by ‘being with’ a specific surrounding socio-cultural environment (Bennett, 2009). The objects displayed in the Cabinet Project came severed from their context. Sitting in forgotten collections, in closets and remote repositories, their memory seemed to have faded a long time ago. Yet, they are not just objects. Their stories can be partially brought back to life in many ways with careful historical and archival research. But there is more to a strictly conservational approach. In other words, these objects don’t need to incorporate extensive side installations or additional descriptions. Once an artistic vision was introduced into these installations, fictional stories could be communicated through these objects (such as the new melodies produced by the tuning forks in Hyslop’s installation). Unknown and dismissed stories could be uncovered (such as the stories of labor, occupational hazard and disease evoked by the mining industry instruments in Liao’s installation). To the *in-vitro* approach where objects would be trapped in their cases to be admired for their official historical significance by an audience primarily made by experts, the Cabinet Project opposed an “*in vivo*” approach that not only reactivated the sociocultural significance of the objects, but also attempted to connect them to the outside world.

Since the Cabinet Project consisted of several installations in spaces of transit, instead of a museum or a gallery, artworks and objects had to be contained inside their allotted spaces and physically separated from their public. This did not prevent them from interacting with the public. Each of the ten installations established sometimes intimate, sometimes very loud dialogues with intentional visitors and occasional passers-by alike. The cabinets did not contain just instruments, but artworks that re-contextualized

objects and dialogues across disciplines and perspectives through artists' installations. Objects were embedded in, interacted with, became themselves artistic forms. They hit the passers-by with their unusual perspectives, with their different approaches and interpretations, with their focus on the socio-cultural significance and aesthetic aspects of science, not merely on their mathematical accuracy or on their scholarly roles. Art became a thread linking the instruments with their histories and the scientists who operated them.



Image 7: Rick Hyslop. Installation detail

Second, the cabinets connected to the public thanks to a distributed configuration. The nature of the exhibition was meant to reflect not only different engagements with various areas of science, but also to provide a vivid sense of the ecologies produced by the environments surrounding the cabinets. Thus, placing the installations in cabinets located inside the very departments producing that very science was crucial. The visitor traveled freely (using an online map with suggested itineraries or establishing their own tour trajectory) to each of the 5 locations containing the cabinets. The buildings and the departments hosting them offered the visitors a multisensory experience: by travelling to the heterogeneous spaces where the objects exhibited are used and produced, rather than to the safer, but more homogeneous space of the gallery, audiences had a chance to develop an appreciation for the changing environments hosting the cabinets and the atmosphere of the departments where they reside. In fact, visitors could witness diverse architectures, their peculiar smells, their sounds and echoes. They were encouraged to compare

the human, social and material ecologies displayed in the cabinets to their lived life outside of the university and to realize that what they were seeing was, indeed, intimately connected and part of, rather than separate from, the urban environment.

CONCLUSION – EXPECT THE UNEXPECTED!

The Cabinet Project encouraged the audience to break from ideas of the gallery as a white box where the artwork is often presented as an aestheticized abstraction, or an enactment of a scientific activity. It offered a performative experience, because of its emphasis on the research-creation process leading to the final display, rather than on the final product per se, and on its distributed configuration which required the public to experience the very contexts where science is made rather than simply enjoy it in the more protected space of the gallery. Because the public is encouraged to walk across campus and inside university buildings to reach the cabinets, the experience is also immersive. People hear, feel, look around.

The exceptional and unusual display of newly filled cabinets, as well as the distributed nature of the Cabinet Project worked unexpectedly well together. In fact, the outcomes surpassed the much hoped for short-circuit to break the tediousness of institutional spaces. Its existence destabilized, if temporarily, the normative assumptions that suggest where culture ends and science begins, where technical displays become separated from “mere” public display. The cabinets showed how the institution, public space and the fabric of the city can and should intersect and overlap, enabling the audience the freedom to roam and explore the cabinets as they wished, literally reclaiming the space of the university as a temporarily recovered public space that everybody can enjoy. Ultimately, both the artists and the potential audience could experience the project purposely, as a novel approach to art and science collaboration, as a self-directed exploration, or a classic mapped tour, or inadvertently, as a surprising discovery. Ultimately, to use a term that somehow reproduces the rebellious action of reclaiming unutilized spaces, and that seizes the visceral experience of some of the visitors, “squatting” sounds about the right word. Squatting the cabinets in order to repopulate them and to revive them as not just evocative but also lively connectors between the sciences, the arts and the city; and squatting academia, because of the absence of official presence and department endorsement of the project – an element that I believe facilitated the appropriation of the locations as public space.

The Cabinet Project (2016-17) is a project by ArtSci Salon. Full documentation can be found at <http://artscisalon.com/the-cabinet-project>.

REFERENCES

- Bennett, J., 2009. *Vibrant Matter: A Political Ecology of Things*. Duke University Press.
- Cetina, K.K., 1999. *Epistemic Cultures: How the Sciences Make Knowledge*, 1 edition. ed. Harvard University Press, Cambridge, Mass.
- Crary, J., 2014. *24/7: Late Capitalism and the Ends of Sleep*. Verso, London.
- Gauvin, D.J.-F., 2016. *Functionless*. *Science Museum Group Journal* 5. doi:10.15180/160506
- Graham, D.H., 2016. The 'co' in co-production. *Science Museum Group Journal* 5. doi:10.15180/160502
- Latour, B., 1988. *Science in Action*.
- Latour, B., Woolgar, S., 1979. *Laboratory Life: the Social Construction of Scientific Facts*. Sage.
- Myers, N., 2015. *Rendering Life Molecular: Models, Modelers, and Excitable Matter*. Duke Univ Pr, Durham.
- UTSIC (2017), University of Toronto Scientific Instruments Collection. <https://utsic.escalator.utoronto.ca>

ABOUT THE AUTHOR

Roberta Buiani is an interdisciplinary artist, media scholar and curator, and the co-founder of the ArtSci Salon at the Fields Institute for Research in Mathematical Sciences. Her work balances theoretical and applied research at the intersection of science, technology and creative resistance. She is interested in exploring how scientific and technological mechanisms translate, encode and transform the natural and human world, and how these processes may be re-purposed by relocating them into different venues. Her upcoming project, *The Cabinet Project*, is a distributed exhibition: 13 artists will revitalize 11 cabinets across the U of T campus with installations at the intersection of Arts and Science.

KATERINA KAROUSSOS
Planetary Collegium, Plymouth University. UK

The Economy of THEŌRIA in the Transhumanistic Era

ABSTRACT

The paper presents a new insight into human capital based on Theōria, which is considered to be the contemplate activity of knowing; a kind of seeing, through technoetics, that leads to a different economy where humans can invest in their own liquidity. The paper questions the ways contemporary thinking and human perception administer the acquired knowledge which has, so far, lead to the Anthropocene. The human habit of persisting in the knowledge economy, which asserts that the meaning of life should be sought in nature's actual depth, yields a number of inconsistencies between scientific advances, technology growth and interdisciplinary works. However, even if such scientific and technological progress claim for multiversity and quantum states of being, the depth of nature has been interpreted, solely, by means of the Darwinian sustainability of human mass and form. Nevertheless, Nature produces her own ergon, regardless of human administration and therefore the idea of eliminating the human capital could be one of nature's accomplishments. In these terms, humans may recognise nature's actual depth, even if the Anthropocene means the end of their time as intelligent and global forcing agents. In the event of the destruction of human agency, the scenarios speak for a no-man's land where the environment is subject to collapse as long as there is no administration of human agency. Such dystopian and nihilist conclusions illustrate that, for centuries, human capital has been invested in certain protocols for managing the economy and the ecology of diverse resources.

These protocols generated a defined set of rules and regulations that determined how to acknowledge nature at large, entailing hidden causes and forbidden regions of thought. One of the main purposes of this effort was the prevalence of the human species as the fittest to survive and therefore the evolution of species was an important protocol of human dominance. Therefore, previous geological epochs, such as the Pleistocene and Holocene, are perhaps more relevant to humans, being characterised as updated apes. Theōria reveals an alternative path whereby the case of total collapse does not lead to demolition of human agency, but, on the contrary, it has the meaning of a point

of departure that leaves the slots of knowledge open, for an entity that does not face issues of validation and evaluation of its own nature. This is because Theōria entails features of participation, connectivity and integration with the Another-our-nature that derives from the process of correlation to the image and likeness. Image declares the human capacity of 'auto-existence' through the manifestation of the communion with the Another-our-nature, whereas likeness concerns the complete integration with this nature. The argument is that if Theōria will be launched into the recent transhumanistic time then, as a module of knowledge, she will enable humans to invest in a pro-nature incorruptibility in where they can gain capital liquidity through 'image and likeness'.

KEYWORDS

Theōria, Another-our-nature, economy, ecology, person(s)-in-communion

THE ULTIMATE PURPOSES

The Higgs boson is a theoretical elementary particle, nicknamed by the popular press as the "God Particle," which supposedly holds everything together. It was named after Peter Higgs, one of six physicists who, in 1964, proposed the mechanism that suggested it. In 2013, Peter Higgs and François Englert awarded with the Nobel Prize for Physics, for the discovery of this elusive boson. The experiments, in Geneva, at the Large Hadron Collider, may or may not have actually generated some proofs of this. Apparently, Higgs particle may or may not exist, gravity may or may not have some relevance to its theoretical existence. Many claim that applied research and real technological advances very often spring from basic research with no specific technological goal. One can imagine that in some years we may have the technology to create Higgses, and thus produce mass. On the festive day of Nobel awards Rolf-Dieter Heuer, the General Director of CERN said:

*"Everybody should be happy that we discovered this particle, because now we know why we exist, at least partly."*¹

CERN receives millions of Euros in funding from its member states and more, and one can wonder why the Director of CERN chose to define the teleological significance of the research through the value of happiness by arguing that everybody should be happy now. Bearing in mind that, for research, the ultimate purpose should be ideally the production of knowledge and practice, it is reasonable to align with the highest excellence given that it is self-sustaining, which, in itself, makes the purpose worthy of choice. It is apparent from a research synopsis that the dominant value of research is to understand nature's true depth; that is, to delve into fundamental issues such as those of existence and the nature of the universe.

¹ Available from: <http://phys.org/news/2013-10-cern-scientists-bask-joy-god.html> [12 January 2015].

The persistence of the human mind to see nature's actual depth is encountered in all areas of research and practice. Whatever the outcome of the research is, it triggers another round of research and although in this course many achievements were accomplished, no one reached the final outcome about nature's depth. However, this can be regarded as something opposed to nature per se, as she always seeks completion of the ultimate purpose.

For instance, a pair of birds may have the ultimate purpose to build a nest, as nature dictates, for the purpose of propagation of the species, and both the male and female will work until the nest is finished. Whether they will succeed or not depends on many factors, some anticipated and others not anticipated. Yet, even if they do not succeed, the course of nature will continue to the final end, namely, the birth of the neonates and later on the flock migration. There is no way for the bird pair not to accept this course. Failure to comply, regardless of cause, means the death of the birds and entails an imbalance in nature since a part of her system will be caused to dysfunction.

Nature works the same for humans too. If someone is required to walk for an hour per day as a treatment for heart disease and he comply fully with the instructions, his ultimate purpose is to improve his health and, therefore, to increase his life expectancy. Whether he succeeded or not depends on many factors as well, but nature will continue her work. Thus, the man's task has a teleological purpose but not self-sufficient because it does not coincide with the purpose for which nature has appointed him. In this example, the philosophical question of the purpose of existence is not the case but, undoubtedly, the task of nature, in regards to life, leads to death rather than perpetuity of life. Therefore, when one seeks for the essence of nature, any act has to be in accordance with the protocols that nature commands, or else success is impossible. There is a general assumption, in scientific circles at least, for a deficit of appropriate protocols towards the completion of the task. In contrast, one can rightfully argue that the protocols of nature are commonly known by all species and, moreover, that most of them are innate. Thus, either the research and the knowledge that is produced do not confront the essence of nature, or/and the protocols used are not those of nature.

On searching the Nobel Prize list from 1900-2014, one realises that all winners have searched for a specific x sequence, supposing that they had the appropriate protocols to see with a kind of God's eyes. Yet, what is particularly important is the alignment in the categories is that each year there is no other x sequence than one and only one sequence which is examined by all disciplines in order to ensure the satisfactory preservation of form and mass both in terms of solids and animals, with the hope that it will exist in perpetuity. Thus, most of the Nobel Prizes in Physics and Chemistry concern the same x sequence in macroscopic and microscopic research. Alongside, the Nobel Prize in Medicine is concerned with the effects and risks occurring from the x sequence, and with solutions that may eliminate those effects and risks, whereas the Nobel Prizes

for Literature and Peace are given for research which describes and fights, respectively, the above effects and risks.²

KNOWLEDGE ECONOMY

The research list is vast and so are the outcomes. One can assume that the increasingly expanding technological possibilities of collecting, analysing, measuring and visualising various scientific data enable new, more sophisticated technological tools to be developed. Hence, the meaning of excellence here, concerns knowledge economy and aims at the -never-ending- learning and improving, in all spheres, to pursue the highest performance, in terms of products and services.

Knowledge economy has registered two ultimate purposes, to deal with the risk of the extinction of mass and form: ecology and economy which lead to acts of highest excellence. The representatives of these two units are the ones who manage them completely. They are still talking about a healthy and prosperous community based on the phrase: “everybody should be happy”. The purpose of ecology is the administration of the natural environment as a factor of political and social life of man. The purpose of economy is the art of resource management. The registration of the two eminently ultimate purposes, took more than five centuries of research to be accomplished. In the name of their registration as purposes and acts of highest excellence, major sacrifices occurred at all levels of human life: natural, national, social and cultural. One can recall the nuclear disasters, especially the Fukushima disaster in 2011, where scientific excellence has managed to demolish the one and only main element of the Anthropocene, i.e. the anthropos.

The entire endeavour of this registration resulted in the International Commission of Stratigraphy (ICS), which, in turn, validated the registration as the Anthropocene, the formal geological term based exclusively on these two ultimate purposes and their acts of highest excellence. The ICS undertakes to define the registration as a new geological period or to integrate it to an existing geological period. Even if the Anthropocene has not yet been approved officially as a new validated geological period, the question raised at the October 2014 meeting of the Anthropocene working group, whether “*human-induced planetary change rank with fundamental step changes seen in the Earth’s deep history?*”, shows a pre-defined belief in the supremacy of human kind.³ In particular, the questions from the meetings of ICS aim at the formalisation of the term Anthropocene in accordance with human deeds that can be characterised as acts of highest excellence.

² The data of the Nobel prizes for 2013 have been retrieved from http://www.nobelprize.org/nobel_prizes/lists/all/index.html [17 March 2015].

³ Anthropocene Newsletter. Vol.5. Report of activities 2013-14. Available at: <http://quaternary.stratigraphy.org/workinggroups/anthropo/anthropoceneworkinggroupnewslettervol5.pdf> [16 November 2015].

THE DESTRUCTION OF HUMAN AGENCY

With respect to the notion of the intelligent man who can act as, and often be an agent on behalf of, an over potential power (God or else), the Anthropocene has yielded a new human identity, that of a global forcing agent. In any case, both the validation of the record of human deeds as an overall task of highest excellence and the human, per se, as the intelligent and global forcing agent, acquires its justification and importance, regardless of any collateral damage during the process of the task. In any case, and no matter the taxonomy in the geological time, the significant outcome from the process of registration and validation of human deeds is that the purposes of economy and ecology have already been established as the ultimate purposes and, thus, the human task in accordance to these purposes is a task of highest excellence. In this case and taking in consideration that the work of highest excellence produced by intelligent and global forcing agents, is many times destructive, a logical sequence is to acknowledge destruction as a work of highest excellence. Such a syllogism can be actually beneficial to the human species. Specifically, since nature produces her own work, regardless of human administration, the idea of eliminating the intelligent and global forcing agent could be a task of the highest excellence that nature is able to implement. In these terms, humans may recognise nature's actual depth, even if the Anthropocene means the end of their time as intelligent and global forcing agents. (Image1).



Image 1: <https://pixabay.com/en/heavy-water-factory-1053775/> Royalty Free Photo Stock, CC0 Public Domain

In the event of the destruction of human agency, the scenarios speak for a no-man's land where the environment is subject to collapse as long as there is no administration of human agency. Such dystopian conclusions illustrate that, for centuries, human capital has been invested in certain protocols for managing the economy and the ecology of diverse resources. These protocols generated a defined set of rules and regulations that determined how to acknowledge nature at large. It should be noted here that the evolution of species was an important protocol of the human task. Moreover, one of the main purposes of this task was the prevalence of the human species as the fittest to survive. Therefore, previous geological epochs, are perhaps more relevant for the intelligent and global forcing agent if one considers that this agent has also the notion of an updated ape.

There are two ways to explain this: (i) the protocol of evolution is inapplicable or (ii) the view of nature is not only what has been defined by the human agency. To this manner, there should be another view of nature that contains some potentialities beyond the protocols for the human capital that is to be invested. Indeed, even if such teleology is not a subject for the human agency, the assumption that the elimination of the latter will cause the end of the world is the most dogmatic teleology that is possible.

One would expect that the advancement of human intellect would bring a totally different syllogism to that of total collapse in the case of a destruction. Specifically, in the transhumanistic era, where biotechnology has emerged in different aspects of human capacities, the picture of no-man's land should not be an issue.

THEŌRIA

Theōria elucidates an alternative path whereby the case of total collapse does not lead to demolition of human agency, but, on the contrary, it has the meaning of a point of departure that leaves the slots of the schema open, for an entity that does not face issues of validation and evaluation of its own nature. Theōria, is considered to be the contemplate activity of knowing; a kind of seeing, that leads to a different economy where humans can invest in their own liquidity. The two main characteristics of Theōria, the person(s) in communion, which refers to connectivity and integration and the Another-our-nature, which refers to the process of complete integration with Another-our-nature, can shift the knowledge economy, which appears to have a dead-end, to an economy in which image and likeness provide an open field of potentialities of human capital. This is because Theōria entails features of participation, connectivity and integration with the Another-our-nature that derives from the process of correlation to the image and likeness.

In his first letter to Corinthians (55-56 AD), Paul the Apostle stated: *We partially know and partially project; but when the complete integration (consummate) comes, the partially revealed.*⁴

Since Theōria functions through noetic mechanisms, using ‘image and likeness’ as the prime carrier of knowledge, her application requires the veneration of images and the creation of a restore point in where the images can manifest the natures and therefore human capital can be invested in a pro-nature incorruptibility in where, one can gain capital liquidity through ‘image and likeness’. (Image.2)



Image 2: <https://pixabay.com/en/mother-and-daughter-love-mirror-2383081/> Royalty Free Photo Stock, CC0 Public Domain

The echoes of Byzantine art and philosophy, which are considered to be the pinnacle of Theōria, have remained as a hidden value through the course of time until now, unable, however, to unfold her capacities due to her transcendental character, which was expelled due to its theosophical linkage. As a noetic mechanism that uses image as the primary element, arts should be considered as Theōria’s operational platform. But, rather than the arts, with the western definition, one should speak about *téchne* which has a more holistic approach to knowledge, leading to Roy Ascott’s view on Technoetics.

Eventually, to reveal the images that can manifest the natures in where human capital can be invested, one we should trust the *téchne*, in a technoetic manner, which contain the transcendental element, as the most appropriate field of escaping from the nature-as-believed-to-be to the Another-our-nature.

⁴ Apostle Paul, Letter A to Corinthians. [9] Κ μέρους δὲ γινώσκομεν καὶ ἐκ μέρους προφητεύομεν· [10] ὅταν δὲ ἔλθῃ τὸ τέλειον, τότε τὸ ἐκ μέρους καταργηθήσεται. (Α΄ Προς Κορινθίους ΙΓ΄ 9, 10)

BIBLIOGRAPHY

- Ascott, R. (2003), *Telematic Embrace: Visionary Theories of Art, Technology and Consciousness*, Ed. Shanken,A,E., University of California Press. London.
- Fuller, S., Lipinska,V, (2014), *The Proactionary Imperative: A foundation of Transhumanism*, Palgrave Macmillan, London.
- Aristotle in 23 Volumes*. Trans. H Tredennick. Perseus Digital Library: <http://www.perseus.tufts.edu/hopper/searchresults?q=Aristotle> Accessed 10 March 2015.
- An Exact Exposition of the Orthodox Faith by St John of Damascus*. Internet Archive Digital Library: <https://archive.org/details/AnExactExpositionOfTheOrthodoxFaith> Accessed 8 February 2015.
- Karoussos, K, *Theōria: The Veneration of Icons Via the Technoetic Proccess.*, PhD Thesis 2016. Available at: <https://pearl.plymouth.ac.uk/handle/10026.1/8069>.

ABOUT THE AUTHOR

Katerina Karoussos is an artist and a Doctor of Philosophy, Planetary Collegium, Plymouth University. Former Director of the I-Node of the Planetary Collegium, the Greek node for doctoral and postdoctoral studies, University of Plymouth (2012-2016). During the years 1994-2003 she was the director and founding member of the Centre for the Study and Research of Fine and Applied Arts. From 2004 until 2015 he worked as a freelancer in the Fine Arts School of Athens Fresco in the Byzantine Art Studio. She holds a Bachelor of Fine Arts in Athens and a Masters from Middlesex University. Karoussos has participated in many international conferences ((ISEA, Aber, Dimea, Consciousness Reframed Series etc). She has published in many academic journals (Metaverse Creativity, Technoetic Arts etc.)while she has worked as a co-editor fir Technoetic Arts Journal. Apart from her artwork as a mural painter in Orthodox churches, she has participated in many international exhibitions (Athens, Japan, New York, Frankfurt, Montenegro, Cuba, etc.). Recently Karoussos has founded The Karoussos Archives, the premier centre for the study of Theōria. She is working as a hybrid fresco painter at Karoussos Chapel.

Email: kkaroussos@gmail.com

Website: <https://plymouth.academia.edu/KaterinaKaroussos>

LILA MOORE
Cybernetic Futures Institute, UK

The Transcendent Double Selfie App

ABSTRACT

The 'Transcendent Double Selfie' is a visionary, technoetic app devised to capture the image of the user's transcendent double. It is part of the series 'Opener of the Ways, Access Consciousness' which experiments conceptually, aesthetically and experientially with noetic technology utilizing apps and technologies that explore consciousness. This article reflects on the Transcendent Double Selfie app which is inspired by the Kabbalistic traditions of the Golem and Zelem as well as the notions of the double that are prevalent in shamanic traditions. It underlines the integration of ancient spiritual techniques and advanced technologies for the making of twenty-first century technologies of transcendence along with technologically-based and scientifically informed mystical techniques. The app's formulation forges a speculative exploration of consciousness as a non-local phenomenon. In addition, it indicates historical and cultural patterns that reflect the shifting attitudes towards the spirituality of the human body and mind and the experience of transcendence.

KEYWORDS

transcendence, selfie, golem, consciousness, technoetic arts

INTRODUCTION

In this article I reflect on my practice-based research with special focus on the concept of the 'Transcendent Double Selfie' app. The app is part of the series 'Opener of the Ways, Access Consciousness' which experiments conceptually, aesthetically and experientially with noetic technology through apps and technologies that explore consciousness (Moore 2016). At this stage, the app is a theoretical construct envisioned as a technoetic device that would capture the image of the user's transcendent double. Firstly, the notion of the double is introduced in relation to the cultural, and somehow apprehensive, interrelations which were formed between archaic and shamanic perceptions of images that mirror the self or the world and technologies of image reproduction in particular photography. Secondly, the notion of the double is addressed within the context of ecstatic Kabbalah practices as taught and disseminated by the mystique Abraham Abulafia and his followers. These mystical practices are also addressed

with reference to research in neuroscience that investigates the phenomenon of the double that they generate. Thirdly, it is implied that the fusion of mystical, shamanic techniques and emerging technologies, as theoretically demonstrated by the envisioned technoetic app, and other pragmatic consciousness-based apps, e.g., the Choice Compass App, which has been utilized in this series of works (Moore 2016), allows creative and experimental exploration of non-local consciousness. In addition, it is indicated that the app which forms an integral part of its user transcendence's practice concurs with the premise of Abraham Maslow's 'Theory Z' (1971:270-286). Moreover, it represents, and is an integral part of, a broader trend of shifting attitudes towards the spirituality of the body and mind in Western culture along with the development of technoetic art forms and technologies of transcendence.

FROM STILL TO MOBILE SELFIE: THE UNCANNY LURE OF THE DOUBLE

In *On Photography* (1979: 154) Susan Sontag writes that a painting is radically different from a photograph as the latter is a direct trace of something real, a registration of an object by light, a kind of death mask of something or someone. We are all familiar with sentimental attachments to old photographs of relatives or loved ones, images that we protect and venerate, and often reluctant to destroy or discard (1979:161). These sentiments reflect the deep feelings that bind us to photographs as precious death masks, idolized fetishes or powerful personal and secretive totems. We seem to sense the spiritual authority of photographs that extend beyond their concrete manifestation on printed paper or as digital images. Wright's study (2008) demonstrates that people in the western Solomon Islands of the South Pacific perceive photography in a manner which parallels early experiences of the photographic medium in Euro-American traditions. According to Wright (2008:374):

To be photographed was like looking in a mirror and having that image fixed. From now on it would be possible to encounter your double. The "mirror" of photography offered the security of possession, an object to be handled, and also created an anxiety around self-possession—others could now get hold of your image.

Simon Sasae, a native of Roviana, explains that the camera takes one's shadow and makes a photograph out of it. Hence, the photograph is a direct extension, and a form of continuity, of the physical self. For the Maori people, photographs are capable of possessing 'mauri', which means a life force (2008:369). The Roviana most used word for soul is maqomaqo which is also utilized to describe photography and photograph (2008: 370). These subtle connections between, and meanings of, words describing soul, reflection, shadow, mirror and photograph in various cultures (2008: 371), and as explicated in the next section in relation to the double in Kabbalistic traditions, indicate the collective human fascination with images of the double, the distributed living and deceased self. The possibility that the self could be captured, extended

or distributed through its duplicated photographic image brought about great anxiety as it aroused the fears of sympathetic magic (2008:374-375). Based on the premise of sympathetic magic (Frazer 1925:11-47), a photo which is a direct extension and copy of a person is as representative and valid as the real person and, therefore, could be utilized to harm, manipulate or possess her or him. Through magical rites and spells, what is done to the photographed person has direct impact on her or his existence. Indeed, the act of taking a photo is often associated with gaining control, a powerful possession of the photographed subject. Taking a photograph denotes the imprisonment of a reality as well as the desire to possess and be possessed by it (1979: 154,163). The repetition of the act especially in today's selfie culture only intensifies these feelings of losing power of, and gaining power over, one's self and reality whilst allowing them almost unlimited expression. Paradoxically, the selfie has become a relatively new mode of possession and deprivation, a way of both exerting and losing control over the self and its reality. Beyond observations of the selfie as superficial expression of online narcissism, or a strategy of self-empowerment and politically oppositional self-stance (Murray 2015), the selfie seems to continue to stir photography's uncanny association with death, the finality of time, and the preservation of the dead body as a ghostly image. Laura Mulvey (2006) refers to Barthes's *Camera Lucida* (1981) and his assertion that photography acquired a function in modern society which has replaced the role of religious rituals in dealing with death and preserving both the dead and the living. Each photograph and each photographer are agents of death, each photograph is: 'the return of the dead' (Mulvey 2006: Chapter 3).

The selfie, however, appears to be omnipresent; once released into networked space-time it becomes unbound in its reach. Unlike the gravity of aging stills that cannot be substituted, its nature is mobile and fleeting, and its short lifespan demands another selfie to replace it. Yet, the compulsive need for self-reproduction through seemingly endless succession of selfies may also derive from the psychological distress that the selfie triggers. The selfie as a repeated act of self-photographing perhaps accentuates the tension between animate (living) and inanimate (dead or ghostly) states of the self, which according to Mulvey (2006), still photography uncannily induces. Moreover, the selfie implies a returned gaze, an interaction with one's self in which the possessor and possessed exchange glances and are reflected in one another's reality. The presence of the self's double in the process of making a selfie becomes almost tangible despite its digital nature and involves an unspoken affirmation to release it (the digitized double) into a networked, cyber space-time. The digital double in the context of the app implies a liminal existence between life and death, a state of transcendence in 'time out of time' (Moore 2015). In the app's poster (Image1) the actual act and pose of taking a selfie is depicted as suspended in time by three identical figures that recall the successive character of selfie-taking. The figures hold a mirror in the shape of the ancient Egyptian mirror of the goddess Hathor. In ancient Egypt, Hathor's mirroring disk was

cosmologically perceived as reflecting the light of the sun and the moon, the two divine eyes of heavenly bodies, including the heavenly sight and insight of all suns and solar deities (Richter, 2016:167-168). Although Hathor's mirror was utilized for daily cosmetic purposes (Nemet-Nejat 1993), it also had a ritualistic role that attributed it with transcendent powers. Whereas the mirror, like a still photograph, captures a reflection of the self as a passing moment in time, a (dead) moment which will never return, the mirror in a ritualistic context transcends death and reflects a vision of the infinite. The illustration positions the transcendent double selfie, which derives from the contemporary mobile phone's selfie, in a broader mystical and ritualistic context of visual duplication and photography.



Image 1: Transcendent Double Selfie App poster. Image and concept by Lila Moore (2017).

ZELEM: THE KABBALISTIC DOUBLE

Abraham Abulafia, the prominent exponent of ecstatic Kabbalah, was born in Zaragoza, Spain and disseminated his messianic and redemptive teachings during the Thirteenth Century (Idel 1987). Abulafia devised a methodology for the creation of an artificial entity known in Kabbalistic traditions as the Golem. He was fascinated by the mystical revelations involved in such an undertaking but was not interested in making a corporeal entity. The mystical techniques which he devised were aimed at invoking and manifesting the practicing mystic's transcendent double. Unlike the material fabric of the Golem, the transcendent

double was regarded as a zelem, which is the visual pattern that constitutes the entity's external figure based on its intellectual factors (Idel 1990: 102-103). Abulafia's technique for making a zelem in the form of a spiritual double recalls a process of image-making and, in particular, a photographic process. The word zelem appears in the book of Genesis and is utilized to describe how God created male and female in his image or in his zelem as written in the original Hebrew text (King James Bible, Genesis1:26). The root of the word zelem (Z.L.M), pronounced tzelem in Hebrew, is also the root of modern Hebrew words, describing the act of taking a photograph and filming, a photographer or an actual photograph. The word zelem contains the Hebrew word zel which means a shadow. As noted in the previous section, the word shadow appears in connection to words describing photography in various shamanic cultures and languages. Zelem could, therefore, imply a photographic image of an object, a visual double of a thing, and an act or a process of making an image of a double. Moreover, in the context of ecstatic Kabbalah, the zelem is the mystic's double, an image of the actual self (Idel 1990:102). However, it is not a mere copy of the self but its exalted apparition. Abulafia's zelem is based on a neo-Aristotelian worldview and made of nous, which is sourced from the active intellect of the divine (Persico, 2016: 70-71, Idel 1987: 13). Once manifested, it enlightens the mystic with knowledge beyond the capacity of the conscious mind. Abulafia and his followers recorded in great detail the apparitions of the double and the processes involved in the demanding practice and experience. Furthermore, the phenomenon of the double in the context of these early mystics has been a subject of research in neuroscience (Arzy et al. 2005). Arzy and Idel (2015) propose that specific practical techniques which affect built-in self-processing and perception of embodiment led to the mystical experiences proclaimed by the mystics. These techniques activated brain mechanism that separates the self from the body and introduced pioneering experimental models for the investigation of the awareness of the human self. Therefore, they also present a valuable contribution to consciousness studies and neuropsychology as they engage the body and the self as separate entities in interaction in more than one way.

This experience of the double in the form of a separate self and realm resembles Ayahuasca's visions (Ascott, 1998:357, Shannon, 2005:6,) which also occur due to a radical shift in consciousness. It also implies that aspects of the mystic's consciousness such as the double are not local nor situated in the individual human body and brain. The visionary proposal that an app, or any technology, could source an image of a noetic entity or aspect that occurs outside the body and the brain may correlate to the 'transcendent mind' theory (Barušs and Mossbridge, 2017). Creative experiments as part of the series 'Opener of the Ways, Access Consciousness' incorporated the Choice Compass app (Moore 2016) in order to bypass the conscious mind and access unconscious motivations. Barušs and Mossbridge (2017) suggest that some non-conscious processes access non-local events outside the spatial and temporal aspects of

apparent time, hence, in principle capable of sourcing knowledge from beyond one's physical body, brain and local environment and time. The Transcendent Double Selfie app is envisioned on the speculative basis that non-local events or knowledge which directly relates to the user's body and awareness could be accessed. In the app's framework, the knowledge would be utilized to generate an image of the user's double. The image is regarded as the registration of the user's *zelem*, therefore, it is not a mere selfie but a registration of her or his transcendent self. It may be an image based on the physical, psychological and neurological processes involved in the double's invocation, which the app could measure and analyze and innovations added by the user's performance.

Unlike well-being apps and current spiritual technologies that emphasize the physical and psychological needs of individuals, the app's format considers the premise of Abraham Maslow's 'Theory Z' (1971) along with the ancient Kabbalistic source. The fusion of these sources concords with Maslow's appreciation of religious literature and spiritual experience and the synthesis between science, religion, spirituality and art (Maslow 1971: 173, 282). Furthermore, Maslow differentiates between psychologically healthy and happy self-actualizers who are nontranscending to transcendents who regard peak experiences as the most valuable aspect of their lives (1971:273). Transcendents may be less happy though more daring and innovative in their outlooks and actions than healthy self-actualizers (1971:279). According to Maslow, transcendence is foremost a loss of self-consciousness; it entails the transcendence of the conscious self through immersion in something infinite outside one's corporeal sense of individuality and time. In a state of transcendence, chronological time becomes insignificant and all times and systems of knowledge transform into potential *nous* (1971:259). Although infinity is grasped as unbound and beyond reach, there is a sense of unison within its vastness in peak experience that Maslow defines as essential to transcendence's practices. Transcendence as a state of consciousness sustains uncharted potentialities for humanity. It illuminates the transcendents in ways that transform their perceptions of the self and the world (1971:271). The transcendent double selfie is the imprint of the transcendent's noetic being and of the latter's process and data.

CONCLUSION

The Transcendent Double Selfie app constitutes the formal context of the noetic phenomenon of the double. The context and content are interwoven, thus, may evolve a transcendent reality, virtual or/and augmented for the transcendent double. Technologies such as Augmented Reality, VR and AI are means with which to explore the double as a phenomenon of consciousness due to the fact that they interact directly with our perception and knowledge of the body and our sense of the conscious self in space and time. Emerging technologies could be utilized to investigate further the state of the double and of transcendence as initially theorized by Ascott (1999). They may be configured to explore transcendence as reflected upon by Maslow and in theories of the non-local

mind, as well as be developed into specialized technologies of transcendence, such as the envisioned prototype app.

The technologies of transcendence could be observed as part of a broader trend of shifting attitudes in Western culture towards the spirituality of the body and the mind (Moore 2016) that seem to coincide with the return of the spiritual in art (Moore, 2016, Tess Thackara, 2017). Yet, the app is not defined by its technologies and scientific instruments, which are subject to continual upgrade, as in principle it is a mobile lab and a transportation device in space-time with associate apps and appliances. It is a device in a series of cybernetic instruments and technoetic art forms that voyage into new frontiers of space and time beyond the known limits of the infinite that the Kabbalists and shamans of old dared to transcend.

REFERENCES

- Ascott, Roy (1998), 'Weaving the Shamanic Web: Art and Technoetics in the Bio-teleomatic Domain' in Ascott, Roy and Shanken, Edward A. (eds) (2003), *Telematic Embrace Visionary Theories of Art, Technology and Consciousness*, Berkley, Los Angeles and London: University of California Press, pp. 356-362.
- _____ (1999), 'Seeing Double: Art and Technology of Transcendence' in *Reframing Consciousness Art, Mind and Technology*, Exeter, UK, Portland, Oregon, USA: Intellect, pp. 66-71.
- Arzy, S. Idel, M., Landis, T. and Blanke, O. (2005), 'Speaking with One' Self, Autoscopic Phenomena in Writing from the Ecstatic Kabbalah,' *Journal of Consciousness Studies*, 12, No. 11, pp. 4–29.
- Arzy, Shahar, Idel, Moshe (2015), *Kaballah A Neurocognitive Approach to Mystical Experiences* (Kindle version), New Haven and London: Yale University Press (Conclusions, Section 2, para. 3), Available from: <http://www.amazon.com> [Accessed 20 August 2017].
- Barthes, Roland (1981), *Camera Lucida*, Trans. Howard, R, New York: Hill and Wang.
- Barušs, Imants, Mossbridge, Julia (2017), *Transcendent Mind: Rethinking the Science of Consciousness*, (Kindle version), Washington, DC: American Sociological Association. Available from: www.amazon.com [Accessed 20 August 2017].
- Frazer, James, G. (1925), *The Golden Bough*, New York: The Macmillan Company.
- Idel, Moshe (1987), *The Mystical Experience in Abraham Abulafia*, New York: State University of New York Press.
- _____ (1990), *Golem: Jewish Magical and Mystical Traditions on the Artificial Anthropoid*, New York: State University of New York.
- King James Bible Version (KJV). Available from: <https://www.kingjamesbibleonline.org/1611-Bible> [Accessed 20 August 2017].

- Moore, L. (2015), 'Fields of Networked Mind: Ritual Consciousness and the Factor of Communitas in Networked Rites of Compassion', *Technoetic Arts: A Journal of Speculative Research*, 13: 3, pp. 331–339.
- _____ (2016) 'Techno-Spiritual Horizons: Compassionate Networked Art Forms and Noetic Fields of Cyborg Body and Consciousness', In *Consciousness Reframed, The 19th International Research Conference in The Planetary Collegium's Series*, Shanghai, China, 26-27 November, DeTao Shanghai Centre: Shanghai.
- Mulvey, Laura. (2006), *Death 24x a Second: Stillness and the Moving Image*. (Kindle version), Reaktion Books Chapter 3), Available form: [http:// www.amazon.com](http://www.amazon.com) [Accessed 20 August 2017].
- Murray, D. C. (2015), 'Notes to Self: The Visual Culture of Selfies in the Age of Social Media,' *Consumption Markets & Culture*, 18(6), pp. 490-516.
- Nemet-Nejat, K. R. (1993), 'A Mirror Belonging to the Lady of Uruk,' *The Tablet and the Scroll: Near Eastern Studies in Honor of William W. Hallo*, pp. 163-168.
- Persico, Tomer (2016), *The Jewish Meditative Tradition*, Tel Aviv: Tel Aviv University.
- Richter, Barbara A. (2016), *The Theology of Hathor of Dendera: Aural and Visual Scribal Techniques in the Per-Wer Sanctuary*, Brown University, Atlanta Georgia: Lockwood Press.
- Shannon, Benny (2003), *The Antipodes of the Mind: Charting the Phenomenology of the Ayahuasca Experience*, Oxford: Oxford University Press.
- Sontag, Susan (1979), *On photography*, London: Penguin Books.
- Wright, C. (2008). "A Devil's Engine": Photography and Spirits in the Western Solomon Islands'. *Visual Anthropology*, 21(4), pp. 364-380.]

ABOUT THE AUTHOR

Lila Moore is the founder of The Cybernetic Futures Institute (CFI), an educational and creative platform for the study of technoetic arts and consciousness with an emphasis on the spiritual in art, screen choreography and film. The platform involves the weaving of prototype Noetic Fields which are generated through the practice of Networked Rites. The CFI's concept constituted her post-doctoral project at the Planetary Collegium of Plymouth University (2015). Dr. Moore teaches courses on the intersection of Film, Religion and Contemporary Spiritualities, Film and Ritual, Film and Contemplation, Choreography for the Screen and Spiritual Art in pioneering educational programmes such as the BA department for Mysticism and Spirituality at Zefat Academic College and a UNESCO programme for Contemplative Pedagogy. She is a practicing artist film-maker, screen-choreographer, networked performance practitioner, and a visionary theorist with a practice-based Ph.D. degree in Dance on Screen (2001) from Middlesex University, UK .

E-mail: info@cyberneticinstitute.com

Website: <http://www.cyberneticinstitute.com>

Writing Ghosts: How to enter the room inside

ABSTRACT

How can the hidden, the lost, the submerged stories be told? How can we enter the sites of silence, how can we tell what is ineffable? In the following I will examine the difficulties of writing about highly personal stories of loss and desperation in literary and autoethnographic contexts.

The question that I, as a writer, am interested in, is: what happens to the writer with a focus on the self if writing is understood as the creation of a space, a space in which a writing subject constantly disappears?

KEYWORDS

autoethnography, creative writing, writing as research, heterotopia, ghosts

ENTER

This following thoughts about writing loss and desperation started with this fragment by Franz Kafka: "Everyone carries a room inside him. This fact can even be proved by means of the sense of hearing. If someone walks fast and one pricks up one's ears and listens, say in the night, when everything around is quiet, one hears, for instance, the rattling of a mirror not quite firmly fastened to the wall." (Kafka 1991) Before I will try to answer the question of how we can enter the room inside, I provide three short prose fragments about my understanding of this inner room, which were part of the piece *Im Zwischen* by Swiss Singer Hannah E. Haenni (2017).

Everyone carries a room inside her / a room, a hollow, a door / in front of the windows rhododendrons sit in neatly fastened boxes / well-intentioned flora in the colours of mutual insufficiency / let's say crimson / or mother of pearl / or vermilion / these plants are armed with ligneous stems and forever dry leafage / they consent to florescence if at all / defiantly

Would you enter this room inside, which by the way / is located right under the lungs / would you enter the door, / wearing light garment and no footwear, no / stockings / standing with bare feet on the doorsill, which would be / colder than you'd expect wood to be, / would you open the very door / carefully lacquered around glass panes / of opaque consistency / milky or moonlight / muzzled or proud / would you enter this room inside

On resilient planks / I carry the bags of cement / into myself / like one who believes that piling up alone can make a shelter / I pour a foundation / stack bricks / hang the plumb / plumb line or hand lead / I cover the thread / in chalk dust / and wait / until the centric movement is gone / I lower / the plumb / and discover / that no straight emerges / no angle at all / no hideouts / most of all no zenith / much as I cling / to the plumb / there is no / order / no innocence / no law

WHISPER

The room inside, slightly defective but provable. A bedroom maybe, a room with a mirror. How can we enter this room inside, this room as space of our stories, as the place for forming narratives about ourselves. I started my career as a writer with a very personal book: *Katertag*. It was about growing up in a dysfunctional family due to the parents' alcohol abuse. Even though it was and is highly personal, it is not about me or us, as I didn't write our stories in the book. But still, my family, my experience is inscribed in the whole text.

Earlier, during my final year when I studied Creative Writing, I had a project which was rooted in my family, I wrote portraits. Portraits of my parents, of their parents and theirs. I wrote about people of whom I had heard about only a couple of times in my life. That might seem strange—at least it does to me—but my mother's family came from northern Germany, the region which is Poland today, and there you don't talk much. You work, you live. They had to leave everything behind during WWII and when they finally found a place to stay in southern Germany, their accent was alien and they were even quieter than at home. On my father's side, too, there was war and eviction. I assume that on both sides was guilt.

They couldn't forget but they could cease remembering. This is why even about my grandparents, whom I have known in person, I hardly know more than the birth date and education. I grew up in silence. This silence or void was what I tried to recapture with my literary project. My parents, my grandparents became characters in my texts. For the first time in my life I understood why they were so constricted. Of course it was my version of them which I understood, but it was at least some understanding. I never finished that text after my graduation, I never published it. It had helped me to find my tone, my style. It helped me to find the room inside from which I can tell stories. My stories, other stories.

When I wrote *Katertag*, I didn't fill gaps. I had everything in my experience, but I had to make it accessible. How can we tell what is ineffable? How can we allow others to enter the sites of silence? These questions of distance were crucial to me. I did not want to go through my personal story again, because it was a story of weakness.

The weakness of a child who knows that everything is wrong but can't fix any of it. I wanted sovereignty, I wanted a strong voice. I developed characters and a story, I invented a story which would tell my story underneath. I had to write about what had not happened to convey what happened. This tension

between what is there and not at the same time is enclosed in the first sentence of the book, the first sentence which the main character, a young teenager, writes to his dad: I need you to know what I have to forget.

This place between presence and absence, the place which is here and not was described by Foucault as heterotopia, in unlike utopias, which are places that don't exist anywhere. I believe that between utopias and these quite other sites, these heterotopias, there might be a sort of mixed, joined experience, which would be the mirror. The mirror is, after all, a utopia, since it is a placeless place. In the mirror, I see myself where I am not, in an unreal, virtual space that opens up behind the surface; I am over there, there where I am not, a sort of shadow that gives my own visibility to myself, that enables me to see myself there where I am absent: such is the utopia in the mirror. But it is also a heterotopia in so far as the mirror does exist in reality, where it exerts a sort of counteraction on the position that I occupy. (Foucault 1986: 24)

Is it a coincidence, that it is the mirror which rattles in Kafkas thought that we all carry a room inside? Did he think of it as an instrument of awareness, of reflexion? He, who wrote daily what had happened to him, he who seems so alive in his writing and so sick of the life outside.

WRITE

Writing as a way of life (cf. Holman Jones et. al. 2013: 53), writing as a method of discovery (Richardson 2001: 37). We can write in order to learn something that we didn't know before we wrote it (cf. Ibid.), as the postmodernist position does allow us to know "something" without claiming to know everything. Having a partial, local, and historical knowledge is still knowing (Richardson 2008: 961). We can find a more artistic interpretation of the desire to write as an inquiry in Carolyn Ellis statement about what drives her autoethnographical work: I tend to write about experiences that [...] challenge the meaning I have put together for myself. [...] I write when my world falls apart or the meaning I have constructed for myself is in danger doing so. (Ellis 2004: 33) It is an epiphany or a tiny moment of confusion that makes us question ourselves or the world as we see it. To produce knowledge [...] autoethnographers intentionally use personal experience to create nuanced, complex, and comprehensive accounts of cultural norms, experiences and practices. Autoethnographers offer these accounts [...] to facilitate an understanding, and often a critique, of cultural life by encouraging readers to think about [...] experiences, and practices in new, unique, complicated, and challenging ways. (Adams & Holman Jones & Ellis 2015: 32-33). Involving readers to think about cultural phenomena through highly personal narratives is a liberation, as it allows researchers to include themselves, their experience in academic texts. As Bochner recalls: We wanted to create a space in which social science texts could be viewed as stories and their authors — the researchers — as storytellers. The personal, emotional, and embodied narratives we had in mind would be presented in forms that depart

radically from the conventions of rational/analytic social science reporting. [...] Shouldn't there be a closer connection between our research texts and the lives they represent? What we had in mind were texts that would be more similar to life stories, memoirs, personal essays and first-person accounts. (Bochner 2012: 157) But this approach also is extremely demanding, as it requires the personal to be told in public. Davis and Ellis state: You have to have a strong ego to write autoethnography—to make yourself vulnerable to criticism about your most personal stories. (Davis & Ellis 2010: 284), in other words: the author has to embrace the vulnerability of asking and answering questions about experience [...]. Autoethnographers embrace vulnerability with a purpose [...]: The exposure of the self who is also a spectator has to take us somewhere we couldn't otherwise get to. (Adams & Holman Jones & Ellis 2015: 40).

What happens to the writer with a focus on the self if writing is understood as the creation of a space, a space in which a writing subject constantly disappears? (Foucault 1997: 204) How can we make our personal story accessible, part of a larger discourse, which means exposing ourselves, while disappearing as the writing subject? In other words: How can we construct a space for the reader, in which the text or story unfolds, if we are the subject of it? My approach is to emphasize the space and not the subject.

Writing means constructing a space, a space that mirrors the room we carry inside. It is, in my imagination, an empty room. Empty, apart from the mirror. It can be furnished by the reader, by whoever is contained in it. It is like a stage, maybe, a very small stage: bare and ready to be transformed. The notion of space in writing is for me manifest if I write texts for a performance on stage, together with musicians. In this context the text, mostly fragments without steady order, become a musical voice – I can layer the narrative into the sound, make it appear and hide it at the same time. I cannot have the same level of complexity as in written texts, the attention is also elsewhere; with the sound, with the other performers: the text has to make itself heard indirectly (Barthes 1975: 24).

All writing, and especially writing about the self has to embrace the idea that in writing we inhabit ourselves as ghosts, here and at the same time elsewhere, fleeting yet present. (Steinweg 2010: 30, my translation) While being in the focus of attention or narration, the subject eludes the touch. We will never be able to pin a subject within language (Foucault 1997: 204), but to use language to build a room inside the reader, room and mirror and maybe a door. The essence of literary language lies [...] in its ability to create something new – a coherent, motivated “heterocosm”, or other world. (Hutcheon 1980: 42)

REFERENCES

- Adams, T.E.; Holman Jones, S.; Ellis, C. (2015) *Autoethnography: Understanding qualitative research*. Oxford University Press.
- Bartes, R. (1975), *The Pleasure of the text*. Farrar, Straus and Giroux.
- Bochner, A. P. (2012). *On first-person narrative scholarship: Autoethnography as acts of meaning*. *Narrative inquiry*, 22(1), 155-164.

- Davis, C.; Ellis, C. (2010) 'Emergent methods in autoethnographic research: Autoethnographic narrative and the multiethnographic turn.' In: Hesse-Biber, S. & Leavy P. (ed.). *Handbook of emergent methods*. Guilford Press.
- Ellis, C. (2004), *The ethnographic I: A methodological novel about autoethnography*. Rowman Altamira.
- Foucault, M., & Miskowiec, J. (1986). *Of other spaces*. Diacritics.
- Foucault, M., Rabinow, P., & Hurley, R. (1997), *The essential works of Michel Foucault, 1954-1984*. The New York Press.
- Holman Jones, S. H., Adams, T. E., & Ellis, C. (Eds.). (2013), *Handbook of autoethnography*. Routledge.
- Hutcheon, L. (1980), *Narcissistic narrative*, Wilfried Laurier University Press.
- Kafka, F. (1991) *The blue octavo notebooks*. Exact Change.
- Richardson, L.; St. Pierre, E. (2008), 'Writing A method of inquiry,' In: Denzin, N. K., & Lincoln, Y. *The SAGE handbook of qualitative research*. Sage.
- Steinweg, M. (2010). *Aporien der Liebe*. Merve-Verlag.

ABOUT THE AUTHOR

Regina Dürig, born in 1982 in Mannheim, Germany, is a writer, performer, lecturer and researcher. In her creative work she explores narration in various formats and media. She closely collaborates with the musician Christian Müller in the experimental sound and story duo Butterland. Her writings have been awarded several prizes, a.o. the Literature Prize of the Cantone of Berne. Regina Dürig works as lecturer for Creative Writing at the Berne University of the Arts. She is a PhD candidate at the Planetary Collegium.

Email: regina.duerig@hkb.bfh.ch

NIKOS DEMETRIOS MAMALOS
Ionian University, Greece

The Island of Time: the infamous Pontikonisi of Corfu as self transcendence limit

ABSTRACT

Strange as it may sound, the symbol par excellence of Corfu, one of the most photographed places in Greece, the Pontikonisi (Mouse Island) has not been studied historically: not even one monograph highlights the symbolism and the imaginary all around it. In fact we do not know anything about it! Although, it has influenced arts in a unique way.

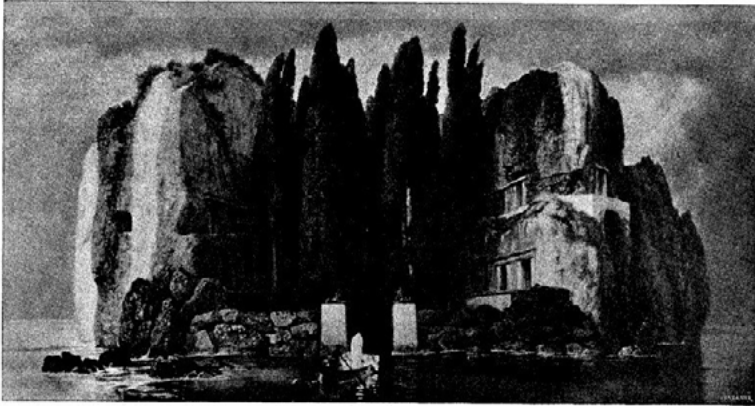
The presentation utilizes the unique cultural background of Corfu and through the analysis of the picturesque island outlines a unique history of the relationship of man and the natural environment: starting from the mythical narrative about the petrified ship of Odysseus, the esoteric aspects of his visit in the island of Feakes and the interpretation of the lone visits of Queen Elizabeth are combined with the famous work «Island of the Dead», of symbolist Arnold Böcklin, and two other inspired works: the Rachmaninoff's symphonic poem and the American horror b- movie (1945) with Boris Karloff. Besides these, will be presented the «unknown» psychedelic, transcendental and metaphysical avant-garde story of the American poet Hilda Doolittle with the title «Pontikonisi» (Mouse Island) written in 1932 after a visit to Corfu. The poet was in psychoanalysis with Sigmund Freud in Vienna during 1933-1934 and expressed her Corfu experience. Her visions also used during the theoretical and applied pioneering involvement with the cinema (1930's film Borderline).

A famous tourist attraction, known mainly only for its natural beauty, is studied as self transcendence limit. It is like the Room in the Andrei Tarkovsky's Stalker: it fulfills not just the wishes of a visitor, but the true unconscious desires of those that come in.

KEYWORDS

Corfu, Pontikonisi, Hilda Doolittle, Arnold Böcklin, Sigmund Freud, Odysseus, esoterism, occult, transformation, cinematography, avant garde, stalker, transfiguration.

ΕΙΣΑΓΩΓΗ



ΕΛΛΗΝΟΓΡΑΦΙΑ Α. ΜΠΑΠΑΓΙΑΝΝΑΚΟΥ

ΝΗΣΟΣ ΤΩΝ ΝΕΚΡΩΝ

Εικόνα 1: Το Νησί των Νεκρών στα Παναθήναια (1903)

Το Μαρμαροκάραβο

Θα πιάσουμε το νήμα από την αρχαία εποχή. Σύμφωνα με τον Όμηρο ο Οδυσσέας επισκέφτηκε το νησί των Φαιάκων πριν καταλήξει στην Ιθάκη. Ήδη από την αρχαιότητα το νησί της Κέρκυρας ταυτίστηκε με τον προτελευταίο προορισμό του ήρωα (υπάρχουν σχετικές πληροφορίες στον Θουκυδίδη, τον Στράβωνα, τον Πλίνιο κ.α.) ώστε όταν στα νεώτερα χρόνια πλήθος περιηγητών, αρχαιολόγων, ταξιδευτών και αρχαιοδιφών πέρανε από τα Ιόνια Νησιά, στο αποκορύφωμα του Ρομαντισμού και του Νεοκλασικισμού, αναζητούσε να περπατήσει στα ίδια μέρη με τον Οδυσσέα, τη Ναυσικά, τον Αλκίνοο και τους ανθρωπομορφικούς Θεούς. Το αν έχει πράγματι κάποια επιστημονική βαρύτητα ο εντοπισμός των σημείων της παρουσίας του Οδυσσέα στην κερκυραϊκή γεωγραφία (λιμνοθάλασσα Χαλικιόπουλου, Έρμονες, Αφιώνας κ.α.) δε θα μας απασχολήσει εδώ. Ο μύθος στο πέρασμά του δημιουργεί πραγματικότητες.

Ένας ξένος σε ξένη χώρα

Στην πρωτοποριακή, όχι μόνο για το 1970 που κυκλοφόρησε αλλά και για τα σημερινά δεδομένα, μελέτη του «Φαιακία. Μητριαρχικά στοιχεία και μυθικές αφητηρίες της Οδύσσειας» ο Ιθακήσιος εθνολόγος και θρησκευολόγος Παναγής Λεκατσάς (1911-1970) δε σταματά να εκπλήσσει με τις σαγηνευτικές του ερμηνευτικές προσεγγίσεις. Δεν αναφέρεται πουθενά στην τοπογραφία του Νησιού των Φαιάκων, αλλά αντίθετα μελετά το συμβολισμό των γεγονότων, καθώς υποστηρίζει ο Οδυσσέας δεν πάτησε ποτέ το πόδι του εκεί!

Στην Ε' Ραψωδία ο Οδυσσεάς πραγματοποιεί τον πολυπόθητο απόπλου από το νησί της Καλυψούς ύστερα από παρέμβαση των Θεών. Το κυνηγητό του Ποσειδώνια δεν σταματά για άλλη μια φορά οπότε ο ήρωας φθάνει μισοπνιγμένος και γυμνός, ύστερα από τριήμερη πάλη με τα κύματα, στο Νησί των Φαιάκων. Το πρώτο πράγμα που κάνει εκεί είναι να κοιμηθεί μέσα σε στρώμα από φύλλα. Τα γεγονότα των υπόλοιπων Ραψωδιών όσο βρίσκεται στο νησί είναι γνωστά: η συνάντηση με τη Ναυσικά, η φιλοξενία στο παλάτι του Αλκινόου, η αποκάλυψη της ταυτότητάς του, η δημόσια εξιστόρηση των περιπετειών του και το κατευόδιο με πλούσια δώρα στην Ιθάκη. Μέσα στο καράβι της επιστροφής κοιμάται (;) και όταν φθάνει εκεί οι σύντροφοί του τον αφήνουν εντός του Σπηλαιού των Νυμφών όπου παραμένει κοιμισμένος. Για αυτή την εξέλιξη είχε μάλιστα προειδοποιηθεί από το βασιλικό ζεύγος του Νησιού των Φαιάκων ότι «θα φθάσει παραδομένος στον ύπνο στην πατρίδα του». Τι είδους προγραμματισμός είναι αυτός;

Ένα όνειρο ανάμεσα σε δύο ύπνους

Ποια είναι λοιπόν η περίφημη ερμηνεία του Λεκατσία; Ο πρώτος ύπνος του Οδυσσέα πάνω σε φύλλα και δίπλα στο ποτάμι είναι μυητικός στο πρότυπο των Σπαρτιατών και Κουρητών, της Πυθίας και των μάγων της Περσίας, των Θεσμοφοριών κ.α. που ανανεώνει τη Ζωή αποτελώντας σύμβολο και μέσο της Νέας Ζωής. Ο δεύτερος είναι εξίσου ιεροτυπικός ξανά κοντά σε ελιά και τρεχούμενα νερά. Η συλλογιστική είναι συγκλονιστική: «είναι φανερό πως οι δύο ύπνοι που πλαισιώνουν την περιπλανητική περιπέτεια του πρωταγωνιστή της Οδύσσειας είναι *προβολές Μυητικών Ύπνων*, μετασχηματισμένες από τους παλαιότερους ποιητές και παραδομένες στους στερνούς συνθέτες της σα στοιχεία της περιπλανητικής περιπέτειας του ήρωα της. Δύο όμως ύπνοι μυητικοί που πλαισιώνουν μια θαυμαστή περιπέτεια, δεν είναι παρά ένας μονάχα, κ' η περιπέτεια που πλαισιώνουν το Όνειρο του ύπνου αυτού, που τον χωρίζει, στην ποιητική παράσταση σε δύο». Τυχαία ο Λώρενς Ντάρελ αποκάλυψε την Κέρκυρα το νησί του ύπνου; Μήπως η όλη αφήγηση είναι μια πρωθύστερη περιγραφή της περίφημης υγρασίας της; Αλλά αν όλα είναι ένα όνειρο τότε...

Παρόλο που, όπως αναφέρθηκε, δε θα μας απασχολήσει ο γεωγραφικός εντοπισμός του περάσματος του Οδυσσέα θα επιλέξουμε ένα μόνο σημείο της ιστορίας. Ο Όμηρος περιγράφει ότι τη στιγμή που ο Οδυσσεάς φθάνει στην Ιθάκη, ο Ποσειδώνιας, επειδή είχε ενοχληθεί βαθιά με τους Φαίακες, πέτρωσε το πλοίο που είχε μεταφέρει τον Οδυσσέα στην Ιθάκη όταν αυτό γύρισε πίσω ώστε «λίθον, να ομοιάζει πλοίον πάντοτε, θαύμα να το 'χουν όλοι». Υπάρχουν πολλές θεωρίες για το που βρίσκεται αυτό το μαρμαρωμένο καράβι και μια από αυτές είναι για το Ποντικονήσι που ως γνωστόν βρίσκεται έξω από το λιμάνι της αρχαία πόλης. Η ταύτιση αυτή πέρασε από τη μυθολογία, στην καθημερινή αφήγηση και τη λαογραφία ώστε όταν έφθασε εδώ η Ελισάβετ της Αυστρίας βρήκε ένα σημείο που κάλυπτε τις εξωτερικές και εσωτερικές αναζητήσεις της. Πλέον το Ποντικονήσι είναι ΚΑΙ το «Νησί των Νεκρών» του Μπέκλιν.

Η ΒΑΣΙΛΙΣΣΑ ΚΑΙ Ο ΚΑΤΩ ΚΟΣΜΟΣ

Ήδη από το 1887 η Ελισάβετ της Αυστρίας έχει ξεκινήσει τα σχέδια της για μια έπαυλη στην Κέρκυρα. Όταν το 1889 πεθαίνει και ο γιος της Ροδόλφος, διάδοχος του θρόνου, μαζί με την ερωμένη του Μαρία Βετσέρα στο κυνηγετικό περίπτερο του Μάγιερλιγκ, στα δάση της Βιέννης η ατμόσφαιρα της ζωής βαραίνει περισσότερο. Ή ίδια ζει μέσα σε ατμόσφαιρα που συνδυάζει το γοτθικό και ρομαντικό στοιχείο της ποίησης, της ζωγραφικής και των ελληνικών μύθων. Ο δάσκαλος της ελληνικής γλώσσας, Κωνσταντίνος Χρηστομάνος καταγράφει τα έτη 1891-1892 τη ζωή της Ελισάβετ στην Κέρκυρα. Όπως σημειώνει ο Μωρίς Μπαρές (Maurice Barrés) στην εισαγωγή του «άλλο βασίλειο δεν ήθελε παρά απ' την εσωτερική της ζωή και που η μόνη της φροντίδα ήταν η εξαύλωση του εαυτού της και να πλατύνει την περιοχή του ονείρου της». Η μυθιστορηματική βιογραφία της θα εκδοθεί στα γερμανικά το 1898, στα γαλλικά το 1900 και στα ελληνικά το 1908 και θα βάλει τις βάσεις για τη διαμόρφωση του μύθου της. Όταν περνούν μπροστά από τη Γαρίτσα η Ελισάβετ του παρουσιάζει τα αξιοθέατα του νησιού. Το Μον Ρεπτό βρίσκεται για αυτήν στους κήπου του Αλκινόου ενώ όταν μπαίνουν στη λιμνοθάλασσα Χαλικιόπουλου και βλέπουν το Ποντικονήσι:

«Αυτό το νησάκι, είπα, μου φαίνεται σαν το Νησί των νεκρών του Μπέκλιν. Τα κυπαρίσσια γυροστέκουν εκεί σαν πένθιμα ονειράτα και τα φλογερά άνθη που καθρεφτίζονται στα κύματα είναι ιερά της Περσεφόνης. Οι Κερκυραίοι χωρίς τόση ποίηση το ονοματίζουν Ποντικονήσι, είπε η Αυτοκράτειρα. Ο κ. Βάρσμπεργ από μέρους του φανταζόταν πως είναι το καράβι των Φαιάκων που τόχει μαρμαρώσει ο εκδικητικός σείσθης Ποσειδών και ήταν όλος αγανάκτηση για τη βέβηλη ονομασία των σημερινών Φαιάκων. Αλλά θαρρώ πως και τα δύο τα μέρη έμεναν καταευχαριστημένα με τόνομα που διάλεξαν, καθώς κ' εσείς με το δικό σας.

Πλέον το Ποντικονήσι θα βρίσκεται σε φωτογραφίες, καρτ ποστάλ κτλ ως «Ile d'Ulysse» και «Die Toteninsel». «Τώρα πλέει αγνώριστη και θανατερά σιωπηλή μέσα στο ψαράδικο το πέραμα, - όπως μια λευκή ψυχή στο νεκρονήσι του Μπαϊκλιν, - προς το θαλασσόβρεχτο νησάκι με τα κυπαρίσσια», θα σημειώσει ο Κώστας Πασαγιάνης λίγα χρόνια αργότερα. Για αυτή η θάλασσα είναι «εξομολογητής που επιστρέφει ζωντάνια και παίρνει πίσω ότι ξένο». Γιατί η εμμονή με αυτόν τον πίνακα όμως; Ο ζωγράφος φιλοτέχνησε τις εκδοχές του έργου στο χρονικό διάστημα μεταξύ 1880-1886. Η πρώτη εκδοχή (1880) απευθύνονταν στον πάτρωνα του Alexander Günther αλλά τελικά παρέμεινε στην κατοχή του καλλιτέχνη. Η δεύτερη, την ίδια χρονιά, ολοκληρώθηκε ύστερα από επιθυμία της χήρας Marie Berna, η οποία ζητώντας του μια εικόνα με την οποία να ονειρευτεί (ο σύζυγος της είχε αποβιώσει από διφθέρα) τον προτρέπει επιτυχημένα την πρόσθεση τόσο της ασπροφορεμένης γυναικείας μορφής όσο και του φέρετρου μπροστά. Η τρίτη εκδοχή, το 1883, προοριζόταν για τον έμπορο και συνεργάτη του καλλιτέχνη Fritz Gurlitt, η τέταρτη (καταστράφηκε στους βομβαρδισμούς του Β' Παγκοσμίου Πολέμου) το 1884 για τον συλλέκτη τέχνης Heinrich Thyssen ενώ η πέμπτη το 1886 ύστερα από αίτηση του Μουσείου Καλών Τεχνών της Λειψίας .

Οι επιμέρους διαφοροποιήσεις (κυρίως εντοπισμένες στις λεπτομέρειες) των πέντε εκδοχών δεν θα μας απασχολήσουν κυρίως. Το σημαντικό στοιχείο εντοπίζεται στο γεγονός ότι η επικρατέστερη μορφή του καλλιτεχνήματος διαμορφώθηκε ύστερα από την επίσκεψη της Marie Berna στο καλλιτεχνικό εργαστήριο του Arnold Böcklin στα 1880. Η οικογένεια του καλλιτέχνη βρισκόταν τότε στη Φλωρεντία, κάτι που οδηγεί στην πρώτη εκδοχή της πηγής της έμπνευσης: το αγγλικό κοιμητήριο της Φλωρεντίας. Ο ίδιος ο καλλιτέχνης σε επιστολή του προς τον πρώτο παραλήπτη του έργου το ονομάζει «Η νήσος των νεκρών» (Toteninsel) αν και δεν το προσδιόρισε ποτέ έτσι επίσημα. Άλλες πιθανές εκδοχές της έμπνευσης περιλαμβάνουν τα νησάκια St. Juraj, νότια του Dubrovnik και Ischia. Υπάρχει όμως πιθανότητα να ήταν όντως η Κέρκυρα η πηγή έμπνευσης του καλλιτέχνη;

Η ΛΑΪΔΗ ΤΣΑΤΕΡΛΥ ΣΤΟΝ ΠΕΛΕΚΑ

Όταν η αβάν γκαρντ Αμερικανίδα ποιήτρια Χίλτα Ντούλιτλ (1886-1961) (Hilda Doolittle - H.D. {Hermetic Tradition η τελευταία της συλλογή}) αφήνει το Λονδίνο για να γνωρίσει την Ελλάδα, που μαγνήτιζε τη σκέψη της, μαζί με τη φίλη και ερωμένη της Bryher είχε καταφέρει να επιβιώσει από μια σειρά ατυχών γεγονότων και να προλάβει να αποφύγει τη νευρική κατάρρευση. Είχε προλάβει στα 34 της να αποτελέσει τη Δρυάδα του Έζρα Πάουντ, να σπάσει τους δεσμούς της με τον Ντ. Χ. Λώρενς (πρόλαβε όμως να αποτελέσει το πρότυπο για την «Λαΐδη Τσάτερλυ» του), να γεννήσει με κίνδυνο της ζωής της την κόρη της Περνίτα εν μέσω της πανδημίας της Ισπανικής Γρίπης ενώ έχανε τον πατέρα της που δεν άντεξε το θάνατο του πρωτότοκου γιου του (και αδερφού της) στον Α΄ Παγκόσμιο Πόλεμο. Στην Κέρκυρα φθάνει το Μάρτη του 1920 και θα επισκεφτεί για πέντε εβδομάδες το Κανόνι, τον Ποταμό, την Παλαιοκαστρίτσα και τον Πέλεκα. Στο προπολεμικό ξενοδοχείο Hotel Angleterre et Belle Venise (στο Λιστόν) είχε την περίφημη μεταφυσική εμπειρία του «γραψίματος στον τοίχο» που θα την στοιχειώσει μέχρι το τέλος. Αν η Σίσσυ προσέδωσε στο Ποντικονήσι, μέσω της ταύτισης με τον περίφημο πίνακα «Το Νησί των Νεκρών» του Ελβετού συμβολιστή Α. Μπέκλιν, τη ρομαντική/γοθική χροιά που θα το ακολουθεί πλέον στις περιγραφές και στους ταξιδιωτικούς οδηγούς, με τη Χίλτα Ντούλιτλ μιλάμε για κλίμα συναυλίας Χέβι Μέταλ. Αυτή την εμπειρία θα επιλέξει να αφηγηθεί στον Σ. Φρόντ στη σειρά συνεδριών που είχε μαζί του 1933-34 στη Βιέννη. Ο Φρόντ θεώρησε την εμπειρίας της «γραφής στον τοίχο» ως το πιο επικίνδυνο σύμπτωμα. Γράφει η ίδια η H.D.: «Οι σειρές των εικόνων- είτε ήταν σκιές είτε ήταν από φως- που είδα να προβάλλονται στον τοίχο ενός ξενοδοχείου στο Ιόνιο Νησί της Κέρκυρας, στα τέλη του Απριλίου του 1920, ανήκουν, ως προς την ποιότητα και την ένταση, τη διαύγεια και την αυθεντικότητα, στην ίδια ψυχική κατηγορία με το όνειρο της Πριγκίπισσας, της κόρης του Φαραώ, να κατεβαίνει τα σκαλιά (σ.σ. Πρόκειται για παλιότερο όραμα της). Θεωρώ αυτό το είδος του ονείρου ή της προβεβλημένης εικόνας ή του οράματος σαν ένα είδος ενδιάμεσης κατάστασης μεταξύ ενός κανονικού

ονείρου και ενός οράματος από εκείνα που επισκέπτονται μερικούς ανθρώπους τους οποίους, ελλείψει ενός πιο συγκεκριμένου όρου, ονομάζουμε πνευματιστές ή τηλεπαθητικούς. (...) Ο Προφέσορ είχε μεταφράσει τις εικόνες (...) σαν μια επιθυμία να ενωθώ με την μητέρα μου. Σωματικά βρισκόμουν στην Ελλάδα (Ελένη). Είχα έρθει σπίτι στο κλέος που ήταν κάποτε η Ελλάδα. (...) Μπορώ να πω ότι ποτέ πριν και ποτέ έκτοτε δεν είχα ανάλογη εμπειρία. Είδα ένα θαμπό σχήμα να διαγράφεται στον τοίχο ανάμεσα στα πόδια του κρεβατιού και το λαβομάνο. Ήταν αργά το απόγευμα. Ο τοίχος ήταν βαμμένος σε ένα μουντό ώχρα χρώμα. Στην αρχή, είχα νομίσει πως ήταν οι τρεμάμενες ηλιαχτίδες: ότι διαπερνούσαν τη σκιά που έριχναν στο παράθυρο οι φουντωμένες, μ' όλο τους το φύλλωμα, με καρπούς και άνθη, πορτοκαλιές, και έφταναν ιριδίζοντας, ως το δωμάτιο. Όμως αμέσως κατάλαβα ότι η δική μας πλευρά του σπιτιού βρισκόταν ήδη μέσα στη σκιά. Οι εικόνες στον τοίχο ήταν σαν άχρωμες ζωγραφιές ή χαλκομανίες, όπως τις ονομάζαμε παιδιά. Η πρώτη ήταν ένα κεφάλι και ώμοι: πρόσωπο με τρία τέταρτα, κανένα συγκεκριμένο χαρακτηριστικό, σαν στάμπα ή στένσιλ στρατιώτη ή αεροπόρου –όμως η μορφή έφεγγε απαλά μέσα στη σκιά και όχι το αντίστροφο. Ήταν μια σιλουέτα φτιαγμένη από φως, όχι από σκιά. (...) Ύστερα φάνηκε το συμβατικό περίγραμμα ενός κάλυκα ή κυπέλλου, που κάπως θύμιζε το ιερό δισκοπότηρο (...). Ένας ή δύο κύκλοι, η βάση είναι ο μεγαλύτερος από τους δυο, είναι ενωμένοι με τρεις γραμμές, όχι επίπεδοι, όπως είπα, αλλά σε προοπτική (...) δεν είναι παρά ο παλιός μας φίλος, ο τρίποδας των Δελφών (...).

Ως γνωστόν η απέχθεια του Αυστριακού Ψυχολόγου για οτιδήποτε μεταφυσικό (πιθανότατα η μεγαλύτερη αδυναμία του τρομακτικού σε σημασία έργου του) ήταν παροιμιώδης ώστε να υπάρχει διαφορετική προσέγγιση της εμπειρίας. Για αυτόν η εμπειρία ήταν απλώς προϊόν της άλυτης νευρωτικής εξάρτησης από τη μητέρα της. Η Η.Δ. θα γράψει ότι γενικότερα : «Υπήρχε η διαφωνία μας εγγεγραμμένη στα ίδια μας τα κόκαλα». Για αυτήν η εμπειρία είναι το κλειδί της ποιητικής έμπνευσης και σκιαγραφεί «το νόημα της γυναικείας εμπειρίας σε έναν ανδροκρατούμενο κόσμο». Η ίδια διατήρησε την αμφισεξουαλικότητας της μέχρι το τέλος και το όνομα της έγινε συνώνυμο των φεμινιστικών διεκδικήσεων και αργότερα της LGBT κοινότητας. Λίγο πριν ξεκινήσουν οι συνεδρίες με τον Φρόιντ παρουσιάζει στο περιοδικό 'Pagan' την ιστορία Pontikonisi (Mouse Island) με το βιβλικό ψευδώνυμο Rhoda Peter. Η αυτοβιογραφική ιστορία δύσκολα περιγράφεται από εδώ: Πόε, Μπωτλαίρ, Μπέκλιν, Οδυσσέας, Ροβινσώνας Κρούσος, Νώε, Ελισάβετ Αυστρίας, Κάιζερ Γουλιέλμος, Ισιδώρα Ντάνκαν και ψευδώνυμα των ερώτων της περιπλέκονται στο κερκυραϊκό περιβάλλον του Κανονιού, του Αχιλλείου, των Λιαπάδων και της Παλαιοκαστρίσας ανάμεσα σε οράματα και μυστικιστικές εμπειρίες, περιπλέκοντας τη λύση της εξίσωσης εξωτερικού περιβάλλοντος και εσωτερικής αναζήτησης.

Αυτό το ερμητικό της διήγημα μέχρι προσφάτως είχε αποφύγει το φως της δημοσιότητας. Στο ελληνικό κοινό είναι άγνωστο και περιέργως στις δύο βασικές εκδόσεις του έργου και της ζωής της ("Εισαγωγή στην Τριλογία της

Η.Δ” και στο “Φόρος Τιμής στον Φρόιντ”) δεν αναφέρεται πουθενά. Πρόκειται για τη οραματική εμπειρία που τιτλοφορείται «Mouse Island – Pontikonisi» και πρωτοεκδόθηκε το 1932, δώδεκα χρόνια μετά την συγγραφή του, στο περιοδικό *Parany* με ψευδώνυμο. Η εσωτερικότητα της ποιήτριας εγκολπώνεται την κερκυραϊκή τοπογραφία/μυθολογία σε ένα μοναδικό σύνολο απόκρυφης γνώσης που αποκαλύπτει την μυστική ιδιαιτερότητα μιας τοποθεσίας που χάνεται μέσα στην καθημερινότητα. Ένα διήγημα που καθιστά την Κέρκυρα πρωτεύουσα της υπερβατικότητας. Αυτό το διάστημα ολοκληρώνω τη μετάφρασή του. Παραθέτω ένα μικρό ενδεικτικό απόσπασμα:

«Το Ποντικονήσι σε εξαπατούσε εντός της παγωμένης καρδιάς ενός καμέο, σε στριφογύριζε, σε βύθιζε σε κεχριμπάρι και διέλυε το περίβλημα. Ολόκληρο ήταν διαμελισμένο με παγοκόπτη.



Εικόνα 2: Σύνθεση της Μαρίας Βενάρδου ειδικά για την παρούσα εργασία.

Κανείς δεν την είχε διδάξει να σκέφτεται με αυτόν τον τρόπο συλλογίστηκε: είναι μια βρυώδης πύλη, ένα παγωμένο στο χρόνο όνειρο, αντίστοιχο των Μπωτλαίρ και Πόε, υπό την επήρεια οπίου. Θα το είχαν σκεφτεί έτσι άνθρωποι ή μια μύγα ψηλά από έναν ερυθροκύανο κρόκο. Αυτό η απόχρωση ήταν σε σχέση με την άνθηση του Κάπρι, φωτιά μέσω ιριδίζοντος πετάλου άνθους σε σχέση με γαλανή κιμωλία. Αλλά αυτό δεν ήταν αυτό που νόμιζε: θυμόταν το Κάπρι σαν λοξοδρόμηση. Το Κάπρι ήταν πραγματικά νησί-Συρήνα αλλά ο Οδυσσεάς κατάφερε να διαφύγει. Το πλοίο του ήταν βράχος, το Ποντικονήσι, σε αυτή την ακτή.»

ΣΥΜΠΕΡΑΣΜΑ

Όπως η ραδιενεργός ζώνη στην ταινία *Stalker*, το Ποντικονήσι συνδέεται με τις βαθύτερες και εν πολλοίς ανεπίγνωστες επιδιώξεις του επισκέπτη του.

ΒΙΒΛΙΟΓΡΑΦΙΑ

- Λεκατσάς, Π. (1970) Φαιακία. Μητριαρχικά Στοιχεία και Μυητικές Αφειρηίες της Οδύσσειας. Αθήνα: Κείμενα.
- Μαθιόπουλος Ε. (2005). Η τέχνη πτεροφύει εν οδύνη. Αθήνα: Ποταμός.
- Σακελλίου, Λ., Ντόκος Θ., Στραβέλης. Θ. (επιμ. μεταφρ.). (2005) Εισαγωγή στην τριλογία της Η.Δ. Αθήνα: Gutenberg.
- Τσουμάνης, Κ. (2010). Η Κέρκυρα μέσα από τα μάτια των περιηγητών. Αθήνα: Έψιλον.
- Χρηστομάνος, Κ. (1990). Το βιβλίο της Αυτοκράτειρας Ελισάβετ. Αθήνα: Ίδρυμα Κώστα και Ελένης Ουράνη.
- Doolittle H., (2006 []) Φόρος τιμής στον Φρόνυτ, μετάφρ. Κατερίνα Σχινά. Αθήνα: Νεφέλη.
- Gibson, M. (2006) Symbolism. Taschen.

ABOUT THE AUTHOR

Nikos Demetrios Mamalos was born in Corfu in 1981. He studied Theology at the University of Athens and History at the Ionian University. He received his MA in «Methodology and Critical Edition of Historical and Sources» in 2016 at the Ionian University. The subject of his thesis was an unknown «Guide to Confession», dates back to 19th century, from an Eastern Orthodox monastery of North Corfu. He is a PhD student at the Department of Foreign Languages, Translation and Interpreting of the Ionian University. His doctoral thesis investigates the life and work of the greatest Greek traveler of Asia and Africa Panaghiotis Potagos. He often writes articles in the local press and he is chief editor of the local history and culture magazine «*Portoni*».

Email: karoumpos@gmail.com

Website: <https://tzogatolo.wordpress.com/>

Artificial

MARIANA ZIKU
Athens School of Fine Arts, Greece

Art Theory and Artificial Intelligence in Greece: A documentation of 30 years of cross-disciplinary research with dialog between Poly Kasda and John Kontos

ABSTRACT

The essay aims to bring forward the ongoing interdisciplinary collaboration of artist–writer Poly Kasda and professor of artificial intelligence John Kontos, who marked the beginning of the art theory, consciousness and artificial intelligence discourse in Greece in the mid 80's, based on an original research. To this end, the essay outlines three projects of Kasda–Kontos collaboration in the course of 30 years, which explored the intersection of their threefold field of endeavor: a) The film documentary 'The Adventures of the Eye' (1986), b) Kasda's book publication 'The Conscious Eye: Art – Perception – Informatics' (1988), c) Kasda–Kontos' joint book publication 'Artificial Intelligence Professor John Kontos needles Poly Kasda's "Conscious Eye": Perception – Consciousness – Diegesis – Discovery – Creativity' (2015).

In respect to Kasda–Kontos' research in process, I will attempt a critical reflection between art theory, consciousness studies and artificial intelligence, stressing in particular the concepts of myth and mythical thought, which Kasda has explored persistently with original contributions through her long-term project Myth/Network (1990-2017).

KEYWORDS

art theory, artificial intelligence, consciousness, Poly Kasda, John Kontos, introspection, myth

'The Adventures of the Eye' (1986): A dialog of Art Theory, Cognitive Science and Artificial Intelligence Research in Greece

[The pioneering film documentary 'The Adventures of the Eye' by Poly Kasda explored the frontiers of visual perception and consciousness in relation to art. It included an interview with John Kontos which marked the beginning of Kasda–Kontos' collaboration and lifelong friendship.]

In 1986 the film documentary 'The Adventures of the Eye'¹ by Poly Kasda was broadcasted in the Greek television. It was a creative research project that explored the frontiers of visual perception and consciousness from an art theoretical point of view. The documentary included an interview with Prof. John Kontos on artificial intelligence (AI) and in particular, on the basics of computer vision and machine learning.

For the production of the documentary Poly Kasda visited MIT, where she met with the pioneer of computer science education Prof. Seymour Papert and his research team (Casdas, 1986). There she had the chance to review the cutting edge of AI and cognitive science. She also visited UCL and University of London, Institute of Education, where she held meetings with Prof. Celia Hoyles and Prof. Richard Noss (Casdas, 1987), whose research was focused on the design of computational environments for learning a range of ideas, firmly mathematics-oriented.

Poly Kasda's documentary can be pinpointed as one of the earliest encounters of art theory, cognitive science and artificial intelligence in Greece and a milestone of this interdisciplinary discourse.² Kasda's research was the backbone of a series of talks, a conference at the National Technical University of Athens³ and a radio show on contemporary art at the then renown 'Trito Programma' (Third Program) radio station of the Greek state broadcaster ERT.⁴

The documentary *The Adventures of the Eye* was conceptualized as a philosophical film essay. The script unfolds through a disembodied narrative voice that poses open questions on how it sees the world, inquiring the conceptual and physical aspects of humanity. It presents modern art movements as cubism, dada, abstract expressionism, minimal art or op art, raising the question whether they bring an intellectual leap for humanity.

Although there were already a handful of artistic initiatives in Greece that explored innovative technologies as computer graphics and electronic media

¹Poly Kasda (conception, research, texts), 'The Adventures of the Eye' (Οι περιπέτειες του ματιού), directed by Marc Gastine (direction-scenario), film documentary on the TV show *Periskopio*, Athens, Hellenic Radio Television/ERT, 1986, video.

² John Kontos was at that time the only researcher in the field of artificial intelligence located in Greece and was trying to form the first Greek research group on AI as the Director of the Computer Department at the National Centre of Scientific Research 'Demokritos' in Athens. Poly Kasda was the first to approach Kontos from the arts and humanities field and as Kontos recounts, he was baffled why an artist would be interested in AI research. (Kasda and Kontos, 2015: 9).

³ The conference was organized by educational technologist Yannis Kotsanis with speakers Yannis Kotsanis, Chronis Kynigos, Poly Kasda, Celia Hoyles and Richard Noss. 'Computers in Education' Conference at NTUA, Athens, 7.2.1987. Photographic document: http://logogreekworld.ning.com/photo/emp1987-1?xg_source=facebookshare Accessed September 1, 2017.

⁴ Poly Kasda, *Contemporary Art* (radio show), at *Trito Vima* Radio Magazine, *Trito Programma* radio station, Hellenic Radio Television,/ERT, 1988-89.

Kasda's research for the radio show was backed up by the curated archive of the Art and Technology Department founded by artist Manthos Santorineos at the Ileana Tounta Contemporary Art Center.

(Moutsopoulos, 2017),⁵ the field of artificial intelligence was a rather out of reach faculty and at that time detached from art explorations. The course of art history and artificial intelligence has started only recently to be historicized and rediscovered internationally. Poly Kasda's documentary is part of the vanguard of an art-wise international interest towards artificial intelligence that emerged in the 80's.

One of the earliest conceptualizations of AI into the art history course was the MORELLI project, initiated in the mid 80's by William Vaughan, professor of art history at Birkbeck College. MORELLI was a pioneering system that would enable automatic analysis and classification of images utilizing computer vision. Vaughan's idea was put into practice many years later in 1993 at the University of California (Zweig, 2015).

Poly Kasda was one of the first to explore the interdisciplinary field of art history and AI in Greece. However, she did not focus on transient technical applications, but developed a rather unconventional, genuine theoretical approach using AI as a theoretical tool of introspection in order to explore the frontiers of human and non-human consciousness, putting in the core of her explorations the concept of myth.

The documentary marked the beginning of the dialog, collaboration and lifelong friendship of Kasda and Kontos, focusing on the ideas of interaction between theory of art and AI.

'The Conscious Eye' (1988): Perception – Art – Informatics

*[The visionary book *The Conscious Eye* by Poly Kasda (1988) is a study linking cognitive and informatics concepts to modern art movements, where Kontos wrote the introductory note.]*

In the years following the documentary, Kasda did a more thorough research on consciousness and informatics. This led to the publication of her book *The Conscious Eye* (1988) in Greek, a genuine reading of modern art which presented a scientifically-technologically informed art theory.

The book starts with two questions 'So what happened to many artists and they stopped painting? What lies behind this silence that took so many strange forms?' To these questions Poly Kasda reflects on human and artistic experience, reasoning on how scientific theories and technological discoveries resonate with art and the art theory discourse. Poly Kasda set the basis for an art philosophy of mind which captures a shift in perception: from external phenomena to the mental cognitive processes underlying these phenomena. In this respect, modern art goes far beyond a vacuous exhibitionism, down to an introspective process: turning ourselves from seeing the art objects to looking at our own multi-layered internal ways of sense-making.

Some of the concepts developed in *The Conscious Eye* are: cubism as an introspective state of mind, the computer as dada tool, minimal art and computational neuroscience, abstract expressionism and consciousness. The following paragraph outlines in brief an example of Kasda's approach on minimal art and its connection to the cognitive field of Gestalt psychology and the computational field of Marr's 'primal sketch'.

Minimal art does not address aesthetic objects, i.e. elaborated art to be praised for its aesthetic quality. In this sense the trivial act of lining bricks in a row –as seen in the renowned minimal artwork of Carl Andre 'Lever'– is a blueprint of a universal human cognitive incentive, namely lining-up similar objects. This correlates to the Gestalt principles, the fundamental laws of humans for grouping objects based on visual perception, as theorized by the Berlin School of Experimental Psychology under the faculty of Gestalt psychology. Correspondingly, the concept of 'primal sketch' as coined by neuroscientist David Marr relates to the study of visual processing and AI. Marr's primal sketch describes a bottom-up approach of how machines understand vision, starting with the analysis of the 'lowest-level', fundamental structures.

Minimal art and in general modern art, becomes thus a liberating observatory and experimentation platform to test perceptual and aesthetic abilities in humans and beyond, a system to experience and reify thought processes. In other words, on the discovery of new knowledge, Kasda points to the function of modern art as a transcription system for the conception and interpretation of emerging knowledge.

At the time of its publication *The Conscious Eye* met a positive reception. It was reissued a number of times before running out of print and fading into oblivion; however, it kept attracting a core of enthusiastic readers throughout the years. *The Conscious Eye* marked the advent of cognitive science and artificial intelligence in the art theory discourse in Greece.

The Conscious Eye contained many references to the then burgeoning AI as an autoendoscopic tool, in an effort to challenge 'logical' and 'epistemic modality' (Pye, 2009) and criticize preconceptions on the validity of science as a non-deflated epistemology.

The book contained a short note of Kontos that was printed on the back cover of the book, speculating on the new tools –assuming the concept of tools still holds– technologists can create in order to cope with the new hyper-reality (Kasda and Kontos, 2015: 10).

Poly Kasda's personal note in the preamble of *The Conscious Eye* is writing: 'This essay on the essence of contemporary art and visual perception is just the tip of the iceberg' (Kasda, 1988: 7).

After finishing *The Conscious Eye* she also recounts:

'After the completion of my book, I was left, again, with this Something Essential Missing, this SEM sensation' (Kasda, 2016: 9).

In the years following *The Conscious Eye*, Kasda continued her research meticulously, publishing the book 'Pyrisporos: Art – Science – Mythology' in

1994 (Kasda, 1994). It was an experimental and highly disputable writing that deliberately refrained from a linear, epistemological accepted narrative, in an attempt to integrate the concept of myth as a way of thought in a book narrative format, with the aim to reveal the internal paradoxes and incomprehensibility of myth. She later confesses that her essay *Pyrisporos* disturbed and chased away the audience she had gained with *The Conscious Eye* (Ziku, 2016).

‘Artificial Intelligence Professor John Kontos needles Poly Kasda’s Conscious Eye’ (2015): On Artificial Intelligence, Consciousness, Art and Computational Creativity

*[The above edition is a joint study of Kasda–Kontos on human – machine consciousness and art theory. It is a foundational interdisciplinary work with an educational approach on how topics mentioned in the book *The Conscious Eye* (1988) have evolved, in relation to the field of AI.]*

Almost 30 years after the inception of *The Conscious Eye*, Kontos noticed that many of the ideas presented in the book ‘were remarkable in their foresight of almost a Pythia-like nature’ (Kasda and Kontos, 2015: 10). What Kasda speculated in her thesis with a non-evidence based theory, was being corroborated in the course of the years with successive findings in the fields of AI and cognitive science. Kontos proposed a new joint endeavor in order to retrospect Kasda’s study and bring up its contemporary potential.

Kasda–Kontos’ publication ‘Artificial Intelligence Professor John Kontos needles Poly Kasda’s “Conscious Eye”: Perception, Consciousness, Diegesis, Discovery, Creativity’ (2015) is their most recent completed collaborative project that includes a reissuing of Kasda’s *The Conscious Eye* in English. The book incorporates a creative text layout, the ‘needling’ technique, which refers literally to the practice of acupuncture –a term Kontos came up with after his personal experience of pain-killing treatment– to describe metaphorically the snippets embedded by both in each other’s texts, with references and personal notes.

The ‘Needles’ edition is a collection of short essays that review the course of AI and in particular the subfields of machine consciousness and computational creativity with lists of relevant bibliography for each chapter, in relation to Kasda’s theoretical approach and artistic practice, and in particular her long-term art project *Myth/Network*.

The book presents some new ideas, related among others to metaphor research, autoendoscopic agents and to Kasda’s artistic practice for which the term ‘SAGA’, the acronym for ‘Social Action Generative Art’ was coined by Kontos to describe it. With regard to SAGA, Kasda’s art legacy does not focus on material things, but on the discovery and fabrication of an immaterial ‘mythical’ matrix of individuated experiences and artistic symptoms that points to Kasda’s long-term art project *Myth/Network*. SAGA as part of the mythical matrix is expressed through shared, modulated “social action” happenings, where participants can develop unpredictable individuated experiences and

social encounters, opening up a radical improvisation ground.

The book is overall a study on the essence and experience of human and non-human consciousness. It contains also a review of Kasda–Kontos' former essay 'Text mining and image anomaly explanation with machine consciousness'. Kontos created an artificial intelligence agent that can distinguish natural and unnatural face elements in an image through visual processing, and is also able to generate a logical explanation as to how it concludes if there is an anomaly. Taking for example 'Les Demoiselles d'Avignon' by Pablo Picasso with its conflicting perspective angles, the AI agent narrates: 'I found 1 eye with view from the front. I found 2 eyes with view from the front. I found nose with view from the side. Therefore: Anomaly found because the view of the nose is different from the view of the 2 eyes' (Kasda and Kontos, 2015: 79). Kontos argues for an explainable AI (XAI), which is an AI that is able to generate user-friendly answers on its 'internal' processes. XAI is thus stressed as a crucial development of AI in the increasing use of algorithmic assessment tools, in order to avoid the obscurity from which software systems suffer when they conclude to certain decisions and results.

"Introspection" is a central process studied by the work of Kasda–Kontos, which triggers their overall creative and scientific endeavor. Kontos' study on introspection in machines led him to coin the term 'autoendoscopic computer systems' as a definition for AI agency, in order to escape from anthropomorphic terms and to highlight how the operation of such systems differs from the operation of our cognitive functions. A machine that executes a series of so called intelligent or creative processes is analogous to our human mental processes, but it uses quite different internal mechanisms based on methods of AI.

Kasda's interpretation of the concept of introspection in the art theory, AI and consciousness discourse conveys a more subtle approach, paving the way for the leap to more ambiguous and introspective concepts. Kasda reframed chapters from *The Conscious Eye*, relating art theory to process-oriented, computational and cognitive concepts. However, she remarks that the structured contemporary epistemic discourse is an exhausted working model; beyond the palpable, gauged operations of mental paths and representations, there is a terra incognita of uncanny worlds that touch upon the other side of the coin: the absurd, inscrutable, complex elements of human and non-human experience. Kasda suggested that whatever escapes from the former working model of dealing with art knowledge and machine affection can be bound to a new research study.

One of Kasda's central references is Romanian philosopher Lucian Blagaz(1895-1961), who criticized the theories of science and developed a cosmology and philosophy of knowledge open to the concept of mystery. Blaga pointed out the integral limitations of contemporary scientific epistemology. Social and internal ecologies are entangled in a complex dynamic matrix where new knowledge emerges in a disruptive, controversial and cryptic way. Blaga

conceived this process as 'cognition-minus' (Botez, 1998), akin to Cornelius Kastoriadis' 'radical imagination' that suggests an ex nihilo creation of imaginary for any being in itself (including humans) (Hansen, 2009) and in Kasda's terms 'Something Essential Missing' (SEM) an abductive conception of the aforementioned process related to the unconscious.

Kasda anticipated that Kontos' drift to the arcane realm of art worlds will hopefully trigger the inception of a new collaborative project, related to the examination of uncharted areas of the unconscious. A future work on-the-make that encompasses myth at the center of its inquiry.

On myth and the human mind

[On the following chapter I will try to support the relevance of myth in the study of consciousness and how the study of myth is linked to a new understanding of the unconscious and its relation to AI, according to the conception of myth by Lucian Blaga.]

It could appear as odd that the object of myth study throughout the course of its research history is directed towards the human mind. According to Ernst Cassirer, one of the first thinkers who studied it systematically, myth is a principal thought modality (Verene, 1981). Myth functioned as a universal expository device, more so before the democratization of the scientific method, able to encode cognitive, aesthetic and affective states in a symbolic, narrative form. In other words, myth offered a mode of conceiving and assimilating knowledge, setting its own exo-scientific world-view half way between imagination and reality.

But can myth be considered fundamentally obsolete after the advent of science? Is the analysis of myth exhausted, and this way historicized in this sole function, to be a deficient, 'primitive', epistemological model prior to science?

In his thesis 'Work on Myth', Hans Blumenberg examined extensively myth and logical systems in their historical contexts. He supported that they didn't form successive 'superepochs' which entombed a minor human mentality and inaugurated a new one, presuming a kind of shift to a superior human consciousness. Blumenberg argued over a continuous and simultaneous existence of myth and logic, without one being identical to the other, but neither in competition with each other: 'They perform different, equally essential functions in dealing with man's fundamental problem' (Blumenberg, 1985: 16).

The theoretical discourse on myth was amplified through post-modernism, with critical questions like the following: what is myth to the contemporary context, is it still relevant and a significant force? What is the role of myth to culture formation and world perception in post-modernity?

Throughout the 20th century, Claude Lévi-Strauss was one of the thinkers who most persistently was concerned with myth. He aimed at developing a science of mythology, ultimately proposing a latent infrastructure in myth related to the field of consciousness studies. Lévi-Strauss tried to shed light on the

human mind as a synthesizing operator of conscious and unconscious processes (Rosi, 1973: 24). He did not question how humans use myths, but how myths operate in the human mind, pointing at an introspective state of mind. In this sense, myth is a thinking concept able to provide a solution; more specifically, the possible choices that were conceived by mythical imagination confronted humans 'with a table of solutions simultaneously given to collective thought' (Lévi-Strauss, 1984). Mythical space is thus not a singular, individuating ground of experience, but a transcendental realm of multiplicity and speculation.

Lévi-Strauss was not the first to connect myth to consciousness studies. Almost three decades ahead, in the 1930's, theorist and writer Lucian Blaga created a comprehensive speculative system that placed myth at the core of an extensive theoretical inquiry, which referred to a distinct theorization of mystery. He created a theory of knowledge and a theory of the unconscious mind, examining in particular the concept of transcendence through myth.

Lucian Blaga remarked the link between myth and dogma, and the potential for the manifestation of a new, collective mode of knowledge based on this affiliation. Blaga's conception of dogma and the dogmatic method encompassed a novel, subversive reading of it, detached from religious connotations. He envisaged dogma not as an invalidation of rational or logical knowledge (anti-logic), but as a meta-logic modality, because of the complex concepts it could integrate and perform, while still being intelligible and in spite of its resistance to verbalization and analysis. Blaga developed a theory of mythical systems and the human mind, which offered a surprising intellectual evolution in regard to how early he elaborated on concepts developed only later in the post-modern discourse. However, there is currently scarcely scholarly discourse to examine this relation; he argued among other over the boycott of history, autonomy in collectivity (Cotter, 2014) and the transfigured use of antinomies.

On myth and cognitive informatics

In respect to later scholarly research on the human mind, maybe the most pioneering contribution of Lucian Blaga is the development of the understanding of the unconscious. He proposed a conceptualization of the human unconscious as a complex dynamical system, in contrast to the popular in his times Freudian conception of the unconscious as an incoherent, chaotic structure. He argued over a stratified unconscious in primary and secondary categories, which could form an exponential multiplicity of relations when combined in different sets – which he called 'stylistic matrix' (Lovatt, 1999).

Blaga proposed an elaborated theory of mental functioning that can be reflected on the mental model of psychoanalyst Ignacio Matte Blanco in his seminal study 'The unconscious as infinite sets' (1975). Blanco argued for an operational, complex unconscious, yet outlining transitive relations and contingent variations among mental objects. His psychoanalytic approach of the unconscious opened up its study to cognitive and information sciences and recently to the interdisciplinary field of cognitive informatics (Tonti, 2015). In this

perspective, Blaga perceived an early conceptual model on the operation of human intelligence from a cultural point of view, in a direction that corroborated the development of speculative computational models of the unconscious, towards contemporary trials of artificial simulations.

Mythical thought

[Mythical thought is a core concept in Poly Kasda's research. Below is a brief attempt to outline mythical thought and introduce Kasda's long-term project Myth/Network, a pioneering contribution in the field of mythical consciousness.]

According to Matthew Clark 'Myths can be interpreted as the narrative manifestation of abstract codes, fundamental patterns of thought' (Clark, 2012: x).

If the scientific experiment is an exercise of finding what is true, myths have no claim to truth or 'true' states. Myths are manifested through multiple versions, where one version is no more correct than any other, with the idea stated by Claude Lévi-Strauss, that a myth consists of all its versions (Lévi-Strauss, 1984). Clark remarks: 'In the process of telling and retelling, the original author loses control of the story, as elements are added or changed or deleted. It is almost possible to say that a myth is a story that has escaped from its author' (Clark, 2012: 3). In this sense, mythical thought transcends the closure of individual meaning, referring to a more collective, participatory storytelling, one that reinforces anonymous improvisational re-creation.

Poly Kasda's Myth/Network project is a reticulation of intertwined subprojects (1990-2017), at the core of the exploration of mythical thought.⁶ Kasda refers to it as an experiential meta-logical intellectual structure that fleshes out Blaga's philosophical body of work through concepts as transcendental censorship (Moldoveanu, 2014), minus cognition, stylistic matrix and Mioritic space (Lovatt, 1999) among others. She considers her dialectic work a 'transfigured antinomy', a term of Blaga which deals with the clash of theories on the frontiers of scientific discovery, proposing a new way of thinking where opposite, antithetical notions co-exist supporting the paradox as a new, transversal rationality (Schrag, 2013). Through Myth/Network, Kasda aimed to push the interdisciplinary research of art theory and human – non-human consciousness further, by integrating myth and mythical thought as principal concepts in her work.

Myth/Network initiated in 1990 through implementing a deliberately reverse use of telematic, technological rhetoric. Kasda diffused in a global scale single biodegradable micro-models, 300 sites in 27 countries, creating a fragile, invisible and –soon to be– immaterial web. The project cited Eugen Bleuer's

⁶ The project was later documented at the National Museum of Contemporary Art in Athens, as a donation by Greek pioneer computer artist Pantelis Xagoraris. Archive material: Poly Kasda, Myth/Network, 1991, Athens: National Museum of Contemporary Art, Collection: Artist archives, Donation: Pantelis Xagoraris, Code 1595.

depth psychology theory, on mind as a topographical map of diverse psychic systems. Myth/Network can be argued to compose an ideography of the World Wide Web before its spreading, in terms of resembling a transient community memory enabled by a mythical space –analogous to a virtual one– that was connected with real spaces. It was more ‘immaterial’ than an actual wired or wireless network can be regarding its heavy infrastructure, without material vestiges. The effects of the work relied in the memories of the participants creating a kind of hyper-telematic space devoid of any digital technology.⁷

Kasda’s extensive art project Myth/Network started with a sudden revelatory experience that didn’t exactly link to an intentional artistic act, in the bottom of a dehydrated artificial lake; an uncanny experience affine to a liminal state of mind. The aforementioned liminal experience encompassed a distinct sensibility to rituals, a knowledge possession still relevant within a contemporary ceremonial economy. Through this process, the artist became aware of a jungle of latent processes beyond the object-based landscape. Her narrative is part of a knowledge discovery operation embedded in art systems, one that functions as a heuristic device for new knowledge to emerge. Within this faculty, mythical thought is extended towards the sacred.

Historian of religion Mircea Eliade argued about the often overlooked element in myths: ‘To try to grasp the essence of such a phenomenon by means of physiology, psychology, sociology, economics, linguistics, art or any other study is false; it misses the one unique and irreducible element in it – the element of the sacred’ (Eliade cited in Lawson et al. 1999).

In this respect, the study of mythical thought exemplifies a qualitative leap into less reassuring concepts as complexity, a type of experimental epistemology and mysticism. This approach can be paralleled with asda’s anti-historical maps which she identifies as ‘homunculus emotional cartographies’ that encourage a direct, affective contact with archetypes. Kasda’s research can be extended to the Integrated Information Theory (IIT) and the playful concept of “zombie” systems as presented in a recent thorough study on the mechanisms of consciousness (Oizumi et al., 2014).

EPILOGUE

Kasda and Kontos’ new research project is currently under development. It aspires to examine the intersection of myth and mythical thought, the unconscious and autoendoscopic systems. Kasda–Kontos will try to expand the creative ‘needles’ technique through edit-a-thons, under the new collocation ‘dialectic duel-ism’, a term coined by Kasda to describe the ever dueling nature

⁷ Myth/Network was documented in its early stages in a video documentary directed by Makis Faros and produced by EIKONA, Center of Research and Audiovisual applications, specialized in the production of audiovisual works on Art and New technologies, directed by Dodo and Manthos Santorineos. 1995.

between their personal discussions on AI and mythical thought.

REFERENCES

- Blumenberg, Hans (1985), *Work On Myth (Studies in Contemporary German Social Thought)*. MIT Press, 1985, p. 16.
- Botez, Angela (1998), 'Michael Polanyi and Lucian Blaga as Philosophers of Knowledge', Presentation at the Twentieth World Congress of Philosophy, Boston, Massachusetts, August 10-15. <https://www.bu.edu/wcp/Papers/Comp/CompBote.htm> Accessed September 1, 2017.
- Casdas, Poly (1986), 'Logo and the Cubist State of Mind', MIT Newsletter.
- Casdas, Poly (1987), 'Children teach computers' (Τα παιδιά διδάσκουν τα... κομπιούτερς), *Vradini tis Kyriakis*, Greek newspaper, Athens, p.26, March 13.
- Clark, Matthew (2012), *Exploring Greek Myth*, Chicester, UK: John Wiley & Sons, p. x.
- Cotter, Sean (2014), 'Lucian Blaga's Translations under Soviet Eyes', *Literary Translation and the Idea of a Minor Romania*, Boydell and Brewer, 2014, pp. 51-88. <http://www.jstor.org/stable/10.7722/j.ctt5vj8b5.6>.
- Hansen, Mark B. N. (2009), 'System-Environment Hybrids', in *Emergence and Embodiment: New Essays on Second-Order Systems Theory*, edited by Bruce Clarke – Mark Hansen, Durham: Duke University Press Books, p. 131.
- Kasda, Poly (1986), 'Adventures of the Eye' (Οι περιπέτειες του ματιού) (conception, research, texts), film documentary, directed by Marc Gastine (direction-scenario), TV show *Periskopio*, Athens, Hellenic Radio Television/ERT.
- Kasda, Poly (1988) *The Conscious Eye, Art – Perception – Informatics (Το συνειδητό μάτι, Τέχνη – Αντίληψη – Πληροφορική)*, Aigokeros.
- Kasda, Poly (1994), *Pyrisporos: Art – Science – Mythology (Πυρίσπορος: Τέχνη – Επιστήμη – Μυθολογία)*, Aigokeros.
- Kasda, PolyXene (2016), *When that word swallowed me. Allegoric biodiegesis: Puer Aeternus, the Axiom of Maria and the Riddle of the Sphinx*. Athens: Notios Anemos, p.9.
- Kontos, John and Kasda, Poly (2015), *Artificial Intelligence Professor John Kontos needles Poly Kasda's 'Conscious Eye': Perception, Consciousness, Diegesis, Discovery, Creativity*. Notios Anemos.
- Lawson, E. Thomas, and McCauley, Robert N. (1999), *Rethinking religion: connecting cognition and culture*, Cambridge [U.K.]: Cambridge University Press, p.13.
- Lévi-Strauss, Claude (1984), 'Mythical Thought and Social Life', Lecture at the University of California, Berkeley, September 26.
- Lovatt, Catherine (1999), 'The Mioritic Space – Romanian National Identity in the Work of Lucian Blaga', *Central Europe Review* 1:8. <http://www.ce-review.org/99/18/lovatt18.html> Accessed September 1, 2017.
- Moldoveanu, Daniela (2014), 'The Autonomy of Metaphor: Cognition and Method in Lucian Blaga's Philosophical Discourse', *Journal of Romanian Literary Studies* 1, 2014, pp. 306-311. DOI: 10.13140/2.1.1311.5844 Accessed September 1, 2017.
- Moutsopoulos, Thanasis (ed.) (2017), *The Space Era: Electric and electronic art in Greece [1957-1989] (Η Εποχή του Διαστήματος: Ηλεκτρική και ηλεκτρονική τέχνη στην Ελλάδα [1957-1989])*, Athens: Asini, 2017.

- Oizumi Masafumi, Albantakis Larissa, Tononi Giulio (2014), 'From the Phenomenology to the Mechanisms of Consciousness: Integrated Information Theory 3.0.', *PLoS Comput Biol* 10:5. <https://doi.org/10.1371/journal.pcbi.1003588> Accessed September 1, 2017.
- Pye, Clifton (2009), "Modality and Possible Worlds", Lecture for the course of Semantics, University of Kansas, Feb. 12. See <http://web.ku.edu/~pyersqr/Ling331/Kearns3.htm> and <http://web.ku.edu/~pyersqr/Ling331/> Accessed September 1, 2017.
- Rosi, Inno (1973), 'The Unconscious in the Anthropology of Claude Lévi-Strauss', *American Anthropologist* 75:1, 24. DOI:10.1525/aa.1973.75.1.02a00020
- Schrag, Calvin O. (2013), 'Philosophy at the end of the twentieth century with a note on Lucian Blaga', *Annals of the Academy of Romanian Scientists* 5:1-2, pp. 129-132.
- Tonti, Marco (2015), 'The operationalization of the unconscious: Models of subcognitive informatics', *International Journal of Cognitive Informatics and Natural Intelligence* 8. DOI: 10.4018/ijcini.2014100102
- Verene, Donald Phillip (ed.) (1981), *Symbol, Myth, and Culture: Essays and Lectures of Ernst Cassirer, 1935 - 1945*, Yale University Press.
- Ziku, Mariana (2016), 'The under-determination in Poly Kasda's work, speech at the Book Presentation 'Artificial Intelligence Professor John Kontos needles Poly Kasda's "Conscious Eye"', Stoa tou Vivliou, Athens, June 6. See: <https://lekseikones.wordpress.com/2016/07/26/the-under-determination-in-poly-kasdas-work/> Accessed September 1, 2017.
- Zweig, Ben (2015), 'Forgotten Genealogies: Brief Reflections on the History of Digital Art History', *International Journal for Digital Art History* 0:1, pp. 1-14. doi:<http://dx.doi.org/10.11588/dah.2015.1.21633> Accessed September 1, 2017.

ABOUT THE AUTHOR

Mariana Ziku is an art historian, curator and musician. She co-founded the cultural office MET artnet which develops projects related to culture, education and technology. She is the art curator in the Berlin-based network for contemporary silent short films and live music 'Moving Silence'. She has curated exhibitions at the Contemporary Art Center of Thessaloniki, at ARTos Foundation, Cyprus and Goethe-Institut Athen among the most recent and was the winner of the 1st Open Call for Interdisciplinary Projects and Applied Arts from The Art Foundation in Greece. She has worked for the European Capital of Culture 2021 in Greece as program curator in art and technology, as assistant curator at transmediale festival for art and digital culture with a DaVinci grant and with an internship on digital curation at the Egyptian Center for Culture and Arts in Cairo, Egypt. Her research interests include art theory, sound and curatorial studies, with a particular enthusiasm in cultural data curation and computation. She holds a classical piano musical degree, a BA in Fine Arts and Art Sciences and a MA in Art History/Theory and Curating from the University of Ioannina, Greece.

Email: [ziku \[at\] mail.com](mailto:ziku[at]mail.com)

JOHN THRASHER
The Ohio State University, USA

Technical and Aesthetic Approaches to Image Generation-Research and Application

ABSTRACT

Three artist-instructors draw on personal experiences, knowledge and an exploration of art to convey the esoteric nature of its role in our lives and work as a language. By isolating moments for reflection, discovery and reverie they reveal sublime realities. Individual imaginations, histories, and methods are notable attributes to consider when defining each artist's unique strategies.

KEYWORDS

Image capture, photography, digital manipulation, drawing, plastic arts

JEFF SPRANG

An image of a catastrophic fire in Mansfield, Ohio (Image 1) illustrates the skill with which photographer, Jeff Sprang captured an instant with a film camera in the late 1970's.

Photojournalism demands a sensitivity to circumstances and events. The randomness of choices and the ongoing narrative demand perceptual and technical poise. Mr. Sprang's professional skills have been applied to documentary and studio photography, as well as to teaching photography throughout its transition from film to digital formatting. Mr. Sprang has a thorough knowledge of film and darkroom photography, and is a master strobist and lighting technician. He has continued to embrace developments in digital and computerized approaches to image capture, yet maintains ties to tools that physically manipulate light and substance.

In many of his compositions, Mr. Sprang uses no digital after-editing, choosing instead to utilize in-studio lighting and camera positioning to create effects. Images may first appear to be digitally processed, when in fact Mr. Sprang forces that assumption onto the viewer by astutely positioning objects in their surroundings and illuminating tableau with carefully controlled lighting conditions. The combination of playful experimentation and technical execution allow him to continually reveal moments as art.



Image 1: Jeff Sprang, The Woodville School Fire, 1978. Silver halide print. 11"x 14". Photograph courtesy of Jeff Sprang.



Image 2: Jeff Sprang, Water Drop Collision set-up, 2016. Digital image. Size variable. Photograph courtesy of Jeff Sprang.

Re-examining Harold Edgerton's milk drop collision photographs compelled Mr. Sprang to explore the possibility of alternate angles. He has configured flash and Arduino interface sequencing that allows him to photograph the event from above (Image 2). In all likelihood, he is the first person to document this bird's-eye-view of the collision. The difficulty of revealing the birds-eye-view of the event is that the "eyedropper" blocks the center of the image field.

By programming the Arduino, Mr. Sprang was able to coordinate sequencing that robotically moved the eyedropper at the same time the shutter opened, clearing the image field, allowing an unprecedented view of the phenomena. The applied technology allows him to capture images of a single water drop collision from multiple angles.



Image 3: Jeff Sprang, Water Drop Collision (from above), 2016. Photograph courtesy of Jeff Sprang.



Image 4: Jeff Sprang, Water Drop Collision (four views), 2016. Photograph courtesy of Jeff Sprang.

KATE SHANNON

The photographic image is the cornerstone of Kate Shannon's art. She begins projects by creating or appropriating photographs. Then she meticulously eliminates, rearranges, or animates the tiny pixels that form these images using the computer. In this way, the photograph itself is not an end result but a foundation for further research, discovery, and invention.



Image 5: Kate Shannon, You Deserve More, 2012. Monitors with video animation. Image courtesy of Kate Shannon.

Ms. Shannon addresses consumerism with projects such as *You Deserve More*, (Image 5) a multimedia installation that involves high-definition screens, animated photographs, and slogans appropriated from well-known advertisements. The images are constructed with props using studio photography and lighting and layered video segments. By employing advertising strategies and agencies in the installation, she draws attention to the manner in which images and messages are used to create desire in the contemporary consumer.



Image 6: Kate Shannon, *Construction/ Destruction*, 2013. Monitor with video animation. Image courtesy of Kate Shannon.



Image 7: Kate Shannon, *The Insignificant*, 2014. Digital print on PVC sheathing, 16" x 20". Image courtesy of Kate Shannon.

Ms. Shannon also uses digital tools to examine physical photographs from the past, particularly those that relate to disaster or destruction. In *Construction/ Destruction*, (figure 6) she creates subtle animated digital scans of glass plate negatives created by Orville and Wilbur Wright that were damaged during the Great Dayton, Ohio Flood of 1913.

In the series *The Insignificant*, (Image 7) she calls attention to photographs that were physically marked as rejected for publication by the Farm Security Administration during the Great Depression. The series of images, collected from archives, were edited by U.S. Government designees as part of a collective effort to document life during this period of U.S. history. Ms. Shannon mounts images on plastic panels, cutting a physical hole where a void left by an editors' "hole punch" to the negative was placed.



Image 8: Kate Shannon, *From Within the Happy Crowd*, 2015. Digital C-print. Size variable. Image courtesy of Kate Shannon.

Ms. Shannon also uses the camera to capture human subjects in environments associated with consumption, celebration and reverie. Many photographs are taken at the annual Ohio State Fair in Columbus, the state's capitol. The annual event attracts large crowds because of the variety of thrill rides, agricultural and crafts displays, and its festival atmosphere.

Ms. Shannon places herself directly in the crowds of people, discreetly capturing subjects with her camera held at her waist. The perpetuating cycle of desire, consumption, fulfillment and transition to desire again is sublimely expressed in this ongoing series. She processes her captures using digital software to remove background information, isolating posture and expression in a background of flat white, revealing expressions of unfulfilled desire and uncertainty. With historical influences such as Robert Frank, Diane Arbus, and Garry Winogrand, these images fall into the tradition of social landscape photography but are rendered in a new way through the tactic of digital erasure.

JOHN THRASHER

Vision, imagination, and fabrication are integral components of art. My interest remains grounded in the plastic arts. I am compelled to continue to explore materials and methods in order to bring fresh, personal insights into my ceramics and drawing courses. Exploring these diverse tools and materials over a lifetime has provided insights into messages that only those media are suited to convey, and inspires me to look for ways to continually adapt them to new circumstances and content.

Earthen clay is an analogous sample of earth's crust in that its elemental constitution is primarily composed of the same oxides of silica, alumina, and iron, and in essentially the same percentages. Clay is a product of ongoing erosion and sedimentation. Using it to mimic geologic processes such as deformation and metamorphism, while selecting exotic oxides for glazes, seems appropriate to making an intimate, gestural representation of earth. It is one of the oldest forms of technology.



Image 9: John Thrasher, Bound to Separate, 2017. Glazed earthenware. 31" x 13" x 10". Image courtesy of John Thrasher



Image 10: John Thrasher, Myriad, 2014. Hand-altered digital print. 22" x 30". Image courtesy of John Thrasher.

Recent graphic works are constructed using scans of marks and patterns from my physical drawings, collected and documented over the course of my life. The images are processed with digital software to selectively isolate, transform and repurpose a personal, stylized visual language. They are further detailed with plastic media after printing.

Referencing a personal history of mark-making, gestures and images, layered compositional fields become an individualized, post-technical, graphic apocalypse. Humans encounter and willingly embrace an ever-hastening barrage of images and information. It is all so confusing. It is not going to slow down anytime soon.

Retroactive Withdrawal refers to an academic term, established by universities to allow students who quit attending a class after the deadline for dropping has passed, to be withdrawn from the course without it appearing on their academic record. I appropriated the term for a title, because extracting visual information from complete and incomplete drawings in order to repurpose and re-image, is a form of withdrawing marks and gestural choices with retroactive intent. Prints are retouched and "remarked" after output, bringing closure to an exploration of memory and physicality.

Rooted in traditional academic practices, and spoken in the language of the contemporary, the things I make synthesize craft, technology, perception, and

nature. The methods I employ as an artist provide experiences that extend into the disposition and content of the classes I teach, and the people with whom I interact.



Image 11: John Thrasher, Situation Requiring Wavering Attention, 2017. Hand-altered digital print. 22" x 30". Image courtesy of John Thrasher.



Image 12: John Thrasher, Retroactive Withdrawal, 2017. Hand-altered digital print. 22" x 30". Image courtesy of John Thrasher.

CONCLUSION

While each of these artists create distinctively different works, all three manipulate technology to encapsulate moments. All three bring their knowledge and experience to the students they teach, engaging curiosity, leveling constructive criticism, and encouraging an authentic, vibrant pursuit of creativity, work, and play.

ABOUT THE AUTHORS / ARTISTS

John Thrasher makes art work in a variety of media and expressive contexts. After completing undergraduate studies at the University of Kentucky in 1984, he worked for 5 years as a free-lance medical illustrator. He received a Master of Fine Art in Ceramics from The Ohio State University in 1992, and have taught foundation courses at The Ohio State University for 27 years.

Email: thrasher.1@osu.edu

Website: <http://www.johnthrasherfineart.com/>

Professor **Kate Shannon** completed undergraduate studies at the University of Kentucky in 2003, and earned a Master of Fine Art in Photography at The Ohio State University in 2007. She joined the faculty in the Department of Art at The Ohio State University in 2009. She teaches photography, expanded arts, and digital image manipulation.

Email: shannon.112@osu.edu

Website: <http://www.kateshannon.net/>

A native of the north central Ohio region, photography instructor **Jeff Sprang** graduated from The Ohio State University with a degree in photography and journalism in 1973. He opened a professional studio immediately after, and worked for 27 years as a newspaper photographer before he began teaching at the Ohio State University in 1996.

Email: sprang.16@osu.edu

Website: <https://www.facebook.com/Jeff-Sprang-Photography>

SOTIRIOS FOTIOU
Independent Researcher
ANTONIA PLEROU
Ionian University, Greece
PANAGIOTIS VLAMOS
Ionian University, Greece

Cognition Enhancement: Blending Persuasive Technology and Emerging Web-based Applications.

ABSTRACT

During the past decade, the mixture of persuasive technology and web-based applications was suggested as an efficient approach for cognition enhancement and rehabilitation. Several persuasive web-based systems have been developed in order to influence the attitudes or behaviors of users. This article reviews the current state of applications used for mental and health behavioral changes. Author's main objective is to assess the use of persuasive technology on cognitive training exercises and the importance of web-based games and applications in the case of cognitive decline rehabilitation.

KEYWORDS

persuasive technology, cognitive enhancement, dementia, web-based applications

INTRODUCTION

The term cognitive decline is a mental condition commonly met in patients suffering from neurodegenerative diseases (Kemp et al. 2012). Persuasive technology is initially involved within the field of the Human-Computer Interaction (HCI) and is related to human behavior conversion. Within the frame of persuasive technologies, several principles based in social psychology are applied. Medical specialists, like psychologists, neuropsychologists, speech therapists, psychiatrists, and other clinical rehabilitation professionals are involved with cognitive training techniques in order to enhance cognition after various neurological events (Jacko 2012). Numerous cognitive enhancement exercises combined with medication therapies are used in order to focus on self-esteem enhancement and problem-solving strategies improvement. Within

this approach, executive functioning abilities like memory, attention, perception, logical thinking, and learning ability etc., tend to be enhanced. Additional research findings suggest that self-awareness, self-confidence, and emotional stability are also improved (Choi & Twamley, 2013).

COGNITIVE ENHANCEMENT

Cognitive enhancement focuses on the z-solving. Deficits in cognitive function are related to several mental illnesses and neurological disorders. memory loss, dementia, MCI, attention deficit hyperactivity disorder (ADHD), autism, schizophrenia, and depression all have cognitive components, as does Alzheimer's, Parkinson's, Huntington's, and other neurodegenerative diseases (Choi & Twamley 2013). Cognitive decline and memory impairment are both linked with age-related changes in the brain and can indicate the onset of dementia. Cognitive enhancement is viewed as a strategy to rehab these diseases or to delay the aging effect on brain function (Reuter-Lorenz & Lustig 2005)

The term Mild cognitive impairment (MCI) describes a slight however noticeable decline in cognitive abilities, including memory and thinking skills (Brown et al. 2013). A person suffering from MCI presents an increased risk of developing Alzheimer's or another dementia (Anderson et al. 2012). Alzheimer's is a type of dementia related to troubles in memory and other mental abilities. It is caused by physical changes in the brain. Alzheimer's symptoms are mostly developed gradually and get more severe over time (Sperling et al. 2011). Alzheimer's disease is considered to be the most common type of dementia. Almost 44 million people worldwide are dealing with Alzheimer's or related dementia, according to the Alzheimer's Disease International (ADI) (Alzheimer's Association 2016). Nevertheless, the rehabilitation of Alzheimer's disease and other neurodegenerative disorders are considered to be a hard and expensive procedure. The cost for providing health care for Alzheimer's patients in the U.S. is estimated to be \$236 billion and rises due to additional costs of identifying, recruiting, and screening participants for clinical trials (Alzheimer's Association 2016).

Nootropics

Nootropics (also called smart drugs or cognitive enhancers) are drugs, supplements, or other substances that improve cognitive function, particularly executive functions like memory, creativity, or motivation, in healthy individuals (Lanni et al. 2008). Cognitive enhancers supply the brain with higher levels of neurotransmitters and stimulate important receptors. This is linked to certain basic mental functions optimization and higher scores of fluid intelligence (Moghaddam et al. 1997). The use of cognition-enhancing drugs by healthy individuals in the absence of a medical indication is one of the most debated topics among neuroscientists, psychiatrists, and physicians which spans a

number of issues, including the ethics and fairness of their use (Maslen et al. 2014). Non-pharmaceutical enhancement methods include strategies such as suitable nutrition, physical exercise and sleep and several interventions such as meditation, mnemonic techniques, brain stimulation and training with the use of digital tools (Marchegiani & Store, 2015).

PERSUASIVE TECHNOLOGIES

The term Rhetoric is defined as “The ability to see what is possibly persuasive in every given case” and was given by Aristotle 2500 years ago (Bryant 1953). Ethos, pathos, and logos are the rhetorical appeals defined by Aristotle as well, also referred to as the modes of persuasion (Rapp & Christof 2002). Persuasion implies an intended change of human behavior or attitude or both. In the case that a force (coercion) or misinformation (deception) are used, these would fall outside of the realm of persuasive mode and persuasive technology (Ijsselstein et al. 2006).

Persuasive technology is in general focused on dealing with human attitudes and behaviors with the use of social psychology principles. Therefore, persuasive technologies are used to alter people’s behavior in several aspects such as healthcare and education. Persuasive technology is an interdisciplinary research field, focusing on the design, development, and evaluation of interactive technologies aimed at changing users’ attitudes or behaviors through persuasion and social influence (van Gemert-Pijnen et al. 2011). Persuasive technology research focuses on interactive, computational technologies, including desktop computers, mobile devices, web-based applications, and video games within the frame of theories, and methods of experimental psychology, rhetoric, and human-computer interaction (Dominic et al. 2013).

Computer-assisted cognitive rehabilitation is a rather promising approach aiming to improve cognitive performance both in the case of healthy individuals and in patients suffering from dementia. Moreover, the use of computer-based exercises or serious videogames instead of traditional paper-based cognitive exercises is considered to enhance cognition in the case of patients suffering from Alzheimer Disease (Vichitvanichpong et al. 2014).

BRAIN COMPUTER INTERACTION AND NEUROFEEDBACK

Blending aspects of technology and neuroscience are considered to provide relatively efficient methods use for cognitive enhancement. Namely, neurofeedback and brain-computer interaction (BCI) are two methods based on real-time EEG signal retrieval in order to provide feedback to the participants. BCI is mainly used within the frame of healthcare and specifically for prevention, detection, diagnosis, and rehabilitation in the case of several diseases and learning difficulties. Brain-computer interfaces (BCIs) acquire brain signals, translate them into commands that are relayed to output devices that carry out

desired actions like controlling a computer cursor or turning on and off devices by thinking rather than moving a mouse or pressing a button (Naik & Guo 2014).

Neurofeedback is used for the direct training of brain function with the use of an EEG headset device, in order to improve brain function and is broadly related to learning difficulties, neurodegenerative diseases rehabilitation and stress management. Neurofeedback involves continuous analysis of EEG signals (or other physiological signals) in real-time and continuous feedback to the participant based on the results of the analysis (deBettencourt et al. 2015).

WEB-BASED APPLICATION AND COGNITIVE ENHANCEMENT

The use of persuasive technologies blending web-based application is a rather new trend in cognition enhancement. A significant number of web-based applications that were initially designed for entertainment use, can assist cognitively impaired people and enhance cognition. Namely, Lumosity, Big Brain Academy, and Smart Brain Games as well as Master Quiz-MINDs et al, are mainly involved in logical thinking and brain function enhancement (Boletsis 2016). More over several software programs like Brain train Captain's Log, Brain Fitness Program, Cogmed QM and Cognifit that focus on cognitive enhancement are also developed. Within this frame, several mind games Nintendo Big Brain, Rise of Nations, Medal of Honor, Tetris and Space Fortress could also be useful for the cognitive enhancement procedure (Gonzalez et al. 2008). The use of web-based application mixed with persuasive technology in terms of cognition enhancement is mainly based on personalized motivation. This is related with the ease of use due to the aesthetic user's graphical interface of theses web-based applications, the virtual rewards and users self-monitoring progress (Mun Yi et al. 2013).

Applications like Baby Think It Over (infant simulator conveys a realistic social presence to persuade teenagers to avoid becoming teen parents), Tamagotchi craze, Nintendo's Pocket Pikachu (interaction with virtual pets) or the Banana-Rama slot machine are used for user persuasion in several aspects (Fogg & J. 2002). In the field of health management, web-based applications like Fitness Applications (20% of Swedish internet users use a fitness application), Carrofit Nike, and alcohol or other smoking cessation applications are used for users persuasion (Lehto & Oinas-Kukkonen 2011).

DISCUSSION

Persuasive techniques are considered to be a powerful tool in terms of altering and adjusting the pattern of mental interaction based on actions of persuasion. Persuasive technology and web-based intervention principles are effectively combined to improve mental health, even though these web-based applications were initially developed for entertainment purposes. Although web-based

interventions for promoting health and health-related behavior can be effective, potential ethical limitations of this cognitive enhancement approach need to be addressed.

REFERENCES

- Alzheimer's Association, 2016. 2016 Alzheimer's disease facts and figures. *Alzheimer's & Dementia*, 12(4), pp.459–509.
- Anderson, N.D., Murphy, K.J. & Troyer, A.K., 2012. *Living with mild cognitive impairment: a guide to maximizing brain health and reducing risk of dementia*, Oxford University Press.
- Boletsis, K., 2016. Augmented Reality Serious Gaming for Cognitive Health. 198.
- Brown, B.M., Peiffer, J.J. & Martins, R.N., 2013. Multiple effects of physical activity on molecular and cognitive signs of brain aging: can exercise slow neurodegeneration and delay Alzheimer's disease? *Molecular Psychiatry*, 18(8), pp.864–874.
- Bryant, D.C., 1953. Rhetoric: Its functions and its scope. *Quarterly Journal of Speech*, 39(4), pp.401–424.
- Choi, J. & Twamley, E.W., 2013. Cognitive rehabilitation therapies for Alzheimer's disease: a review of methods to improve treatment engagement and self-efficacy. *Neuropsychology review*, 23(1), pp.48–62.
- deBettencourt, M.T. et al., 2015. Closed-loop training of attention with real-time brain imaging. *Nature neuroscience*, 18(3), pp.470–5.
- Dominic, D. et al., 2013. Promoting Physical Activity through Persuasive Technology. *International Journal of Inventive Engineering and Sciences*, (21), pp.2319–9598.
- Fogg, B.J. & J., B., 2002. Persuasive technology. *Ubiquity*, 2002(December), p.2.
- van Gemert-Pijnen, J.E.W.C. et al., 2011. A holistic framework to improve the uptake and impact of eHealth technologies. *Journal of medical Internet research*, 13(4), p.e111.
- Gonzalez, M.F. et al., 2008. HERMES – Cognitive Care and Guidance for Active Aging D.6.1 Cognitive Training Exercises.
- Ijsselstein, W. et al., 2006. Persuasive Technology for Human Well-Being: Setting the Scene. *LNCS*, 3962, pp.1–5.
- Jacko, J.A., 2012. *Human-Computer Interaction Handbook: Fundamentals, Evolving Technologies, and Emerging Applications.*, CRC Press.
- Kemp, J. et al., 2012. Theory of Mind in normal ageing and neurodegenerative pathologies. *Ageing Research Reviews*, 11(2), pp.199–219.
- Lanni, C. et al., 2008. Cognition enhancers between treating and doping the mind. *Pharmacological Research*, 57(3), pp.196–213.

- Lehto, T. & Oinas-Kukkonen, H., 2011. Persuasive features in web-based alcohol and smoking interventions: a systematic review of the literature. *Journal of medical Internet research*, 13(3), p.e46.
- Marchegiani, J. & Store, H.L., 2015. Brain-gut connection, is your brain causing you GI problems?–Podcast# 65.
- Maslen, H., Faulmüller, N. & Savulescu, J., 2014. Pharmacological cognitive enhancement-how neuroscientific research could advance ethical debate. *Frontiers in systems neuroscience*, 8, p.107.
- Moghaddam, B. et al., 1997. Activation of Glutamatergic Neurotransmission by Ketamine: A Novel Step in the Pathway from NMDA Receptor Blockade to Dopaminergic and Cognitive Disruptions Associated with the Prefrontal Cortex. *Journal of Neuroscience*, 17(8).
- Mun Yi, R., Sharath, S. & Sung-Hee, P., 2013. *AIS transactions on human-computer interaction.*, Association for Information Systems.
- Naik, G.R. & Guo, Y., 2014. *Emerging theory and practice in neuroprosthetics*, Rapp, C. & Christof, 2002. Aristotle's Rhetoric. *Stanford Encyclopedia of Philosophy*.
- Reuter-Lorenz, P.A. & Lustig, C., 2005. Brain aging: reorganizing discoveries about the aging mind. *Current Opinion in Neurobiology*, 15(2), pp.245–251.
- Sperling, R.A. et al., 2011. Toward defining the preclinical stages of Alzheimer's disease: Recommendations from the National Institute on Aging-Alzheimer's Association workgroups on diagnostic guidelines for Alzheimer's disease. *Alzheimer's & Dementia*, 7(3), pp.280–292.
- Vichitvanichphong, S. et al., 2014. Assistive Technologies for Aged Care: Supportive or Empowering? *Australasian Journal of Information Systems*, 18(3).

ABOUT THE AUTHORS

Sotiris Fotiou holds a BSc in Electrical and Electronic Engineering, an MSc in Communications and Signal Processing and an MSC in Engineering Management. He is a Ph.D. candidate in the Department of Informatics of the Ionian University in Corfu and Bioinformatics and Human Electrophysiology Laboratory (BiheLab - Ionian University) member. He has (co) authored 4 articles in international conferences and journals. His research interests are mainly related to the fields of e-Health, Collaborative Learning; Mobile applications for health; Team-based learning; Electronic Medical Records; Assistive technology; Mobility; Persuasive Technology; Neurodegenerative Diseases

Email : fotiousotirios@yahoo.gr

Antonia Plerou, Ph.D., is currently teaching at M.Sc. Program “Bioinformatics and Neuroinformatics” of the Department of Informatics of the Ionian University and also advises post graduate thesis of the same program. She is a member

of the Laboratory of Bioinformatics and Human Electrophysiology (BiheLab) of the Ionian University with the field of expertise “Pattern recognition analyst for Neuroeducational studies”. She holds a Ph.D. degree from the Department of Informatics of the Ionian University in Corfu, she studied Applied Mathematics at the Faculty of Sciences in the Aristotle University of Thessaloniki and obtained her Master Degree in Mathematics from the Faculty of Sciences and Technology of the Greek Open University. She has (co) authored more than 25 articles in international conferences and journals and 2 book chapters. She is an editorial board member for several journals and she has been a program committee in numerous international conferences as well. Her research focuses on the fields of Educational Neuroscience, Cognitive Science and Learning Difficulties (Dyscalculia, Algorithmic Thinking Difficulties), Neurofeedback Training, Neuronal Disorders rehabilitation with Neuroinformatics, and Artificial Intelligence.

Email tplerou@ionio.gr

Website: <https://ionio.academia.edu/AntoniaPlerou>

Dr. **Panayiotis Vlamos** is a Professor and Head of the Department of Informatics at the Ionian University. He received his Diploma in Mathematics from the University of Athens and his Ph.D. degree in Mathematics from the National Technical University of Athens, Greece. He is the director of “Bioinformatics and Human Electrophysiology Lab” and of “Computational Modeling Lab” at the Department of Informatics, Ionian University. He has (co-) authored more than 130 papers in international journals, conferences and book chapters. He is also (co-) author of more than 16 educational books and creator of several educational materials. He has been the principal researcher or a member of several research projects on Mathematical Modeling and Simulation.

Email: vlamos@ionio.gr

ANDRÉ SIER
Planetary Collegium, University of Plymouth, UK

Structs for an Aspatial Quantum-Now

ABSTRACT

Human structure, in the now of the space-time fabric, has been a millennial subject of metaphysical constructs which try to account its full latitude, scope and mechanics. Concepts like *Actual* and *Virtual*, *Time-Crystal*, *Immanence Plane* (Deleuze), *Gaia* (Lovelock), *Aleph* (Borges), *Dharma* (Buddhism), seemingly attempt to look closely, feed-back and expose the perception mechanism on top of which the lowest levels of reality are perceived, also akin to the structure of the universe and life itself, at its tiniest and largest scales. Through the use of rules on programmed computers, which will be exposed and compared to metaphysical concepts, it is possible to create devices which set afoot first-steps towards practical experimentation and tangibility of such consciousness-spaces. Developed since 2000, the 11 works in the *Struct* series of audiovisual interactive installations, by sampling the now and raycasting traces from the past into the present, create aesthetic compositions and experience-spaces that pierce through the artistic realm into an experience-space which exposes an aspatial quantum-now.

KEYWORDS

Aspatiality, Interactive Electronic Arts, Synesthesia, Space-Time, Struct, Consciousness-Spaces, Quantum-Now

INTRODUCTION

Struct (Sier 2000-) is a series of interactive artworks I have been developing since 2000. One of my first purely computational audiovisual work series and among the first real-time interactive installations. These artworks seek to paint and sculpt in interactive media the human perception mechanism, on top of which the lowest levels of reality are perceived. They provide continual audiovisual synesthetic composition-spaces performed only on sampled site-specific visual and auditory data which is orchestrated by programmed generative or visitor manipulated algorithms. The works are aimed at creating experience-spaces where the observers can dialogue and immerse with themselves and/or previous user fragment sampled debris. Through these installations, users

can see dynamic paintings, sculptures, experience-spaces inspired in the way by which we apprehend exterior reality through senses. Self-referentiality reverberation chambers, the works amplify a nothingness that lingers and persists on any space experienced over time by an observer, and use that substrate as compositional means to orchestrate an ever new experience to any visitor.

The title of the series derives from two main uses of the word *Struct* in relation to these art works. On the one hand it is a diminutive of structure, being that which lays the foundations on top of which phenomena are experienced, like the structure of the human perception mechanics, usually referring to an invisible inner shell that allows shape's or certain form's existence, or the apprehension of certain phenomena within a sense domain. On the other hand, *struct* is a C programming language keyword that defines a compound data type made from previously defined types made aware to the compiler. It's a programming concept which forms a bridge towards OOP (Object Oriented Programming) to facilitate a higher-level programming language. It binds distinct variables from possibly different data types under one symbol in this newly formed data type aggregated from previously defined ones towards easing meaningful data storage and processing within the program, while escalating complexity (Kernighan and Ritchie 1978). It mainly serves to group and fly data around the program through functions and memory registers in a higher level which can harbor increasingly complex algorithms. The struct programming definition also touches the core of what synesthetic phenomena are like: one can aggregate under one struct the mechanics by which to transform sound into image, or any other sense data transcription and combination, like synesthetes often expose rules of how they see certain shapes or colors when hearing certain sounds, among many other examples of synesthesia.



Image 1: *Je t'aime...* (1998). Microphone, amplifier, modified woofer, water, light, mirror.

The *Struct* series was born out of necessity to deepen previous preliminary artistic work which real-time shifted the sound of a space to another, and synesthetically used the sound to vibrate water enclosed on a woofer, generating

real-time sound generated water based forms. The water surface patterns on the sound woofer were transformed and amplified into synthesized light that undulated according to the patterns of the frequencies emitted in the woofer, using light projection on the water surface and reflecting it side by side with the woofer by using a mirror. This early work formed the base path of research and investigation of the series *Struct*.

With a background in musical and visual arts, sciences and philosophy studies, delving deep into computation and programming at the time, it seemed obvious to me to expand, deepen and refine this experiences by adding algorithmical processes. Not just by using real-time synesthetic transcriptions, but to expand this process and develop a signal processing language that could operate only on sampled real-time captured fragments on the computer. The aim of this *Struct* language would be to synthesize any sounds, timbre, dynamics, visual flows by using only real-time found and sampled fragments of aural and visual data the users would provide the devices. Using feedback and other time-based signal processing operations on the site-specific aural and visual data, it came to my mind that the computer could be orchestrating perpetual arrangements at shifting speeds of distinct and previously sampled audio moments, and that this could be an original means by which to synthesize any kind of sound and or visuals. On the other hand, the computer could also help to automate and create generative emergent algorithms to control the synesthetic processes, by fading in and out lights according to the real-time sound levels, by synthesizing audio and motion reactive seamless virtual visual limitless spaces. To expose an infinitude of orchestrations, like machines weaving processes on the residual data that emerges from the void of the contact of people with the works themselves. A full synthesis language that uses solely sampled aural and visual fragments, and re-injects these previous fragments processed into the now. The resulting sonic and imagetive output the pieces generate, triggered by sounds or movements performed in the experience-space by the visitors, are then re-casted onto the mechanism, re-transformed into input samples, caused by natural feedback of sampling machines that broadcast continually, sampling the exterior and themselves.

Already after having developed the earlier two *Structs*, I became acquainted with similar art works which have influenced this series path. John Cage's 4'33" (1952), Nam June Paik's TV Buddha (1974), Bruce Nauman's Live-Taped Video Corridor (1970), Johann Sebastian Bach's Fugues (1722-1742¹), among others, have been key works which resonate with the themes I was deepening in the *Struct* series. All these works share a common main theme. Recursion, self-reference, evolving unique synthetic languages based on small samples

¹ The time interval refers to the publication dates of the two books that comprise The Well-Tempered Klavier that round preludes and fugues written by Bach in all possible 24 major and minor keys. The first book was completed in 1722 and second book twenty years later in 1742.

from reality, fractal regions, whereas small temporal or spatial regions share main characteristics of the whole or larger regions, at different zoom scales, in a hors-temps and hors-espace domain. While the first three mentioned works focus on showing the open, or provide simple real-time transcriptions of visual data embedded into different images, Bach's fugues showcase remarkable counterpoint techniques where a simple melodic composition line becomes fractal and is combined with itself at different pitches, speeds, layered from single melodic lines to 2, 3, 4, 5, 6 simultaneous voices orchestrating melodic counterpoint variations of a main musical theme. Such is the case of the *Musical Offering* (Bach 1747). In this work Bach composes one of the most elaborated and complex fugal compositions, sometimes with 6 distinct voices, from a harsh themed melodic line provided by king of Prussia Frederic the Great. As Douglas Hofstadter (1999:9-10) accounts for: "A fugue is like a canon, in that it is usually based on one theme which gets played in different voices and different keys, and occasionally at different speeds or upside down or backwards.[...] Each of the voices enters in turn, singing the theme, often to the accompaniment of the countersubject in some other voice, with the remaining voices doing whatever fanciful things entered the composer's mind. When all the voices have "arrived", then there are no rules. [...] These successive modulations lead the ear to increasingly remote provinces of tonality, so that after several of them one would expect to be hopelessly far away from the starting key. And yet, magically, after exactly six such modulations, the original key of C minor has been restored! All the voices are exactly one octave higher they were at the beginning, and here the piece may be broken off in a musically agreeable way".

This could also be looked at by another and more contemporary perspective. In any signal processing system, a self-reference process usually involves the feedback equation, where a percentage of the output/processed signal is added at the beginning of the system towards further processing, cascading and percolating a systemic loop, generating a themed phrase from rules applied to a short input signal which reverberates across the system. The percentage amount usually correlates to the feedback factor of the system. But mathematicians have shown us that these self-referenced recursive structures can also exist beyond the feedback process. Fractal systems, for instance, possess similar spatial and time qualities of feedback or fugal processes. Chaotic attractors and cellular automata also underline an emergent mathematical process which gives rise to complex patterns often found in nature (Gleick 1994). These algorithms expose a general form enclosed and self-referenced within the overall shape, shaped by a functor processing wave on the signal itself. A form that gets repeated, transcaled, pitch-shifted along side and at every scale of the mathematical system. As Hofstadter remarks on *Godel, Escher and Bach* (1999:10), this recurrence and fugal structure is the basis process of emergence of consciousness, of Strange Loops: The "Strange Loop" phenomenon occurs whenever, by moving upwards (or downwards) through the levels of some hierarchical system, we unexpectedly find ourselves right back where we started.

Aspatiality and quantum-now

Extensive space lays the foundational core for the existence of experiences and beings we as humans experiment. We experience no other kind of space. We are always embedded in a glade, even if it is an empty white box, it is still extensive and has standard departure spatial characteristics which frame any event or thing. It's next to impossible to conceive of void space. Yet molecular space, or cosmic space, or mathematical space, any kind of space which exceeds our natural apprehension mechanism is overlooked by our abilities to perceive it. And to add to this, physical rules differ in very tiny or very large spaces. For example, gravity, time, space, experienced on the surface of the earth at a human scale are largely distinct from the same concepts at a cosmic or even molecular levels. Also related, how would we add tangibility and extensiveness to imaginary spaces? In the context of this research, these could be twofold: imaginary spaces built by the human mind, i.e., the omni-present virtual plane in the actuality of the human (Deleuze 1968), or the complex plane in mathematics, made by a conjugation of real and imaginary numbers to form a special imaginary plane quite helpful to solve everyday physical problems (Struik 1989).

There are also other possibilities of spaces. For instance non-places (Augé 1995): "an ever increasing proportion of our lives is spent in supermarkets, airports and hotels, on motorways or in front of TVs, computers and cash machines"... Non-places however are distinct from no-places, or *aspace*s, to follow the proposed term of aspatiality which relate to the spatial characteristics of the *Struct* series (Sier 2000-). Non-places do share a common characteristic to aspatiality which is a common irrelevant physical extensiveness that serves as basis to be elsewhere, an effective transport space which allows immersion in a more appealing virtual, endowed by the substract. However they can be distinct in the sense that aspatiality points to a zeroth extensive space – no space – yet capable of seeding and engendering any and all spaces – the possibility of space, of any space, in zeroth extension, capable of hosting the full actual and virtual bodies. In this *aspace* any distinct and unique configuration of matter elements can be aggregated into extensive shapes that come into existence from a void. Aspatiality tends to an actual zeroth extensive space, though never fully reached, tendentiously free of referent and resilient actual images, as wide open as possible to any virtual concrete spatial configuration, an extensive near nothing which houses the infinitude. It is a concept inspired by Jorge Luis Borges' *Aleph* (Borges 1998:646):

On the back part of the step, toward the right, I saw a small iridescent sphere of almost unbearable brilliance. At first I thought it was revolving; then I realised that this movement was an illusion created by the dizzying world it bounded. The Aleph's diameter was probably little more than an inch, but all space was there, actual and undiminished. Each thing (a mirror's face, let us say) was infinite things, since I distinctly saw it from every angle of the universe. I saw the teeming sea; I saw daybreak and nightfall; I saw the multitudes of

America; I saw a silvery cobweb in the center of a black pyramid; I saw a splintered labyrinth (it was London); I saw, close up, unending eyes watching themselves in me as in a mirror; I saw all the mirrors on earth and none of them reflected me; [...] I saw the Aleph from every point and angle, and in the Aleph I saw the earth and in the earth the Aleph and in the Aleph the earth; I saw my own face and my own bowels; I saw your face; and I felt dizzy and wept, for my eyes had seen that secret and conjectured object whose name is common to all men but which no man has looked upon — the unimaginable universe.

Similarly to space, time is a fundamental category by which phenomena are experienced. But the time of entangled loops on hierarchical systems, the time of the substract of the human mechanics of apprehension, the time of pre-conscious human flows where sense data turmoils and gladiates for consciousness control has peculiar characteristics when observed, if possible to observe, at a granular microscopic level. This time which houses numerous systemic directions, flows, overwhelming forces and intentions of humans in a pre-conscious state is similar to a space that can harbor infinitude of spaces. In its essence, it is similar to what Deleuze calls Crystal-Image (1983) when theorizing about cinema and moving images: “a representation of the splitting of time, the movement of past and present reflected through these images. Deleuze states that cinema does not just present images, it surrounds them with a world”. Like any individual frame holds invisible links to all the past frames, as well as all subjectivity evoked by what is and what is not shown on the images. A crystal through which the stratified layers and points of view gain shattered and fractal visibility.

Looking this close on time, there are inevitable links to the quantum physics world. In quantum mechanics, the analogue of Newton’s laws, which are sufficient in describing natural systems at human scales, is the Schrödinger equation for a quantum system. This is the world of atoms, molecules, and subatomic particles whether free, or bound in aggregates. And the Schrödinger equation attempts to describe it precisely. It is not a simple algebraic equation, but in general a linear partial differential equation, describing the time-evolution of the system’s wave function (Schrödinger 1926). Quantum-now might be a derivative of the time instant that is flowing, tendentially a zeroth derivative, like performed earlier for the spatial domain. Here, the sampled instant, according to the sampling device’s precision, contains within the actuality of the event the full or partial spectrum of possibilities attached to it, much like a Deleuzian crystal-image.

There are also unequivocal similarities to the structure of how a fugue is edified and performed, departing from a motif, cascading voices which sample and rework the theme, layering them in the now to orchestrate a certain mode of being, or a fleeting feeling, a musical idea. Or how we humans read books, grasping ideas, following words in linear fashion to understand a meaning. But in its essence, the reading act, at a subliminal near instant level, is a non-linear sequential fractal reading, where one jumps across, cuts, blends, mixes,

reverberates, hears two or more voices at different speeds. This is related to how the virtual is always driving and shaping the actual on the human, and no objective exterior experience can be obtained without the mark of the observer's machine sampling it.

This elusive structure, in the aspatiality and quantum-now of the void, when reflected through a void, besides unveiling an apparently infinity of possibilities, overwhelmingly sculpts the perceptive machine of the one that observes and lives and interferes within the field. Like Xenakis' ontology of an immaculate synthesis (1992:24): "In a universe of nothingness. A brief train of waves, so brief that its beginning and end coincide (negative time) disengaging itself endlessly. Nothingness resorbs, creates. It engenders being".

Structs

The pieces that compromise the *Struct* series attempt to discourse about this infinitude out of nothingness, in the auditory and visual domain, installed in a space at human scale of experience. When immersed in the aural and visual experience of the piece's space, users travel elsewhere, only to find themselves later traveling within a painting of their own perception of space and time, embedded in a continual composition engendered by the programmed rules, the machine's decisions, the exterior sampled events. The spaces and events the pieces facilitate pierce the space they are installed at to showcase a recursive space-time continuum built as a simile of our own perceptive apparatus.

Interactive art installations that provide the means to develop machine-observers, other than human entities, which endlessly compute and blindly execute algorithms running on machinal substrates. The *Structs* sample the now and raycast traces from the past into the present, whether in the audio or visual domain, creating these experience-spaces that pierce through the artistic realm into an experience-space which exposes an aspatial quantum-now.

The works build self-referentiality reverberation chambers which amplify a nothingness that lingers and persists on any space experienced over time by an observer, and use that substrate as compositional means to orchestrate an ever new experience to any visitor.

Struct_0 (2001), *Struct_1* (2001), *Struct_2* (2002), *Struct_3* (2004) are audiovisual programs that share a similar audio processing engine. Eight buffered voices alternate in sampling the aural site-specific space when the captured sound levels exceed a certain threshold. The buffers are played back with stochastic shifting speeds and sound levels. They also operate as base sounds for an autonomous granular synthesis engine that punctuates the sonic composition. Delays with feedback are also used on the direct samples or the processed ones. While on *Struct_0* these sonic processes are autonomous and stochastic, *Struct_1* and *Struct_2* offer a control panel to the users to allow real-time composition of such audio processes. All generated sound is analyzed and used as synesthetic control parameter for the image synthesis. On *Struct_0* the

visual elements are composed by a lines particle system which is highly organic in movement to the sonic variations; on *Struct_1* and *Struct_2* a parametrized segmented rectfield capable of being tinted with current and previously sampled images is the central base shape for the multitude of screens that occupy the graphics viewport. In the *Struct_3* program, besides the buffered microphones aural composition there is a synthetic section that applies the same stochastic engine to an FFT (fast fourier transform) numerical analysis of Pergolesis' *Stabat Mater* (1736). And the resulting composition is spatialized to a quadriphonic audio setup according to several mathematical movement equations of displacement.



Image 2: *Struct_0* at *Apertura 1.0: seis proyectos digitales en el MEIAC*, Sevilla, 2001.

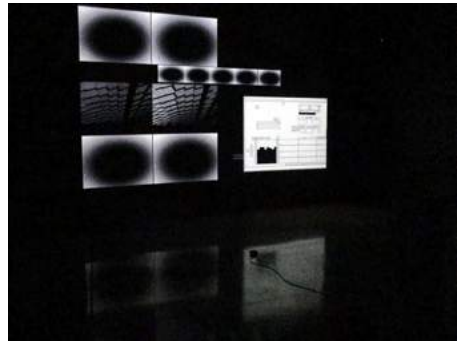


Image 3: *Struct_1* at *META.morfosis / MEIAC*, Badajoz, 2006.

Struct_0 is an audio-visual site-specific installation/composition. It is an informatic application that seeks to visually expose the subjective aural tissue of a space under the shape of particle systems synthesis in “audible” sinthony with the composed sound. Audio-visual site-specific painting. (Sier 2001)

Struct_1 is an audiovisual app that explores the concepts of time and space-, time in the 3 possible tenses (what was, what is, what will be) and a spatial metaphor of the consciousness as a segmented rectfield capable of being tinted with quicktime movies, stills. Visually, and audially it is a sort of a polyphonic time sampler that percolates the audio input stream into 8 buffered voices, colliding all of them into the present at shifting speeds. The final audio energy values tint structure modifications. The image engine seldomly captures frames from the user visual navigation feeding the data into the past module image buffer. Something like life... (Sier 2002)

Struct_2@Pavilhão 21C is the result of the collaboration between a resident at Hospital Júlio de Matos (a state psychiatric institution) and my *Struct* systems applied in a real-time site-specific context. Its goal: to explore intimate notions of space and time in a collaborative fashion through the minds that heal silently, exhausted of western society, through invisible technology. (Sier 2003)

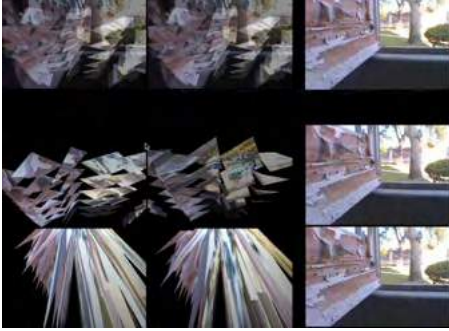


Image 4: Struct_2 screenshot.

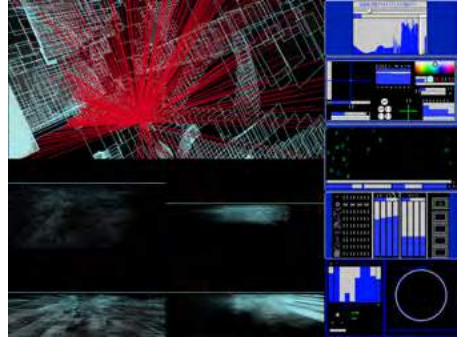


Image 5: Struct_3 screenshot.

Struct_3 generative audio-visual multi-temporal/spatial explorer. The spirit is profuse and encounters regions where it diffracts through the space, percolates the temporal instants, flies over in many ways the same reality. The mind of Heraclitus meets Dante stratified over Benjamin's abstract places. Struct_3 is the ubiquitous moment, ancient, of lousing / finding the self ([id]) passage from solid to gaseous, where the temporal tissue unravels like infinite, percolating, liquid-made, abstract, all is open. (Sier 2004).

Struct_4 and Struct_5 (2006) return to the visual synesthetic transcription of sound being broadcasted on modified woofers with liquids illuminated with lights, with similar stochastic audio engine operating on 4 and 3 channels of audio respectively. Struct_5 is the first struct installation to apply visual movement in front of the piece as control mechanism for the whole audiovisual composition.



Image 6: Struct_4 at *XIII Biennale for Young Artists from Europe and Mediterranean*, Bari, 2008.



Image 7: Struct_5 at *Artescapes, Universitat Politècnica de València*, València, 2007.

Struct_4 is an audio-visual device that flows together sound moments gathered in four different microphones attached to four modified woofers with liquid producing patterns that are amplified through lights and mirrors.

Struct_5 is an interactive device that captures and interferes with the sound and visual motion that occurs in a site-specific space. The installation creates an image of movement of the space into a forest of video planes that sculpt three dimensional space. The data gathered from the movement controls the broadcast of sounds being sampled real-time from the microphones.

Struct_6 (2007) is the first purely visual with no sonic output mechanical installation which reverberates the same ideas from the struct series, using a simple arduino micro-controller to orchestrate movements on the camera. Struct_7 (2007), Struct_8 (2008), Struct_9 (2011), Struct_10 (2015) are struct pieces that make again use of the computer and only cameras and visual output as means to engender experience-installation-spaces which resorb around the nothingness they depart from.



Image 8: Struct_6 at *Objecto: Simulacro*, Pavilhão 28 Hospital Júlio de Matos, Lisboa, 2007.



Image 9: Struct_7 at *Stream*, White Box, New York, 2007.

Struct_6 is a vibrating feedback machine suspended in elastics, with a camera aimed at two televisions and two mirrors. Two motors induce vibrations in breeding like patterns.

Struct_7 is a camera based immersion in visual environment. Abstracting the space of the flow of a river, where the viewer interacts with time debris of previous viewers scattered in 3d flowing space.

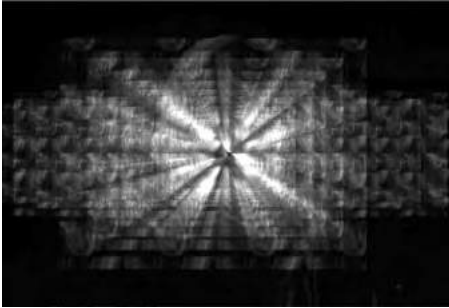


Image 10: Struct_8 screenshot.



Image 11: Struct_9 at *unniivveerssee.net*, Museum of São Roque, Lisboa, 2011.

Struct_8 is an audio visual camera based immersion. 3 parallel time-based processes are interactive to movements.

Struct_9 is a camera based immersion in visual environment. Abstracting the space of a wall, where the viewer interacts with time debris of previous viewers scattered in 3d flowing space.

11th piece of the struct series, using only site-specific inputs, composing with now and past moments, playing with space and time constructs.

Struct_10 is an interactive camera based immersion in 3d visual environment where the viewer interacts with the generative motion mechanics and is recorded along side with time debris of previous viewers scattered in 3d flowing ever changing space.



Image 12: Struct_10 at Radiotelescópio, Zaratan, Lisboa, 2015.

CONCLUSION

These *Structs* are machines sampling aural and visual elements taking place in an enclosed limited domain, seldomly populated by viewers. Viewers observe and interact with the work, but the works' content is simply made from sampled visitor's sensitive fragments in reality, their visual appearance and performed movements towards cameras, the sounds they emit in the space captured by microphones, the feedback they receive from the pieces' algorithms playing with their inputs.

Coding and installing practical mechanisms which deepen and paint the ideas related to how and why the human perceptive apparatus may work are a flourishing theme and blooming art science field, with some rare examples throughout art history. They can serve as tools to deepen consciousness-spaces and provide simple playful mechanisms to unconsciously self-reference the observer. One can also look at the healing psychological potential of such spaces as a future line of work in caring for more fragile minds.

They are works dealing with perception mechanisms, where the quality of apprehension of phenomena and the observer machine that apprehends it is the theme of the work, as opposed to subjective fully exterior phenomena being the main theme. But this intensive look on the observation disregarding the observed can only be achieved through phenomena, pointed at itself, tendentially without other stratification or contribution of alien elements.

By building dynamic systems where self-reference and tangled hierarchies are the subject, one gets closer to a sympathetic reverberation with the perceptive and intelligent systems of the observer himself, without the necessity to introduce additional exterior content. Even so, formal rules and self-reference allow systems to acquire meaning despite being made of meaningless elements.

In the midst of the quiet or the cacophony of the current composition offered by the running programs, the works can thus pierce identitarian limits within the observers while opening glades of infinitude before their selves. They may find echoes and fugal like structures sympathetic to their actions, where their own movements become central motifs in the score of the pieces. An experience-space pointed towards an aspatial quantum-now.

REFERENCES

- Augé, M. (1995), *Non-places: introduction to an anthropology of supermodernity*, London: Verso.
- Bach, J. S. (1747), *Musical Offering*, [composition], Potsdam: Sanssouci.
- Borges, J. L. (1998), *Obras Completas de Jorge Luis Borges 1923-1949*, Lisboa: Editorial Teorema.
- Cage, J. (1952), *4'33"*, [composition], New York: Woodstock.
- Deleuze, G. (1968), *Différence et Répétition*, Paris: Presse Universitaires de France.

- Deleuze, G. (1983), *Cinéma 1. L'Image-Mouvement*, Paris: Les Éditions de Minuit.
- Esparcia, A., Urbano, P. (Eds.) (2007), *ArtEscapes: Variations of Life in the Media Arts*, catalogue of exhibition at Universitat Politècnica de València, 11th April - 18th May 2007, Valencia: Editorial de la UPV.
- Gleick, J.(1994), *Caos: A construção de uma nova Ciência*, Lisboa: Gradiva.
- Hofstadter, D. (1999), *Godel Escher Bach - an eternal golden braid*, New York: Basic Books.
- Kernighan, B. W., Ritchie, D. M. (1978), *The C Programming Language*, Englewood Cliffs, NJ: Prentice Hall.
- Nauman, B. (1970), *Live-Taped Video Corridor*, [video installation], Los Angeles: Nicholas Wilder Gallery.
- Paik, N. J. (1974), *TV Buddha*, [video installation], New York: Galleria Bonino.
- Pinto, A. C. (2001), "MEIAC_GV 1.0 - transição e tecnofania", in *Arte português Contemporâneo/Argumentos de Futuro. Colección MEIAC, Museo Extremeño y Iberoamericano de Arte Contemporáneo*, Badajoz: MEIAC.
- Ponciroli, V., Guidetti, L. (Eds.) (2008), *XIII Biennial of Young Artists from Europe and the Mediterranean – Puglia 2008*, Milan: Electa.
- Schrödinger, E. (1926), "An Undulatory Theory of the Mechanics of Atoms and Molecules", in *Physical Review* 28 (6): 1049–1070.
- Serres, M. (1997), *As Origens da Geometria*, Lisboa: Terramar.
- Sier, A. (2000-), *Struct series*, [interactive installations], <http://andre-sier.com/struct>. Accessed 1 May 2017.
- Sier, A. (2001), *Struct_0 user manual*, <http://andre-sier.com/struct/struct-0/>. Accessed 1 May 2017.
- Sier, A. (2002), *Struct_1 user manual*, <http://andre-sier.com/struct/struct-1/>. Accessed 1 May 2017.
- Sier, A. (2003), *Struct_2 user manual*, <http://andre-sier.com/struct/struct-2/>. Accessed 1 May 2017.
- Sier, A. (2004), *Struct_3 user manual*, <http://andre-sier.com/struct/struct-3/>. Accessed 1 May 2017.
- Struik, D. J. (1989), *História concisa das matemáticas*, Lisboa: Gradiva.
- Xenakis, I. (1992), *Formalized Music: thought and mathematics in composition*, Hillsdale NY: Pendragon Press.

ABOUT THE AUTHOR

André Sier is an artistic engineer with training in sciences and arts, and a degree in philosophy. Working since 1997 at s373.net/x studios, exhibits and performs works worldwide, with more than 25 solo exhibitions and over 80 participations at collective shows, festivals and artistic events. Sier works with code, 3D, video, sound, electronics, drawing, sculpture, videogames. Through algorithmical structures and custom human interfaces, he creates objects and serial interactive work which playfully seeks to unravel time and space

relations, as well as to propose a seamless infinite virtual imaginary cosmogony synthesized on electronic substrates which could rival reality. Awarded at Jovens Criadores (2006), Bienal de Cerveira (2009), three times at Lisbon MakerFaire (2014,15,16), Sier underlines the series 'Struct', '747', 'space race', 'k.', 'uunniivveerrssee', 'piantadelmondo' and 'wolfanddotcom'. Regular teacher of electronic interactive arts since 2002, invited assistant professor of digital arts at Universidade de Évora, he is currently doctoral student at Planetary Collegium.

Email: alpha@s373.net

Websites: <http://andre-sier.com>, <http://s373.net/x>

ANDREAS GIANNAKOULOPOULOS

Ionian University, Greece

LAIDA LIMNIATI

University of Helsinki, Finland

DALILA HONORATO

Ionian University, Greece

Portrayal of Biohackers in news and technological websites

ABSTRACT

During the few latest years, the term “biohacker” is at the forefront. As the word implies, a biohacker is a life scientist who combines biology and technology, along with the hacking ethos of open data and open source software. This paper tries to investigate how biohackers are presented in popular technological and news websites. For this purpose we used discourse analysis to examine how four websites covered three specific biohackers and their achievements. Namely, the biohackers in question are Gabriel Licina, Neil Harbisson and Tom Cannon. The chosen websites are “The Independent” and “Daily Mail” from the news websites and “CNET” and “Gizmodo” from the technological websites. The questions this papers tries to answer are the following questions: “How biohackers are represented in technology and news websites?” “Is the representation different between these two different kinds of websites”?

KEYWORDS

Biohackers, DIYBio, Biopunk, Cyborgs

INTRODUCTION

Over the course of the last few years, a new movement starts spreading in a worldwide level. It is the movement of biohacking or the do it yourself biology or DIYBio, which is taking advantage of the advances in science and is giving way to what is being referred to as open science or the democratization of science. Sanchez (2014) tries to analyze DIYBio as social movement. Delfanti (2013;112) also perceives DIYBio as one of the manifestations of biohacking, a combination of academic norms and the hackers’ ethics. He sees it as a way of how open – source code software and hacking practices are entering the field of “cells, genes, and labs”. Landrain et al (2013) believe that the worldwide

spread of DIY biology has the potential to alter and to give access to information and laboratory equipment. This, in turn, can give birth to new practices and collaborations between amateurs and professionals.

By hitting in a search engine terms such as “biohackers” or “Do It Yourself Biology” someone will come across people having implanted chips on them or people who are injecting themselves with enzymes. Delfanti (2013;1) -who is one of the few scholars that until now have made extensive research to the biohacking movement- refers to biohackers as life scientists who are coming to add to the conventional science ethics components derived from hacking and open-source software (or freeware).

It is worth noting that although there is a strong association between biohackers and cyborgs, it seems that biohackers on the internet are divided in two categories. On the one hand there are those biohackers who focus on self-hack—a notion that reminds us of self-help- promoting natural ways of living or how to make the best out of yourself. These hackers do not interfere to their body in any artificial way and they actually seem to be the majority on the biohackers websites. On the other hand there are these biohackers who are in favor of interfering with their bodies either by making use of drugs (nootropic drugs) or by using the help of technology.

The first category might be confused with the so-called self-help websites that already exist on the internet for years now. These websites are having as their main goal to help people with their life, giving them ideas on how to become more successful, how to lead a healthy life, how to become more confident etc. These biohackers are called lifehackers and their ultimate goal is to enhance themselves (Waxler, 2017). The second category a lot of times is related to the DIYbio. In the majority of times it has to do with the use of nootropics, and sometimes it has to do with experiments. For instance, Delfanti (2013) describes a team that was trying to extract DNA from strawberries “with a buffer solution made out of dish soap”. In his words, this was a very simple application of biology which was not dangerous at all.

But there are also other kinds of biohackers who choose a more intrusive approach, such as Neil Harbisson, who has implanted an antenna in his skull and he is said to be the first cyborg that has been recognized as such by a government or people who are implanting chips on their bodies and using illegal drugs in order to enhance themselves or become superhuman. Out of these two categories, the one that will occupy our research is the more intrusive category since it is also related to the ethics of open science and to the DIYBio.

METHODOLOGY

This paper follows a discourse analysis approach in order to shed light on the biohacking movement. Discourse analysis was chosen since different texts even if they are referring to the same events, are different in the discourses

upon which they draw (Fairclough, 2013;127). The methodology is divided in two parts. The first one had as a goal to investigate how biohackers' present themselves.

The second part of the methodology had to do with the biohackers' portrayal at specific websites. Since biohackers are managing to make the news quite a few times, it was essential to limit our research. For this reason we decided to limit our sample to specific biohackers. The biohackers that were chosen based on their popularity and the impact they had on the biohacking community: Gabriel Licina, Neil Harbisson and Tom Cannon. Another reason for choosing these specific cases were that by the time this study took places, these three were included in most of the media outlets, hence it was easier to study their depiction. Of course, no mentioning in a medium means something itself, but we decided to focus on the actual depiction than the lack of it.

Gabriel Licina is famous because he managed to achieve night vision by injecting Chlorin e6 into his eyes. Neil Harbisson has been coined as the first android recognized by a government and has implanted an antenna in his skull which helps him to hear colors since he was born with achromatopsia. Tim Cannon managed to implant a chip at the size of a deck of cards in his arm. The chip transfers information such as his temperature to his android device.

Since biohacking includes the use of technology, we chose to see how a technological website presents each biohacker in contrast to a popular culture website. Once again, the choice of the websites was based in their popularity. "CNET" and "Gizmodo" from the technological websites and "The Independent" and "Daily Mail" as popular cultures websites.

RESULTS

From the first analysis of the biohackers websites two things are evident. The first is that according to them everything is possible and the second is the attempt to make science accessible to everyone. Delfanti mentions a lot of factors why access to scientific data is not permitted. These reasons are either financial or political. But what he does not make any extensive mentioning is the ethical reasons. Of course, every person is responsible for himself but experimenting with drugs or technology on your own self and urging others to do the same thing might not be ideal.

The second analysis of the technological and news websites showed the following: Starting from the case of Gabriel Licina "The Independent" has a more positive attitude towards his experiment while "The Daily Mail" is more skeptical. Not only does the latter uses wording such as "so-called biohackers" but also uses phrases from the paper along with experts' opinions in order to warn about the potential risks a procedure like that might entail.

Someone might think that the technology related websites were more positive towards Gabriel Licina's case but actually it was the opposite. "Gizmodo"

kept a sceptic approach by choosing to use words such as “weird”, “odd” and “sketchy”. In a similar way to “Daily Mail” it tried to explain the science behind it, but also warn the people about the potential dangers, quoting Licina himself. It also, in a way, doubted the results mentioning the placebo effect and the lack of the pre-examination of the test subjects. CNET on the other hand was skeptical by the procedure but in general tried to be neutral.

Interestingly enough, two out of the four websites (one of each category) started the piece of news by mentioning some kind of popular culture science fiction piece. Moreover, three out of the four websites chose to use a real image of Gabriel Licina while “The Independent” used a generic image of an eye. This might just imply lack on an image though and maybe it should not be taken into account.

In the case of Neil Harbisson, both “The Independent” and “Daily Mail” follow a neutral approach, explaining his situation in-depth. From the technology websites, “Gizmodo” had covered the case of Neil Harbisson few months earlier, focusing though on his rights as a cyborg rather than his antenna. At the same time CNET is also more positive towards Neil Harbisson than Gabriel Licina at least in these particular instances.

The case of Tim Cannon, although it gained popularity, it was not featured in all media outlets. The “Independent” just mentioned him in an article regarding another biohacker who implanted a chip under his skin in a similar way. Nonetheless, in the only sentence there is a reference to him, he is referred as “self-styled biohacker”. The “Daily Mail” though makes an extensive reference to Tim Cannon’s implant and except from the wording “would-be hackers” is having a neutral attitudes towards this experiment.

CNET tried to be neutral but it has a skeptical tone, which is evident in a few instances. For example, it mentions that “not surprisingly” the kit for the experiment does not have any approval and also implicates on the dangers such as a potential battery leakage or even a hacking of the device. At the same time, Gizmodo also faces this procedure with skepticism as well using wording such as “mad” and questioning the reasoning behind it.

From the above we can see that the media’s attitude towards biohacking is either neutral or it is faced with skepticism. From the observation it seems that the word “biohacker” is not established but usually the media outlets prefer to use wording such as “the so-called biohackers” or “the self-styled biohackers” or “describes himself as a biohacker”.

In a lot of articles there is a parallelization with the cyborgs. Interestingly enough, there were articles that biohackers referred also as hackers. In some cases the term “open source” was mentioned and the word “DIY” was also present. But the term DIYBio was not mentioned. From our first analysis though, it is observed that this term is usually present when the biohacking movement in general is explained.

Moreover, from this study it seems that there is a trend that the technological websites are more worried on biohackers than the popular culture media. Although “Daily Mail” gives an in-depth analysis comparing to “The Independent”, it does not always seem to be against the movement. For instance, in the case of Tom Cannon the article mentions more details regarding the kit and the cost of implanting it on someone’s skin.

On the other hand, with the exception of Neil Harbisson, the technological websites are more cautious and sometimes they can even be ironic. Although the sample was small in order to generalize, there might be the case that if something is easier to be performed, they feel the need to warn about its risks. For instance, for someone at home it might be easier to try to achieve night vision than implant an antenna on their head. The same goes for chip implants.

CONCLUSION

In this paper we tried to qualitatively examine how biohackers are presenting themselves in their websites and how they are portrayed in technological and news websites. Although limited, we came to some interesting conclusions. Biohackers believe that there is no limit to what a human can do and some of them are also calling other to imitate them and perform the same experiments even if they do not have knowledge. It should be noted that this is not always the case, but it was evident and hence noteworthy.

Believing that everything is possible is motivating and to some extent it cannot be dangerous. But, a science that is accessible to everyone raises an ethical question as to whether it is acceptable for people with no knowledge to have access to science and to voluntarily try drugs on themselves or to try to change their DNA at home with DIY kits..

Another question that derives from the above observations is the expertise. As in the technology (eg.hardware, software) hacking community not everyone can be a hacker. He needs an expertise. The expert is not needed to hold an official license and it can be acquired by self-teaching but it is needed. In this aspect, DIYBiologists and consequently biohackers need an expertise. It is worth mentioning that in the examined articles a lot of times the article were making an appeal to someone’s expertise or the lack of it. For instance, they mention that Gabriel Licina had already performed some research in the university and at the same time they focus on the fact that Steve Haworth, the tattoo artist who performed Tim Cannon’s implantation is not a certified doctor.

As already mentioned, this research is limited and it cannot lead to generalizations. However, it can operate as a premise for further, more extensive and comprehensive study regarding biohackers and their representation in the web.

REFERENCES

- Delfanti, A. (2013). Biohackers. The politics of open science.
- Fairclough, N. (2003). Analysing discourse: Textual analysis for social research. Psychology Press.
- Landrain, T.E., Meyer, M., Perez, A.M., & Sussan, R. (2013). Do-it-yourself biology: challenges and promises for an open science and technology movement. *Systems and Synthetic Biology*, 7, 115-126.
- Sanchez, G. A. (2014). *We Are Biohackers: Exploring the Collective Identity of the DIYbio Movement*.
- Wexler, A. (2017). The social context of “do-it-yourself” brain stimulation: neurohackers, biohackers, and lifehackers. *Frontiers in human neuroscience*, 11, 224.

ABOUT THE AUTHORS

Andreas Giannakouloupoulos is an Assistant Professor at the Department of Audio and Visual Arts of the Ionian University, where he teaches courses related to Internet Communication, New Media and the Web Technologies. He holds a BA (Ptychio) in Economics from the National and Kapodistrian University of Athens (UoA), a BA (Ptychio) in Communication and Media Studies from UoA, a Master of Arts in Communication and Media Studies from UoA, and a Master of Science in Logic from the University of Amsterdam. His doctoral dissertation, approved by the University of Athens, was in the field of web accessibility. The main field of his academic activities is Computer Mediated Communication and especially the web development technologies. His research interests focus on information architecture, web-based media, content management platforms and e-learning systems as means of effective communication via the web

Laida Limniati is working as a journalist in the fields of technology and self-driving cars. She has also worked as a Marketing Executive and Communications Specialist. She holds a BA (Bachelor) in Communication and Media Studies from the National and Kapodistrian University of Athens (UoA), a MA (Master) in Communication and Media Studies from UoA with Major in Digital Media and Interactive Environments, a Master of Arts in Quality Journalism and New Technologies from Danube University Krems and a Master of Arts in Social Sciences (Major in Media and Global Communication) from the University of Helsinki. She loves Japanese culture and Japanese manga and anime in particular. Her interests also include: new technologies, internet, storytelling, transmedia storytelling, and social media.

Dalila Honorato, Ph.D, is a facilitator of safe spaces for hosting the interaction of ideas around liminal issues in the frame of Art&Sci. Her research focus is on embodiment, monstrosity, the uncanny and the acrobatic balance between

phobia and paraphilia. She is Assistant Professor in Media Aesthetics and Semiotics at the Ionian University, Greece, guest faculty at Alma Mater Europaea, Slovenia, collaborator at the Center of Philosophy of Sciences, University of Lisbon, Portugal and member of the Steering Committee of the conference "Taboo-Transgression-Transcendence in Art & Science".

Film Fear

YORGOS DROSOS
Ionian University, Greece

Zombies and The Death of Mainstream Media: An Analysis of George A Romero's Diary of The Dead

ABSTRACT

George A. Romero's cinematic output during the 20th century and his zombie trilogy in particular has long been acknowledged and analyzed in depth. It is not only his contribution to the revival of the zombie genre and the horror film in general that has been the source of admiration but also his use of horror as a vehicle for social and political criticism. This article, however, is focused on his second zombie trilogy, shot during the 21st century, and on *Diary of the Dead* in particular. *Diary of the Dead* tells the tale of a zombie outbreak, as seen through footage by a film student, Jason Creed, who is determined to record the crisis as it unfolds, and therefore never lets go of the camera. Based on his beloved theme of zombies, Romero touches on a variety of other important subjects, such as the rise of the internet and new media, the ability that blogs and other social media offer both for social commentary, activism and for self-organization and, finally, the emergence of a new public sphere. This article sets out to bring out how these issues are depicted, as well as presenting a short history of the use of the techniques of found footage and P.O.V. (Point-of-View) shots in feature films.

KEYWORDS

George A. Romero, Jurgen Habermas, Public Sphere, Cinema, Zombie, Horror, New Media

INTRODUCTION

One of the prevailing themes in zombie-based fiction is the struggle that the living undergo in order not to lose their humanity. This concerns not only the fight to keep zombies at bay, but also their toil to maintain a civilized, ethical, non-anthropophagic manner of interaction with each other, while struggling for survival in a post-apocalyptic, zombie-flooded world. In short, the living must fight to remain human, in body, in mind and in spirit.

George A. Romero has occupied himself with narrating such struggles since his very first feature film, the famed *The Night of The Living Dead* (Romero,

1968). Apart from the graphic depiction of the zombies themselves and the violence that they instigate, this film is admirable for its sharp political and social commentary. The Night of the Living Dead's popularity is so widely appreciated because of how Romero depicts the interaction between the seven main (living) characters, not only in the wake of the zombie attack, but also given their different racial, social and political backgrounds. Moreover, this interaction is crucial to the story itself. Romero's two next zombie films, *Dawn of the Dead* (Romero, 1978) and *Day of The Dead* (Romero, 1985) are equally appreciated, not only for the elements of horror, action and humour, but also for their critique of western-type societies.

Yet, the same amount of appreciation is rarely bestowed upon the rest of George A. Romero's work, his other zombie films included. In total, Romero has made 15 feature films under his own name, plus a double feature in collaboration with Dario Argento. These include one more zombie trilogy, shot during the first decade of the 21st century: *Land of The Dead* (Romero, 2005), *Diary of The Dead* (Romero, 2007) and *Survival of The Dead* (Romero, 2009). The latter, though not lacking in entertainment, does not feature the same sociopolitical concerns as the rest of his zombie films –except, perhaps, on a more allegorical, vague level. On the other hand, I would say that *Land of The Dead* (Romero, 2005) is astonishingly, if not intentionally, precise in its depiction of today's political, social and economic situation, given the recent developments around the world.

This article, though, will focus on the second film out of this new zombie trilogy: *Diary of the Dead* (Romero, 2007). Of course, this film also involves the outbreak of a zombie epidemic and how a group of people struggle to survive it. The difference here is the way that this outbreak is narrated and how this specific way is crucial to the story itself but also to the continuation of Romero's conscious effort to shed light, through the zombie genre, on significant social issues of his time.

The basis of the film's narration is footage shot by Jason (Jay) Creed (played by Joshua Close), a film student who finds himself in the middle of a zombie outbreak, just as he is making a horror film about a mummy that has risen from the grave. Though he does follow his cast and crew –who happen to include his girlfriend and his best friends- on a road trip, so as to avoid the zombie attack, Jay is intent on never letting go of his camera, wishing to record the whole experience as it unfolds. This means that he does not take part in the action, in the struggle to beat off zombies, to win, to survive. In doing so, he eventually loses his very life. The whole story is then told to us, by his girlfriend, Deb (portrayed by Michelle Morgan). Deb, a film student herself, has edited all of Jay's footage together with videos from mainstream media, other vloggers, amateur camerapersons and even security cameras. She also provides the voice-over narration. The resulting film-within-a-film is entitled 'The Death of Death'.

This kind of narration, which is based on the techniques of found footage and subjective or P.O.V. shots, could be seen as a comment on millennials' addiction to their gadgets (in this case, a camcorder). By never letting go of the video camera, Jay's existence, his very essence becomes intertwined with it. He does not want to be, he wants to *record*. In short, he loses his humanity. Through the loss of his humanity, he ends up losing his life. This is one possible reading of the film in question. But *Diary of the Dead* (Romero, 2007), in my opinion, has another side to it. Above all, the film contemplates the emergence, in recent years, of a new, different kind of public sphere.

ON FOUND FOOTAGE AND P.O.V. (POINT-OF-VIEW) SHOTS: A BRIEF PRESENTATION

Before I elaborate on this last sentence, I will attempt a short –and, perhaps, incomplete- presentation of the history of these two techniques (found footage and P.O.V. shots) and certain aesthetic, theoretical and semiotic aspects pertaining to them.

P.O.V. or subjective shots make for an interesting part of film theory and practice. Since we are in the context of horror films, it would be worth mentioning that one of the most groundbreaking uses of this technique was in Rouben Mamoulian's version of *Dr. Jekyll and Mr. Hyde* (Mamoulian, 1931). The first shots of this particular film consist of Dr. Jekyll playing Bach on the organ, in his house. The keyboard and his hands are shown to us in the way that he would see them. Leaving his house, he heads to the university, speaking to the people he meets along the way (and who address the camera directly). As Gilles Menegaldo comments: 'The shots following the opening scene also stress the public (and popular) figure of Jekyll. The choice of a sequence shot, with a subjective point of view, is quite daring. Jekyll expresses his thought-provoking ideas concerning the possible partition of the soul through his provocative address to students and colleagues at the university amphitheatre. What is emphasized is thus a public appearance which is also dramatized by the sudden change of the camera position and the low-angle shots on Jekyll, while we are identified with the diegetic spectators forming the audience' (Menegaldo 2017: 195).

Two years before Mamoulian's feature, Dziga Vertov shot what could be viewed as the quintessential P.O.V. film, *The Man with the Movie Camera* (Dziga Vertov, 1929). Therein, the camera supposedly captures/narrates what is the undisputable truth. In the opening credits we are informed: 'This film is an experiment in cinematic communication of real events, without the help of a story, without the help of theatre, without the help of literature. This cinematic work aims at creating a truly international language of cinema based on its absolute separation from the language of theatre and literature' (Dziga Vertov, 1929). It should also be noted that the film intentionally features absolutely no intertitles whatsoever, so as to stress its exclusive reliance on cinematic means

of expression. Are we to believe then that what we are watching is not made up of Dziga Vertov's subjective shots but rather of the camera's (the Camera's) strictly objective shots? Of course, as Michael Zryd puts it, 'Rarely does an image "speak for itself", although it is often rhetorically framed to suggest that it can' (Zryd 2003: 47).

The famed film noir *Lady In The Lake* (Montgomery, 1947) is made up almost entirely of P.O.V. shots. At a time when steadicams had yet to be invented and hand-held cameras were not always reliable, telling the tale of the *Lady in the Lake* (Montgomery, 1947) ended in a technical and artistic feat. Throughout the 105' film, there are very few technical flaws. But what's more interesting is this: after the opening credits, Robert Montgomery –the film's director, narrator and leading actor- appears on the screen, sat at his desk, addressing the audience –or, as the expression goes, breaking the fourth wall. He mentions the story of the *Lady in the lake* that has been running in the papers and urges the audience not to believe the reporters, as there is only one person that knows 'the whole truth' about the case in question: himself. After this short introductory scene -and with the exception of a few more similar ones that serve as commentary to the plot- the rest of the film unfolds through a series of P.O.V. shots – that is to say, through the eyes of Philip Marlowe. After breaking the fourth wall, Montgomery/ Marlowe goes on *to become the fourth wall*, identifying his gaze with ours – or as another interpretation would have it, depriving us of any other viewpoint but his own. Either way, the truth, the undisputable truth, is supposed to coincide with what the camera shows us. During the climax, in which Lt. DeGarmot and his love interest/accomplice Mildred Havelend face each other off, Marlowe, is very much limited to watching, not acting (even though he does try, by way of arguments, not actions, to dissuade DeGarmot from killing Havelend).

When the case is finally solved, we return to Marlowe's office. He is on camera again, not behind it, once more breaking the fourth wall. He has finished telling the story and is subsequently joined by Adrienne Fromsett, his love interest in the film. Marlowe informs us that he is leaving for New York, with Adrienne, to pursue a writing career, much like Marlowe's creator, famed detective-turned-author Raymond Chandler had done. He is no longer simply observing the action and commenting on it; he is starting to act, *to live*. We, the viewers, are still left behind the camera, helpless, condemned to watch, while others, in front of the camera, do the living.

Before the *Lady in The Lake* (Montgomery, 1947) and after it, P.O.V. shots have been an integral part of storytelling in the context of audiovisual fiction but few feature films have been made up entirely of such shots, quite in the same way as the *Lady in The Lake* (Montgomery, 1947) was. In a similar vein, though, there is the tradition of the found footage films. Zryd defines found footage as 'a specific subgenre of experimental (or avant-garde) cinema that integrates previously shot film material into new productions' (Zryd 2003: 41). Found footage films were initially made up of exactly that, material found in mainstream media, already existent feature films, home videos etc. Yet, at least

since 1980, found footage has also taken a different meaning, with directors making films that are only supposedly made up of such material but are in fact fictional. Again, horror cinema has been pioneering at this reinvention of the found footage genre, with films like *Cannibal Holocaust* (Deodato, 1980) and *The Blair Witch Project* (Myrick and Sanchez, 1999). I would say that the use of “found footage” in horror films is a way to achieve the illusion of “authenticity” both in terms of settings and in terms of emotions/thrills.

DIARY OF THE DEAD AND THE NEW PUBLIC SPHERE

To return to *Diary of the Dead* (Romero, 2007), a movie that has yet to achieve the fame or notoriety of the two I just mentioned, I would argue that it is mainly a found footage horror film, but one that has supposedly been shot by an aspiring auteur, and, in fact, one who is not satisfied with the way that the crisis around him is depicted on other media. Jay knows that he is in danger of perishing at any given moment. Therefore, he is determined to record the zombie outbreak from his own standpoint, which he perceives to be closer to the truth. He is certain the mainstream media will present the whole story in a very constructed, manipulated, fake way. Just prior to his demise he says: ‘Who wants to survive in a world like this? All that’s left is to record what’s happening for whoever remains when it’s over’ (Romero, 2007).

His determination means that he does not take part in the struggle for survival itself nor in the human relationships that unfold between the living, in front of his camera lens. Early on in the film, he is chided for this by Deb: ‘If it didn’t happen on the camera, then it didn’t happen’ (Romero, 2007), she tells him. A few moments later, she is even more scornful. When Jay asks ‘Who was screaming?’, Deb’s reply is ‘Me. Want me to show you how? For the camera? For History?’ (Romero, 2007).

Yet, as I mentioned above, Jay’s addiction to shooting footage is not addiction for its own sake: at moments of rest, he edits the material and uploads it on the web. He comments that the viewers are ‘not getting the truth from anyone else’ (meaning the mainstream media) (Romero, 2007) and that his videos can teach other people around the world how to survive the zombie attacks, very much like he and his friends do. On another occasion we watch a Japanese vlogger providing similar information and advice.

Back in 1964, Habermas spoke of how ‘a public body of organized private individuals would take the place of the now-defunct public body of private individuals who relate individually to each other’ (Habermas 1974: 49). He also called for ‘a rationalization of power through the medium of public discussion among private individuals’ (Habermas 1974: 49). He is however optimistic in that this rationalization could in fact come to be ‘as a rational reorganization of social and political power under the mutual control of rival organizations committed to the public sphere in their internal structure as well as in their relations with the state and each other’ (Habermas 1974: 49). Deb puts it more simply, in

her voice-over narration: 'The mainstream had vanished, with all its power and money. Now it was just us. Bloggers, hackers, kids' (Romero, 2007).

In fact, even though the film's protagonist and auteur is supposed to be Jay, Deb is in fact the lead, in more ways than one. Not only does she take much more initiative throughout the story than Jay or the rest of their friends, but she is also the one who provides the voice-over narration and commentary to the events. Above all, she is the one who ends up editing all of Jay's footage along with material from mainstream media, security cameras and other vloggers. This is her version of the story.

If 'found footage filmmaking is a metahistorical form of commenting on the cultural discourses and narrative patterns behind history' (Zryd 2003: 42) then it is Deb, not Jay, who does the commenting. From the mass of Jay's work, Deb has collected these images that she thought best served her aims. Zryd also opines: 'Whether picking through the detritus of the mass mediascape or refinding (through image processing and optical printing) the new in the familiar, the found footage artist critically investigates the history behind the image, discursively embedded within its history of production, circulation, and consumption' (Zryd 2003: 42). In this case, the title of the found footage artist can only be awarded to Deb.

Diary of the Dead came out in 2007. Two years earlier, YouTube was founded. One year earlier than that, Facebook had gone online. In January 2000, American Adam Kontras made the first blog in the form of a video, i.e. a vlog. Blogs themselves have been around since the 1990's. It is remarkable how quick George A. Romero caught on to the power of these new media and made *Diary of the Dead*.

Is this then a new public sphere that *Diary of The Dead* speaks of? Habermas' definition of the term is as follows: 'By "the public sphere" we mean first of all a realm of our social life in which something approaching public opinion can be formed. Access is guaranteed to all citizens. A portion of the public sphere comes into being in every conversation in which private individuals assemble to form a public body' (Habermas 1974: 55). Habermas goes on to comment: 'In a large public body this kind of communication requires specific means for transmitting information and influencing those who receive it' (Habermas 1974: 55).

When Habermas' text was being written, the media available were press publications, radio and television. Habermas himself had doubted whether these were still functioning in a democratic, open manner. In any case, Gerhard and Neihardt distinguish three kinds of fora within the public sphere: the 'encounter public sphere', 'public events' and 'mass media' (Gerhard and Neihardt cited in Gerhards and Shafer, 2010: 144). Gerhards and Shafer introduce one more: the internet (Gerhards and Shafer 2010: 145). Gerhards and Shafer doubt whether the internet's openness and participatory character are in fact greater than those of other, more traditional media (Gerhards and Shafer 2010: 155). They are not alone in this opinion.

Yet, other scholars have written favourably of the internet in this respect, finding it to be superior in terms of participation and openness alike. For instance, Bennett points out how social justice activism has become different in recent years gaining a 'global scale, networked complexity, openness to diverse political identities, and [a] capacity to sacrifice ideological integration for pragmatic political gain' (Bennett 2004: 109). He also speaks of the importance of digital media to activist networks and the expansion of a web-based communication infrastructure (Bennett 2004). Bennett writes: 'Digital communication practices appear to have a variety of political effects on the growth and forms of global activism. These effects range from organizational dynamics and patterns of change to strategic political relations between activists, opponents and spectator publics. In addition, patterns of individual participation appear to be affected by hyperlinked communication networks that enable individuals to find multiple points of entry into varieties of political action' (Bennett 2004: 110). Castells has also written about the digital connection between social movements against globalization, stating that: 'The connection between many of these movements in a global network of debate and coordination of action and the formalization of some of these movements in a permanent network of social initiatives aimed at altering the processes of globalization, are processes that are redefining the sociopolitical landscape of the world' (Castells 2008: 85).

Moreover, Castells speaks of a social movement of public opinion 'made up of turbulences of information in a diversified media system, and of the emergence of spontaneous, ad hoc mobilizations using horizontal, autonomous networks of communication' (Castells 2008: 86). Castells mentions the example of mobilizations against the military junta in Myanmar: the first protests were small in number, but when videos from these were shot on cell phones and uploaded on the web by protesters led the participation increased and the movement was amplified (Castells 2008: 86). The regime's violent reaction to these protests were also filmed and uploaded, once more helping the movement become more known within and outside the country (Castells 2008: 86). Let us not forget that in the beginning of this decade the Arabian Spring and the movement of the indignados in Spain and Greece were also organized through social media.

CONCLUSION

Even if this new public sphere does not always achieve a higher level of democratic participation or a higher level of pressure on governments and worldwide organizations, it does have potential that previous media did not offer. Returning to George A. Romero, I would say that his ability to notice this potential early on –in fact, months before the aforementioned protests in Myanmar- speaks volume of his astuteness and of the importance of his work.

REFERENCES

- Bennett, W. Lance (2004), "Communicating global activism Strengths and vulnerabilities of networked politics", in Van De Donk, Wim, Brian D. Loader, Paul G. Nixon & Dieter Rucht (eds) *Cyberprotest: New media, citizens and social movements*. Routledge, 109-128.
- Castells, Manuel (2008), "The new public sphere: Global civil society, communication networks, and global governance." *The ANNALS of the American Academy of Political and Social Science* 616.1: 78-93.
- Deodato, Ruggero (1980), *Cannibal Holocaust*, ITA: F.D. Cinematografica.
- Dziga Vertov (1929), *The Man With The Movie Camera*, Soviet Union: VUFKU.
- Gerhards, J. and F. Neidhardt. 'Strukturen und Funktionen moderner Öffentlichkeit', in W.R. Langenbucher (ed.) *Politische Kommunikation*, pp. 52–88. Vienna: Braumüller, quoted in Gerhards, Jurgen & Mike S. Schafer, "Is the internet a better public sphere? Comparing old and new media in the USA and Germany", in *New Media Society* 2010 12: 143-160.
- Gerhards, Jurgen & Mike S. Schafer. "Is the internet a better public sphere? Comparing old and new media in the USA and Germany", in *New Media Society* 2010 12: 143-160.
- Habermas. Jurgen. "The Public Sphere: An Encyclopedia Article", in *New German Critique*, No. 3. (Autumn, 1974), pp. 49-55.
- Mamoulian, Rouben (1931), *Dr. Jekyll and Mr. Hyde*, USA: Paramount Pictures.
- Menegaldo, Gilles. "Dr Jekyll and Mr Hyde, from Rouben Mamoulian (1932) to Victor Fleming (1941): Remaking a Horror Myth, Aesthetics, Ideology and Gender Issues", in *Représentations dans le monde anglophone – Janvier 2017*, accessed April 21, 2017, <http://representations.u-grenoble3.fr/IMG/pdf/11-menegaldo.pdf>
- Montgomery, Robert (1947), *Lady In The Lake*, USA: Metro-Goldwyn-Mayer.
- Myrick, Daniel and Sanchez, Eduardo (1999), *The Blair Witch Project*, USA: Haxan.
- Romero, George A. (1968), *Night of the Living Dead*, USA: Image Ten, Laurel Group, Market Square Productions.
- Romero, George A. (1978), *Dawn of the Dead*, USA: Laurel Group Inc.
- Romero, George A. (1985), *Day of the Dead*, USA: Dead Films Inc., Laurel Entertainment Inc., Laurel-Day Inc.
- Romero, George A. (2005), *Land of the Dead*, USA/Canada/France: Atmosphere Entertainment MM, Romero-Grunwald Productions.
- Romero, George A. (2007), *Diary of The Dead*, USA: Artfire Films, Romero-Grunwald Productions.
- Romero, George A. (2009), *Survival of the Dead*, USA/Canada: Artfire Films, Romero-Grunwald Productions.
- Williams, Tony (2015) *The Cinema of George A. Romero: Knight of The Living Dead*. New York: Columbia University Press.
- Zryd, Michael. "Found Footage Film as Discursive Metahistory: Craig Baldwin's *Tribulation 99*." *The Moving Image* 3.2 (2003): 40-61.

ABOUT THE AUTHOR

Yorgos Drosos was born in 1980. He studied Mass Media and Communication in the University of Athens, with an MA in Music Culture and Communication from the same University. He is currently working on his Ph.D. thesis (“Aspects of the Monstrous in 21st century Audiovisual Fiction”) at the Department of Audio and Visual Arts of the Ionian University. He is also a published author of literature: his first book “Elliniki Asphyxia” (“The Greek Asphyxiation”) was published in 2013 under the pen name Elias Nisaris, while his second one, “To Orfano Aristourgima” (“The Orphaned Masterpiece”) was published in 2017, under his real name.

Email: yorgosdrosos@gmail.com

Website: <http://avarts.ionio.gr/en/department/doctoral-candidates/g-drosos/>

GIULIA BELLONI
Roma Tre, Italy

To Transcendence through Destruction: Figures from *Ghost in the Shell* (1995)

ABSTRACT

Ghost in The Shell (Mamoru Oshii, 1995) is rightly considered one of the pillars of Science Fiction both for its compelling story, capable of rising multiple philosophical questions, and for its innovative visual style, that influenced many movies to come.

As it has been already rightly pointed out (Carl Silvio, "Refiguring the Radical Cyborg in Mamoru Oshii's *Ghost in The Shell*", 1999), however, the movie brought to the table many questions that found only shallow innovative answers, conveying rather conservative images of the female body in its transformative trajectory, reinforcing gender binary ideas.

My paper will challenge the above interpretation by choosing the peculiar method of suspending the meaning as it stems from the filmic object as a whole, dissecting it into scenes that allow new constellation of sense to shine through, following Benjamin's and Adorno's favor for the fragment. Thus the sequence that will be analysed in detail is the one in which the protagonist, on its own quest for self definition, while battling with her body against a disruptive machine, goes through a monstrous transformation that appears on the screen as a powerful manifestation of inner strength that, ultimately, leads to the disruption of the cyborg body. However, what seemed to be a battle for power, was instead a battle for a superior form of relationship with another mysterious Artificial Intelligence, that leads to a new birth.

The paper outlines how the figure of the cyborg, and especially the female cyborg, as a site of human making influenced by the male gaze, is a battlefield that can open up possibilities for resistance and new inventions. In fact, the post organic body of the cyborg can be seen as a figure for gender (Donna Haraway, *A Cyborg Manifesto*, 1991) and race divides (Despina Kakoudaki, *Anatomy of a Robot*, 2014) informing a libidinal economy of exclusion and exploitation. Nonetheless, the parabola of the cyborg character, in her quest for autonomy and self awareness, also can tell us something new about societal dialectics: imagination, as an engine for action (Elaine Scarry, *The Body in Pain*, 1985), through disruption as performative re-making, can tear down previous boundaries set by the body/mind dichotomy that categorize beings into female/male, dis-human/human.

KEYWORDS

cyberspace, female body, fragment, transformation

REPRESENTING CYBER-SPACE

Ghost in the Shell, the anime movie directed by Mamoru Oshii in 1995, wasn't a commercial success, but gained in the following years the position of a cult movie among sci-fi lovers. The combination of existential and ontological tone of the story of Major Kusanagi, along with the striking visual representation of *cyberspace* – with the green sequences of numbers falling down along a black screen, an image then made popular by Sisters Wachowski's *Matrix* in 1999 – transformed the movie in a imaginative progenitor for directors and screenwriters, both from Hollywood and independent circuits, interested in the investigation of ethical questions arising from the problematic interactions between humans and machines. *Ghost in the Shell*, moreover, is a movie that raises questions with verbal and imaginative means, but doesn't offer all the answers. The lingering sensations of profound doubt towards fundamental problems – the body and mind relation, or how identity is shaped by the environment – conveyed by lyrical images of the city and the wandering body of the protagonist, are all elements that give the movie its peculiar unforgettable quirk. Nonetheless, not giving answers and leaving the responsibility to extract meaning to the watcher it's an aesthetical decision inevitably resting on a formal ambiguity, an ambiguity well investigated by Carl Silvio essay: "Refiguring the Radical Cyborg in Mamoru Oshii's *Ghost in the Shell*"(1999). He notes right away that *cyberspace*, as Anne Balsamo (1996) points out, can be marked by the same division of historical or real space, bringing on just a re-articulation of old identities in front of the challenges placed by the emergence of new technologies. Donna Haraway's (1991) recognition of the cyborg body too stems from the realization that what can be used as a mean towards the radical elimination of gender binaries, along with other forms of essentialism and oppression, comes from a place of enhanced social control and higher risk. Carl Silvio elaborates on an idea of *seduction* being at work behind the figure of the cyborg in popular culture: an image that looks innovative and rebellious while confirming those same elements it pretends to subvert. In this way a movie, as a form of representation, borrowing words from Raymond Williams (1989: pp. 378-90), functions as a device of indoctrination operating "toward the setting of limits and the exertion of pressure, away from a predicted, prefigured and controlled content".

A MOVIE ABOUT DOUBT

The protagonist of the movie is the cyborg Major Motoko Kusanagi, a prominent agent of the public-security agency Section 9, a police force devolved to solve problems arising in a world completely shaped by digital technologies. In 2029

the nations are still fighting over control of resources, but this is a cyberwar, where the main players are diplomats and computer engineers. The political plot revolves around the Puppet Master, a famous hacker being hunted down all over the world, who is actually seeking political asylum “as a sentient being” in Japan, since the country hasn’t got death penalty over cybercrimes like all the others do. But, during the movie, we also come to know that the Puppet Master is actually a program created by Section 6 – an agency developing artificial intelligence – called Project 2501 that, during time, acquired consciousness and purposes of its own. All this information is disclosed by the AI program himself, once he has been captured by Section 9, after having tried to escape section 6 by “ghosting” one of the female bodies produced in large numbers by Megatech Industries.

During the movie, questions about the definition of life, the meaning of mind – or “ghost”, how it is called here, making an immediate connection to the philosophical debate about substance dualism, famously sustained by Descartes and vigorously rejected in 1949 by Ryle – and its relationship with body arise, both from the administrative-legal point of view the Puppet Master advances, and from a more nuanced existential point of view, brought upon by Kusanagi’s conversations with police partner Batou, and her own lonely wandering through the city, here portrayed as a mirror of her own doubt: the slow dance between grey buildings and masses of people walking around them creates a moment of suspension, where the cyborg uncannily seems to spot a copy of her own body.

By the end of the movie, anyway, after a restless chase, Kusanagi is forced to battle face to face with the Puppet Master and against police too, while she starts discovering that the reason behind her previous antagonist actions leads towards emancipation for those who were brought to the world to serve human purposes, but that can actually try and build a universe of their own: a new step in the evolution process, a new post-human world.

While trying to forcibly gain access to the Puppet Master ghost, however, Kusanagi breaks up her own body: at this point she and her antagonist, with the help of Batou, Kusanagi’s police partner, have a final clarifying dialogue. They decide to merge together, becoming something else: something that is autonomous, self-aware, and free from police control over the cyborg body the protagonist used to have. Police, aware of the danger of two digital minds merging together, destroys the bodies. But Batou is able to transfer the “new ghost” in a “shell” found on the black market. The new entity, once awoken in the new body, decides to leave everything behind, to explore the coincidence between actual and cyberspace she/they is now experiencing.

A FIGURE OF MAKING

Carl Silvio analysis of the movie points out how the structure seems to gravitate towards an empowering role for the female protagonist, the Major, and how it also highlights the sexual ambiguity of a self-developed algorithm that, obviously,

can inhabit a female cyborg body without acquiring a typical feminized role. But, on the other hand, the movie reproduces the typical patriarchal idea of the female character gravitating around the body semiotic universe, and the male character gravitating around the mind one. In fact in the end, when they merge, the Pappet Master chooses words that designate Kusanagi as “the mother of a new offspring”, reinforcing an idea of female body devoted to reproduction. Despite the fact that, here, we are talking about programs and artificially made bodies that not necessarily have to mimic heteronormative biology. Also, throughout the movie, Kusanagi is often depicted on the screen as a body to be offered to the gaze of the male viewer (Mulvey, 1985: pp. 833-44): in many scenes we get to admire her as a beautiful object, especially during the artificial birth scene. We have, here, an apparently revolutionary story that, implicitly, reinforces, both by verbal and visual depiction, gender binaries and traditional ideas of femininity.



Image 1: Ghost in the Shell (1995): Birth Scene during Opening Credits.

A FIGURE OF UNMAKING

Carl Silvio's analysis is sharply understanding of the implicit meanings hidden in an apparently groundbreaking representation of a female cyborg. However, there is a singular scene from the movie that can be read as a figure of radical refusal. This scene, working as a depiction of willing unmaking, is capable of reversing the male-gaze centred visualization of the actual making – “the birth” – of the female cyborg body, a scene that can be considered the peak of the movie in its reassessing the objectification of the female body.

Donna Haraway says in her famous Manifesto, “a cyborg is the final grid of control” (1985: p.154), but new possibilities can arise from fragmented identities. Moreover, as she says, “to be feminized means to be made extremely vulnerable, able to be disassembled, reassembled, exploited as a reserve labour force” (1985: p.166), but, in a world dominated by the informatics of

dominance (1985: p.161), in which the world becomes a problem to be solved with the right homogenising and controlling code, “cyber politics is the struggle for language, against the one code” (1985: p. 176).

That’s the reason why the operation of fragmenting a text – this movie, that we can consider as a text bearing many meanings to unravel or decode – can allow a new sense to arise, especially given the fact that the methods mirrors the performance of a fictional self fragmented body. Following Benjamin micrological knowledge, it appears that the fragment is the key to new constellations of sense (Benjamin, 1928 (1999): p. 5), a suggestion further developed by Adorno, to whom the fragment is at the same time the sedimentation of historical suffering and the trace for the different, something totally different from totalizing power logics: a chance for resistance (Adorno, 1970 (2005) p. 62), flashing in a moment.

In the scene of self destruction, the Major here is pretending to try and kill the Puppet Master, sending away other agents, while she is actually trying to get to a place by which she can access the ghost of the AI’s algorithm on her own, to try and understand who he actually is and what are his goals, what means to be self-aware, to be alive, even beyond human biological evolution – a desire expressed in the scene showing the genealogical tree of human race being repeatedly shoot. She knows that those answers could solve her own doubts.

The actions of the protagonist show that she is willing to sacrifice her own body in the attempt to access the informations she needs to complete her existential self discovery: what she is, what it means to have a ghost, an artificial mind, what it means to be and feel. She tries a desperate move and in doing so the inner un-gendered energy stemming from her determination actually rips her body off. Seemingly organic flesh and wires and metal joints spilling out: passing through a state of muscular tension that jeopardizes the shape she has been given by the factory that produced her own body as a tool. In trying to transform the world, she actually transforms herself, changing her shape to the point of disintegration.

In this scene of political and existential expression and, ultimately, of sacrifice, I want to see a figure of necroresistance, a counterconduct Banu Bargu analysed in her book about hunger strikes in Turkish prisons in the first years of last decade (Bargu, 2014). Bargu combines Foucault’s analysis of sovereignty and governmentality and, with the aid of Achille Mbembe idea of necropower (Mbembe, 2003), she combines those instances in what she calls biosovereignty: an assemblage in the Deleuzian sense, a structure in formation, that is also the matrix of meaning and action for a power that, centred on racism, can articulate sovereignty, discipline and security as to render certain lives disposable, to reduce them as “death in life”.

In this context, necroresistance is the ultimate weaponization of life, where the body is made into an instrument to counteract instrumentality itself; where a metaphysical statement regarding the meaning of existence is also made: the radical refusal of obedience lies in a performance that is willing to politicize

death, because a life deprived of meaningful values and freedom is not worth to be lived. Banu Bargu, here, quotes Feldman, where he states that the imposed separation between body and mind ultimately makes the mind turn the body into a machine to disrupt the panopticon system (Feldman, 1991: p. 178). Here, the ghost wants to sacrifice the body, in order to gain insight and self knowledge, to break free from the mark of the factory.

Moreover, as Despina Kakoudaki points out in her *Anatomy of a Robot* (2014), the artificial person has always been a figure for the Other, be it the African Slave, or the Woman: the objecthood of the robot renders it the perfect being designed to be a pure instrument, a servant: “all subjects can become objects [...], that’s why racists epistemologies insists on the inherent increased vulnerability to enslavement of certain bodies” (Kakoudaki, 2014: p. 155). Here we are touching the pulsional core of that libidinal economy that’s always working at a symbolic level, just beneath the rational surface of economic assessments (Gammon & Palan, 2006: pp. 97-114). So, on one hand, the cyborg is the site where a fantasy of animation gets to be enacted: a fantasy where outside and inside of the body can be reversed, so to render birth a constant victory over death, enabling the overcoming of a primal fear. On the other, the cyborg is always born already adult, already physically sexualized, embodying the abstraction of the mechanical side of sex labour, a performance usually reserved to the female cyborg body, inherently incapable of ever being equal to a real human because of its inability to be born, suffer, procreate and die. In this sense the artificial people enact the structure of difference, a metaphysical barrier to the fear of a power that, necessity coming, could force us all into a state of abjection. That abjection that, both in fiction than in material life, is imposed upon certain bodies, physically marked, of which the cyborg is both the embodiment and the complete de-personification at the same time. Humans can’t empathize with objects made to be enslaved, it’s just not required.

The duality between the Self and the Other, as Haraway puts it, is the distinction of what can conceive of itself as the One, the Not Dominated against the Oppressed. The be Other means “to be multiple, without clear boundaries, frayed, insubstantial” (Haraway, 1985: p.177); it means also to embrace the fragmentation, refusing identity, to find affinities on which build upon new tactics of resistance and new aesthetics of existence.

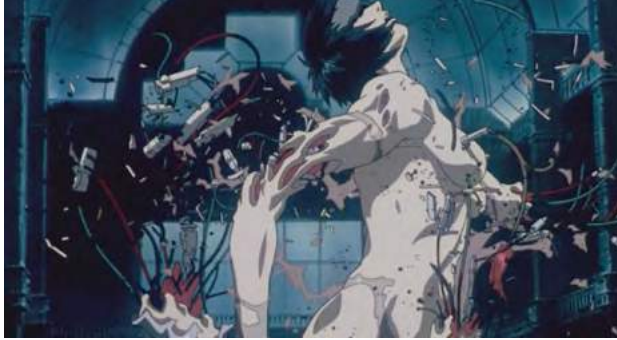


Image 2: *Ghost in the Shell* (1995): Self-destruction Scene.

TO TRANSCENDENCE THROUGH DISTRUCTION

Going partly against Eleaine Scurry's idea of making (Scurry, 1985) – meaning labour invested by an imaginative drive force that can bring about a better world, designed to actually give pleasure to its inhabitants– my aim is to argue that, in a world dominated by biosovereignty having the power to decide who lives and who dies, and the discipline to better govern a population, it's necessary to take a stand for the unmaking, for fragmentation, for destruction. For pain and displeasure: in the world we currently live in, those can be seen as generative forces too. To take seriously the unmaking is to give ontological dignity to otherwise misunderstood historical gestures: like the slaves throwing themselves in the water, in the back of the ships bringing them as commodities through the Atlantic Ocean (Wilderson III, 2010: pp. 1-33). Because the nature of that kind of subjugation that makes someone into an object doesn't leave space for forms of resistance that are not the application of brute force upon themselves, these things, via self-destruction.

To find a way to imagine new forms of staying in the world, in a relational and non essentialist way, is important to note that cyberspace, like any other non topographical space, can't bring emancipation if the grid of control (Farinelli, 2009), the structure of roles and hierarchies defining what a body can and cannot do, say, or even think or feel (Ranci re, 2008), stays in place. An attempt to seek out both in content and in shape: from the protagonist fragmented body, to the act of making a single scene work against the content of a whole movie. Quoting again Haraway: "cyborg writing is about the power to survive on the basis of seizing the tools to mark the world that marked them as other" (Haraway, 1985: p. 175), new interpretations, new imaginaries, are not only literal deconstructions but "liminal transformations" (Haraway, 1985: p. 177), to allow a subversion of all dualism, the logic underlying all exploitative epistemologies (Fanon, 1961 (2001); Ferreira Da Silva, 2007) or, in other terms, the ground of that matrix of knowledge that is the very condition for a complex ideology to be born and sustained (Deleuze & Guattari, 1972 (1983): p. 104). The body against the mind, the non-human against the human, slave against master, nature against

culture, female against male, transgender against cisgender, confrontations in which the winning part has already been decided by the universal reason embodied in the White Male, everything non conforming must be policed as a monster and casted away to the margins of the community. These margins can become a field of resistance: embracing the fragmented body, the fragmented text, through destruction, we can find critical ways of acting and thinking that can allow a political and aesthetical transcendence of the borders of the sane, normal, western community, to defy the ground upon which dualisms grow. To follow the traces toward a performance that can transform a fixed, agonising subjectivity into tools to build a new generative world.

REFERENCES

- Balsamo, Anne (1996), *Technologies of the Gendered Body: Reading Cyborg Women*. Durham, North Carolina: Duke University Press.
- Bargu, Banu (2014), *Starve and Immolate: The Politics of Human Weapons*, New York: Columbia University Press.
- Deleuze, Gilles & Guattari, Félix (1972), *Anti Oedipus: Capitalism and Schizophrenia*, (1983) English Translation of L'Anti-Oedipe. Minneapolis: University of Minnesota Press.
- Fanon, Franz (1961), *The Wretched of the Earth*, (2001), London: Penguin.
- Farinelli, Franco (2009), *La Crisi della Ragione Cartografica*, Torino: Einaudi.
- Feldman, Allen (1991), *Formations of Violence: e Narrative of the Body and Political Terror in Northern Ireland*, Chicago: University of Chicago Press.
- Ferreira Da Silva, Denise (2007), *Towards a Global Idea of Race*. Minneapolis: Minnesota University Press.
- Haraway, Donna (1985), "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century.", In *Simians, Cyborgs, and Women: The Reinvention of Nature*. (1991). New York: Routledge.
- Kakoudaki, Despina (2014), *Anatomy of a robot : literature, cinema, and the cultural work of artificial people*, London: Rutgers University Press.
- Mbembe, Achille (2003), "Necropolitics.". *Public Culture* (15, no. 1), pp. 11–40.
- Mulvey, Laura (1999), "Visual Pleasure and Narrative Cinema.", *Film Theory and Criticism : Introductory Readings*, New York: Oxford University Press.
- Rancière, Jacques (2008), *Le Spectateur émancipé*. Paris: La Fabrique.
- Scurry, Elaine (1985), *The Body in Pain: The Making and Unmaking of the World*, New York: Oxford University Press.
- Silvio, Carl (1999), Refiguring the Radical Cyborg in Mamoru Oshii's Ghost in the Shell, *Science Fiction Studies* (Vol. 26, No. 1), pp. 54-72.
- Wilderson III, Frank B. (2010), *Red, White and Black. Cinema and the Structure of U.S. Antagonisms*, Durham & London : Duke University Press.
- Williams, R. (1989), "Base and Superstructurein Marxist Cultural Theory.", *Contemporary Literary Criticism: Literary and Cultural Studies*. New York: Longman, pp. 378-90.

ABOUT THE AUTHOR

Giulia Belloni is an independent scholar and a screenwriter based in Rome. She received a Bachelor's Degree in Hermeneutics of Art with a study on George Bataille. Then she got a Master's Degree in Aesthetics with a thesis focused on the relationship between aesthetics and politics, following Jacques Rancière thought, both at La Sapienza, University of Rome. She recently completed a Master in Environmental Studies at Roma 3 University, with a paper regarding the colonial origins of cartography and the play between representation and ideology. She got the chance to intervene at the NeMLA Convention 2017, held in Baltimore, in the panel "Bodies that become: Conceptions of Female Bodies in Science Fiction" and she will be in Paris to participate to the conference "Espaces Genrés Sexués Queer" with a paper about European borders and LGBTQ migrants. She is collecting funds to direct her first feminist-horror: "Dog Face".

KOSTOULA KALOUDI
University of Peloponnese, Greece

Cinema: In the Vanguard of the Twentieth Century Film as a Premonition of Technological Excess

ABSTRACT

Early on, cinema demonstrated that it has an “early-detection” ability to sense major technological, social and cultural shifts. Achievements that changed human life in the twentieth century made their appearance even in the earliest films, before having a broader impact and becoming mainstream. Pioneer filmmakers’ imagination, restless spirit, and experimentation with this budding art form, cinema, enable us to trace developments that shaped the culture of a century in the films of the very first decades since its inception. Emerging at almost the same time as the airplane, cinema made possible another kind of flight for humans – a new scope of emotional and intellectual flight through film watching, giving form to fantasies, dreams and desires that previously seemed unattainable, as pointed out by Edgar Morin. A case in point is the “prophecy” of man’s voyage to the moon, which appeared on the silver screen years before becoming reality. George Méliès’ films *The Astronomer’s Dream* (*La lune à un Metre*, 1898), *A Trip to the Moon* (*Voyage dans la Lune*, 1902), Thomas Edison’s *A Trip to Mars* (1910) and Yakov Protazanov’s *Aelita Queen of March* (1924) heralded one of man’s greatest twentieth-century achievements while establishing the genre of science fiction, developing the unique aesthetics of space-themed films in the following decades. The increasing presence of the machine in motion pictures is a well-known fact. A prescient comment on the domination of the machine was Fernand Léger’s experimental film *Ballet Mécanique* (1924), whose shots celebrate speed, mechanisation, movement, advertising and industrial design long before these became an integral part of daily life. The apotheosis of speed as well as the invasion of machines formed the subject, albeit using a different approach, as early as in Mack Sennett’s Hollywood silent comedies, whose frenetic pace indirectly captured the industrialisation of American society and the rise of capitalism. During the cinema’s early decades, frequent references were also made to the train and the airplane; in filmic time, distances are minimised, creating a new perception of time and space, long before human transport became so easy. A bold pioneer, the director became a sort of “prophet”, or “seer”, in these cases. Yet, how exactly

did cinema become a forerunner of technology and science? Which cinematic techniques – also groundbreaking in their own right – were used to depict them on the silver screen? Are there common elements in such diverse films as these, themselves going against the grain of the prevailing narrative logic?

KEYWORDS

cinema, imagination, technology, speed, premonition

Ο κινηματογράφος θεωρείται μάρτυρας του εικοστού αιώνα, αποτυπώνοντας τις αλλαγές των αντιλήψεων και την αντανάκλαση που είχαν τα ιστορικά και πολιτικά γεγονότα στην καθημερινότητα του ανθρώπου. Από το 1895, τη χρονιά της εμφάνισής του μέχρι σήμερα, καταγράφει την ανθρώπινη πορεία καθώς η αντανάκλαση, η μαρτυρία, η ηχώ μιας εποχής, τα αποσπάσματα της πραγματικότητας μετατράπηκαν σε κινηματογραφικές εικόνες. Η διάσωση και η διάδοση του παρελθόντος, η μετατροπή του σε μνήμη και η μεταφορά του στις επόμενες γενιές αποτελούν χαρακτηριστικά γνωρίσματά του.

Από τα πρώτα του βήματα όμως ο κινηματογράφος απέδειξε πως έχει επίσης τη δυνατότητα να «δισαισθάνεται» τις μεγάλες τεχνολογικές, κοινωνικές και πολιτισμικές αλλαγές. Τα επιτεύγματα που άλλαξαν την ανθρώπινη ζωή κατά τον εικοστό αιώνα, εμφανίζονται στις πρώτες κίολας κινηματογραφικές ταινίες, πριν αυτά επηρεάσουν την καθημερινότητα ή ακόμα και πριν εμφανιστούν. Μελετώντας όμως τη δυνατότητα του κινηματογράφου να προαναγγέλλει γεγονότα, επιτεύγματα και καταστάσεις γνωρίζουμε συγχρόνως τη δική του Ιστορία και τις τεχνικές εξελίξεις που τον διαμόρφωσαν, την πρόοδο των εκφραστικών του μέσων, την εμφάνιση διαφορετικών σχολών, ρευμάτων και ειδών. Παράλληλα, οι ταινίες κάθε χώρας, σύμφωνα με τον Siegfried Krakauer, αντανakλούν τη νοοτροπία και τις αντιλήψεις των κατοίκων της πιο πολύ από κάθε άλλη μορφή τέχνης (Krakauer [1973] 1987 : 5). Η φαντασία των πρώτων κινηματογραφιστών, το ανήσυχο πνεύμα τους, αλλά και οι πειραματισμοί με την καινούρια τέχνη του κινηματογράφου, μας επιτρέπουν να ανιχνεύσουμε στις ταινίες των πρώτων δεκαετιών του τις εξελίξεις που διαμόρφωσαν τον πολιτισμό ενός αιώνα.. Εμφανιζόμενος περίπου την ίδια εποχή με το αεροπλάνο, ο κινηματογράφος επέτρεψε στον άνθρωπο μια αντίστοιχη υπέρβαση με αυτή της πτήσης, να πραγματοποιήσει δηλαδή μέσω της προβολής, διαφορετικά συναισθηματικά και διανοητικά ταξίδια και να δώσει μορφή στις φαντασιώσεις, στα όνειρα και στις επιθυμίες που έμοιαζαν αππραγματοποίητες, όπως επεσήμανε ο Edgar Morin (Morin [1956] 1995 : 13-15). Η ικανότητα του κινηματογράφου να προαναγγέλλει τους ανθρώπινους στόχους, τις επιδιώξεις και τις αναζητήσεις αιχμαλωτίζοντας το κλίμα της εποχής δεν είναι τυχαία. Από την αρχή του δέχτηκε επιρροές και συνομίλησε με διάφορα πεδία της τέχνης και της επιστήμης που προϋπήρξαν ή εμφανίστηκαν την ίδια περίοδο με εκείνον, όπως ο σιδηρόδρομος, η φωτογραφία, η ψυχανάλυση, η λογοτεχνία του φανταστικού, η σκέψη γύρω από την κίνηση (Leutrat 1992 : 10-17).

Μέχρι τα τέλη της δεκαετίας του '30 μπορούμε να επισημάνουμε την «προφητική» ικανότητα του κινηματογράφου να αναπαριστά και να παρουσιάζει γεγονότα που στο μέλλον θα αποτελούσαν κεφάλαια μεγάλης σημασίας για την ανθρώπινη πορεία και που θα άλλαζαν την καθημερινότητα του εικοστού αιώνα. Η άφιξη του ανθρώπου στο φεγγάρι και η όλο και μεγαλύτερη εισβολή της μηχανής στην ανθρώπινη ζωή, αποτέλεσαν από πολύ νωρίς όπως θα δούμε πηγή έμπνευσης για διαφορετικούς κινηματογραφιστές. Στην πρώτη περίπτωση, συναντάμε από πολύ νωρίς κινηματογραφικά δείγματα που προαναγγέλλουν μια από τις μεγαλύτερες ανθρώπινες υπερβάσεις κατά τον εικοστό αιώνα, ενώ δημιουργούν παράλληλα και τις βάσεις για το κινηματογραφικό είδος της επιστημονικής φαντασίας καταθέτοντας δείγματα μιας άλλης αισθητικής σχετικά με τις αναφορές στο διάστημα που ακολούθησαν τις επόμενες δεκαετίες.

Ο πατέρας της κινηματογραφικής σκηνοθεσίας και μυθοπλασίας George Méliès, γύρισε το 1898 μια πεντάλεπτη ταινία με τίτλο Το όνειρο του αστρονόμου ή Το φεγγάρι στο ένα μέτρο στην οποία συναντάμε κάποια από τα χαρακτηριστικά των ταινιών του όπως τα ζωγραφισμένα ταμπλό, τα πρώτα τρυκ της εξαφάνισης και της επανεμφάνισης μαζί με τη φιγούρα του αστέιου διαβολάκου που μπαينوβγαίνει στο στόμα του φεγγαριού που εμφανίζεται σαν ένα μεγάλο πρόσωπο το οποίο περιγελά και προκαλεί τον αστρονόμο. Όμως ξεκινώντας από αυτή την τυπική του «φαντασμαγορία» ο Méliès ήδη οραματιζόταν μια μεγαλύτερη και πιο περίπλοκη ταινία που θα περιέγραφε το ταξίδι του ανθρώπου στη Σελήνη πολύ πριν την πρώτη προσσελήνωση. Πηγή έμπνευσης στάθηκαν τα μυθιστορήματα του Jules Verne, *Από τη γη στη σελήνη* και *Γύρω από τη Σελήνη* αλλά και του H.J. Wells, *Οι πρώτοι άνθρωποι στο φεγγάρι* (Sirois – Trahan 2012 : 11-12) και αφορμή η ερώτηση ενός παιδιού σχετικά με το τι θα μπορούσε να συμβαίνει στη σελήνη. Έτσι ο Méliès χρησιμοποιώντας τη φαντασία του που άλλωστε χάρη σε αυτή ο κινηματογράφος άρχισε να αφηγείται ιστορίες και να αναπαριστά φανταστικούς κόσμους, γύρισε μέσα σε τρεις μήνες 260 μέτρα φιλμ που έδωσαν τελικά 13 λεπτά προβολής, ένα ρεκόρ για το 1902 με τριάντα ζωγραφισμένα ταμπλό και με ένα μεγάλο αριθμό ρόλων τους οποίους υποδύθηκαν, χορεύτριες από το μπαλέτο του θεάτρου του Σατλέ, ακροβάτες των Φολί Μπερζέρ, ηθοποιοί του μιούζικ-χωλ αλλά και ο ίδιος (Malthête – Meliès 1995 : 266 – 268). Η ταινία θέτει τις βάσεις του είδους της επιστημονικής φαντασίας που αργότερα θα κατακλύσει τις οθόνες, αλλά αποτελεί και για την εποχή της μία από τις πρώτες τόσο καλά οργανωμένες και σχεδιασμένες κινηματογραφικές παραγωγές. Ο Méliès, «άνθρωπος-ορχήστρα» σχεδίασε ο ίδιος τα κοστούμια και τα ντεκόρ με ιδιαίτερες απαιτήσεις κι ένα μεγαλύτερο κόστος για αυτά που φορούσαν οι κάτοικοι του φεγγαριού. Συνδύασε το προαίσθημα της τεχνολογίας με τα χαρακτηριστικά των παραμυθιών και το χαρούμενο κλίμα των φαντασμαγοριών του, με αποτέλεσμα το κατόρθωμα του ταξιδιού στο φεγγάρι να είναι ταυτόχρονα μυστηριώδες αλλά κι αισιόδοξο, αφήνοντας στο θεατή της εποχής μια υποψία-υπόσχεση για σπουδαία ανθρώπινα κατορθώματα. Δυστυχώς δεν ήξερε πως αυτή η προφητική ταινία του θα αποτελούσε την αρχή της πτώσης του καθώς αντίγραφα της έφτασαν

χωρίς την έγκρισή του στην Αμερική για να παρατυπωθούν από τον Edison και να του στερήσουν έτσι μια παγκόσμια επιτυχία. Στη Γαλλία, παρά τις αρχικές επιφυλάξεις αυτών που πρόβαλλαν κινηματογραφικές ταινίες στα υπαίθρια πανηγύρια σχετικά με το θέμα αλλά και με την τιμή της κόπιας, η ταινία του Méliès έγινε επιτυχία μετά τις από προσπάθειες του ίδιου που τη διαφήμισε ει φτιάχνοντας και τη χαρακτηριστική αφίσα με το σκίτσο του φεγγαριού να μορφάζει εξαιτίας του πρωτόγονου διαστημόπλοιου που εισχωρεί στο μάτι του, εικόνα που ταυτίστηκε άλλωστε και με την πρώτη εποχή του κινηματογράφου.

Λίγα χρόνια αργότερα ο Thomas Edison ο οποίος εκείνη την εποχή κυριαρχεί ακόμα στο κινηματογραφικό τοπίο της Αμερικής, γυρίζει μια πεντάλεπτη ταινία με το ίδιο θέμα με τίτλο *Ταξίδι στον Άρη*. Η ταινία, χρησιμοποιεί κυρίως τα σπέσιαλ εφέ της εποχής για να αφηγηθεί τα πειράματα ενός επιστήμονα που τελικά τον κάνουν να εκτοξευθεί μέχρι τον πλανήτη Άρη και να συναντήσει τους κατοίκους του, γιγαντιαία πλάσματα που τον περιεργάζονται με περιέργεια. Σε αυτές τις φιγούρες- αρχέτυπα του εξωγήινου, θα μπορούσαμε να διακρίνουμε χαρακτηριστικά που αργότερα θα συναντήσουμε και σε άλλες ταινίες επιστημονικής φαντασίας. Ξεχωρίζει θέση κατέχει επίσης ο επιστήμονας που χάρη στην επιμονή του ανακαλύπτει νέα στοιχεία που ανατρέπουν τα δεδομένα της πραγματικότητας, φιγούρα που θα πρωταγωνιστεί σε έναν μεγάλο αριθμό ταινιών από τη δεκαετία του '30 και μετά (Billard 1993 : 140).

Το θέμα του ταξιδιού στο διάστημα, θα το συναντήσουμε αργότερα και στο σοβιετικό κινηματογράφο όταν το 1924 ο Yakov Protazanov γυρίζει την ταινία μεγάλου μήκους *Αελίτα, βασίλισσα του Άρη*, που αφηγείται την ονειροπόληση ενός νεαρού μηχανικού σχετικά με μια παράλληλη πραγματικότητα στον Άρη. Τα σκηνικά και τα κοστούμια της ταινίας αποτέλεσαν αργότερα έμπνευση για αμερικάνικες παραγωγές επιστημονικής φαντασίας.

Αυτές οι τόσο διαφορετικές ταινίες που αναφέραμε, αποτελούν και οι ίδιες υπέρβαση της αφηγηματικής λογικής που κυριαρχούσε. Χρησιμοποιούν νέα κινηματογραφικά μέσα για να μετατρέψουν την ανθρώπινη φαντασία σε κινούμενη εικόνα αποδεικνύοντας ταυτόχρονα άλλη μια ξεχωριστή ικανότητα του κινηματογράφου. Πρωτοπόρος και τολμηρός, ο σκηνοθέτης μετατρέπεται σε αυτές τις περιπτώσεις σε ένα είδος «προφήτη» ή «μάντη» σχετικά με το μέλλον. Και αν η ταινία γίνεται κι αυτή ένα ιστορικό αρχείο από το οποίο ο ερευνητής μπορεί να αντλήσει πληροφορίες για το παρελθόν αλλά και για το παρόν κατά το οποίο γυρίστηκε, όπως υποστήριζε εδώ και πάνω από σαράντα χρόνια ο Marc Ferro, ο ίδιος σε μια πιο πρόσφατη μελέτη του επισημαίνει πως ιδιαίτερο ενδιαφέρον έχουν και οι ταινίες που αναπαριστούν το μέλλον αποκαλύπτοντας επομένως όχι μόνο τα πρακτικά και υλικά προβλήματα της καθημερινότητας, αλλά και με έναν πιο έμμεσο τρόπο, τις νοοτροπίες, τους φόβους και τις επιθυμίες του συλλογικού ασυνείδητου (Ferro 2003 : 162 – 163).

Επιστρέφοντας στις τεχνολογικές υπερβάσεις που προανήγγειλε ο κινηματογράφος η όλο και πιο συχνή παρουσία της μηχανής στις κινηματογραφικές ταινίες στις αρχές του εικοστού αιώνα είναι γεγονός, όπως και η αποθέωση της ταχύτητας, που μαζί με την εισβολή της μηχανής στην

ανθρώπινη ζωή τη συναντάμε ήδη από τη δεκαετία του '10 στις βωβές κωμωδίες του Mack Sennett στο Χόλιγουντ, που κατέγραψαν έμμεσα την εκβιομηχάνιση της αμερικάνικης κοινωνίας και την άνοδο του καπιταλισμού μέσα από τους φρενιτιώδεις ρυθμούς τους. Ο παραγωγός Mack Sennett, ίδρυσε το πρώτο του στούντιο το 1912 για να μετατραπεί πολύ γρήγορα σε «βασιλιά της κωμωδίας». Βλέποντας σήμερα τις ταινίες του από τις οποίες παρέλασαν σημαντικοί κωμικοί, παράξενες φιγούρες και περιστασιακοί αστέρες της πρώτης εποχής του αμερικάνικου κινηματογράφου, μπορούμε να διαπιστώσουμε πως βρισκόμαστε μπροστά στην εικόνα ενός παλιού κόσμου που καταρρέει για να τον διαδεχθεί ένας άλλος, καινούριος και ασύγκριτα πιο γρήγορος. Σπίτια κατεδαφίζονται μέσα σε δευτερόλεπτα, στέγες εκτινάσσονται και έπιπλα διαλύονται, ενώ τα αντικείμενα δημιουργούν όλο και μεγαλύτερα προβλήματα που οδηγούν σε βίαιες παρεξηγήσεις μεταξύ των πρωταγωνιστών οι οποίοι κινούνται με ρυθμό κουρδισμένων μηχανών (Kral 1984 : 266 – 267). Οι διαφορετικοί τύποι που συνυπάρχουν τρέχοντας, ο αλήτης, ο αστυνομικός, η νεαρή όμορφη κοπέλα, ο επιχειρηματίας, ο μετανάστης, τα μικρά παιδιά, δίνουν μια εικόνα του νέου αστικού τοπίου που φιλοξενεί ετερόκλητες προσωπικότητες και που μετατρέπεται σε μια σύγχρονη ζούγκλα όπου η καθεμία από αυτές προσπαθεί να επιβιώσει και να προλάβει την ασταμάτητη ροή των γεγονότων. Τα τροχοφόρα κατέχουν επίσης μια σημαντική θέση στις κωμωδίες του Mack Sennett, κατά τις πρώτες δεκαετίες του κινηματογράφου δεν λείπουν άλλωστε και οι συνεχείς αναφορές στο σιδηρόδρομο και το αεροπλάνο. Μέσα στο φιλικό χρόνο μιας ταινίας οι αποστάσεις ελαχιστοποιούνται δίνοντας μια νέα αντίληψη του χρόνου και του χώρου πολύ πριν οι μετακινήσεις υπάρξουν τόσο ανώδυνες για τον άνθρωπο. Το αεροπλάνο γίνεται μέχρι και ιπτάμενη σκηνή χορευτικών αποσπασμάτων ενώ με μεγάλη ευκολία οι κινηματογραφικοί ήρωες το χρησιμοποιούν για να μετακινηθούν. Και το τρένο, παρόν βέβαια στην οθόνη από την πρώτη ταινία των αδελφών Lumière, μετατρέπεται συχνά σε χώρο συναντήσεων και γνωριμιών (Mejean 2012 : 20-24).

Ξεχωριστό όμως σχόλιο για τη μελλοντική κυριαρχία της μηχανής αποτελεί η πειραματική ταινία του Fernand Léger *Μηχανικό Μπαλέτο* που γύρισε σε συνεργασία με τον Dudley Murphy το 1924 και τα πλάνα της συνθέτουν ένα αφιέρωμα στην ταχύτητα, τη μηχανή, την κίνηση, τη διαφήμιση και τα βιομηχανικά αντικείμενα πριν αυτά αποτελέσουν αναπόσπαστο μέρος της ανθρώπινης καθημερινότητας. Μηχανικά εξαρτήματα που αποκτούν χάρη στα κοντινά πλάνα μια άλλη διάσταση ενώνονται απότομα με κομμάτια ενός ανθρώπινου προσώπου, αποσπασματικές διαφημιστικές φράσεις επανέρχονται μετά από εικόνες επανάληψης, βιτρίνες και φώτα εμφανίζονται στιγμιαία, σε αυτή την τόσο σημαντική για το κεφάλαιο της κινηματογραφικής αβάν-γκαρντ ταινία. Ο Léger κινηματογραφεί επίσης τα αντικείμενα σε κίνηση δημιουργώντας έναν ιδιαίτερα γρήγορο ρυθμό. Στο *Μηχανικό μπαλέτο*, μπορούμε να ανιχνεύσουμε σήμερα μια κριτική ματιά σχετικά με το σύστημα παραγωγής, τους εργασιακούς ρυθμούς και την όλο και μεγαλύτερη εξουσία των αντικειμένων, αυτή τη νέα πραγματικότητα δηλαδή που το 1924 ταυτιζόταν με την πρόοδο και την εξέλιξη

(Θεοδωράκη 1990: 95). Η ταινία κλείνει με την ξύλινη μαριονέτα-ομοίωμα του Charlie Chaplin *Charlot cubiste* που ο Léger είχε κατασκευάσει το 1920 με σκοπό τη δημιουργία μιας ταινίας animation που δεν ολοκληρώθηκε ποτέ. Το 1924 ανακατασκεύασε το έργο για να το συμπεριλάβει στην κινηματογράφιση των αντικειμένων του *Μηχανικού Μπαλέτου*. Αυτή η αναφορά, μας οδηγεί και σε ένα άλλο κινηματογραφικό παράδειγμα προαναγγελίας της εξαφάνισης ουσιαστικά του ανθρώπου από την παρουσία της μηχανής, που σήμερα μπορούμε να διαπιστώσουμε καθημερινά και στο επίπεδο της εργασίας. Πρόκειται για την ταινία *Μοντέρνοι καιροί* που γύρισε ο Charlie Chaplin το 1936 και με τον ιδιαίτερο του τρόπο προσέγγισε την εξουσία της μηχανής και την εκβιομηχάνιση της κοινωνίας, προβάλλοντας τον όλο και πιο σημαντικό ρόλο των εργοστασίων στην καθημερινή ζωή, δίνοντας στον κωμικό ήρωα τη δυνατότητα να σχολιάσει την κοινωνία και την πραγματικότητα (Guigueno 1998 : 141 – 144).

Συμπερασματικά, ο κινηματογράφος μπορεί να αναπαραστήσει το μέλλον, να επιχειρήσει ένα άλμα στο χρόνο να ζωντανέψει προμηνύματα και προαισθήματα, υπερβαίνοντας την ίδια στιγμή τα δικά του όρια, προτείνοντας νέα κινηματογραφικά είδη, καταργώντας τους κανόνες της ομαλής συνέχειας για το θεατή αλλά και τρομάζοντάς τον με τις προφητικές του ικανότητες. Προειδοποίηση, προϊδεασμός ή όραμα η κινηματογραφική ταινία πάντως μπορεί να αφουγκρασθεί τις μελλοντικές αλλαγές, όπως απέδειξαν τα παραπάνω παραδείγματα.

Αφήνοντας για λίγο το πεδίο της τεχνολογίας, θα ήταν παράλειψη να μην αναφερθούμε και σε μια διαφορετική προαναγγελία του κινηματογράφου, σχετική με τα ιστορικά γεγονότα που επεσήμανε ο Krakauer, στη μελέτη του *Από τον Καλιγκάρι στον Χίτλερ* εξηγώντας πως οι ταινίες του γερμανικού εξπρεσιονισμού, προανήγγειλαν την άνοδο του ναζισμού, αποτύπωσαν την απαισιοδοξία του γερμανικού λαού στη συγκεκριμένη περίοδο και κατάφεραν να μεταφέρουν στην οθόνη τις ανησυχίες και τις ελπίδες των ανθρώπων μετά τον Α΄ παγκόσμιο πόλεμο. Υποστηρίζει χαρακτηριστικά πως στον Δρ. Καλιγκάρι όπως εμφανίζεται στην ομώνυμη ταινία, ως ένας τύραννος με διπλή προσωπικότητα που έχει τη δυνατότητα να υπνωτίζει και να καθοδηγεί, μπορούμε να βρούμε αντιστοιχίες με τον Χίτλερ (Kraakauer [1973] 1987: 5 – 11). Μένει επομένως σε μας, τους σημερινούς θεατές, να αποκρυπτογραφήσουμε τις σύγχρονες ανησυχητικές ταινίες, θέλοντας να παρέμβουμε όσο είναι δυνατόν στη διαμόρφωση του μέλλοντός μας.

ΒΙΒΛΙΟΓΡΑΦΙΑ

- Billard, C. (1993), 'Le cinéma de science-fiction', *Panorama des genres au cinema, Cinémaction*, 68, Éditions Corlet, σελ. 134-147.
- Ferro, Marc (2003), *Cinéma, une vision de l' Histoire*, Paris: Éditions du chène.
- Guigueno, V. (1998), 'Cinéma et société industrielle: le travail à la chaîne à l'

- epreuve du burlesque', in De Baecque, A. & Delage, C. (sous la direction de), *De l'histoire au cinéma*, Éditions complexe, σελ. 127-144.
- Krakauer, Siegfried [1973] , (1987), *De Caligari à Hitler*, Flammarion.
- Kral, Petr (1984), *Le burlesque ou la morale de la tarte à la crème*, Paris: Éditions Stock, Ramsay Poche Cinéma.
- Leutrat, Jean-Louis (1992), *Le cinéma en perspective: une histoire*, Paris: Nathan Université.
- Malthête-Meliès, Madeleine (1995), *Méliès l'enchanteur*, Paris: Éditions Stock, Ramsay Poche Cinéma.
- Mejean, J.-M. (2012), 'Polysémie de l'apparition du train au cinéma', *Le train des cineastes*, Cinémaction, 145, Éditions Corlet, σελ. 20-24.
- Morin, Edgar [1956], (1995), *Le cinéma ou l'homme imaginaire*, Paris: Les éditions de minuit.
- Sirois-Trahan, Jean-Pierre (2012), *La vie et l'œuvre d'un pionnier du cinéma*, Paris: Les éditions du sonneur.
- Θεοδωράκη, Στέλλα (1990), *Κινηματογραφικές πρωτοπορίες*, Αθήνα: Εκδόσεις Νεφέλη.

ABOUT THE AUTHOR

Kostoula Kaloudi is an Assistant Professor at the Department of Theatre Studies at the University of the Peloponnese. She has contributed articles to international journals, conference proceedings and edited volumes and she has participated in international conferences. She has also published two books in Greece (*The Asia Minor catastrophe in cinema*, Athens, Dodoni, 2001, *Filmic influences and references, a cinematic labyrinth*, Athens, Papazisis 2014). Her research interests focus on the relationship of cinema and history, the representation of individual and collective memory in the cinema, the cinematic techniques for narrating the past and the relation of cinema with the other arts.

Email: kaloudi@uop.gr, kaloudik@otenet.gr

KONSTANTINOS TILIGADIS
Ionian University, Greece
FRANCESCO KIÀIS
Artist, Greece
IAKOVOS PANAGOPOULOS
University of Central Lancashire, UK

The use of fear as structural feature in visual arts and cinema art

ABSTRACT

Taboo and fear or fear and Taboo. The use of fear as structural feature in visual arts and cinema art, through autoethnographic recordings of the postgraduate students in the “Audiovisual Arts in the Digital Age” program of the Department of Audio and Visual Arts of Ionian University.

The feature of “fear” influenced strongly the arts, because the charm of this matter is linked the process of myth and collective unconscious. These issues may be particularly interesting for the art world, but they are considered as taboo by the majority of the society. As a topic, fear is intrinsically linked with art and, in certain cases, marked their maiden voyage. A characteristic example is one of the first screenings of cinema film by Lumière brothers, the title of which was: *L'Arrivée d'un train en gare de la Ciotat 1895*, where it is referred from many sources that the audience stood up terrified as they saw the “virtual train” coming straight at them. Peter Gsellmann states: “The audience was running towards the exit consumed by fear when they saw the puffer coming towards them. They feared that it could come out of the screen”. Over the years, both fear and the aesthetic media have changed and have been adapted to modern reality. The present announcement refers to studying fear as taboo in art, focusing on the project results of the students in the postgraduate program “Audiovisual Arts in the Digital Age” of the Department of Audio and Visual Arts of the Ionian University for the lesson of “Video- Art”. The main objective of the projects was the attempt to connect the audiovisual arts with the language of cinema and the performing arts. The ultimate objective was the production of integrated projects, which had the topic of fear as their structural feature. This experiment gave the opportunity to various approaches of the art to come together through the educational process. Except for the production and the delivery of the projects, students researched the issue of fear in order to produce autoethnographic projects on their perception about fear. The material produced from the present announcement will be the production of an academic research by the professors

of the course, which will also link the theoretical issue of fear as Taboo through three different approaches (Video Art, Performing Art, Cinema) as well as the presentation of some parts of the students' projects and their autoethnographic portfolio that came from the research carried through the educational procedure. The research questions that will be answered are the following: Is fear a taboo in today's art today? How is this reflected in the educational process through a combining way of learning various approaches of art?

KEYWORDS

Fear and cinema, fear and performance, fear and art, teaching fear

ΦΟΒΟΣ Ή ΤΑΜΠΟΥ ΩΣ ΚΑΛΛΙΤΕΧΝΙΚΗ ΕΡΕΥΝΑ

Η θεματική διερεύνηση της έννοιας του φόβου μέσα από την ιστορία την τέχνης, την ψυχολογία τα προσωπικά βιώματα, την πολιτική και την προπαγάνδα αποτέλεσαν μέρος των ερεθισμάτων της καλλιτεχνικής δημιουργίας μια ομάδας ανθρώπων με ιδιαίτερη πολυμορφικότητα. Γνώση που συνδυάστηκε με θεωρητική και πρακτική οπτική στους τομείς τέχνης, τεχνολογίας, επιστήμης και στο να κατανοήσουμε πλήρως τη φρίκη της ανθρώπινης βίας τοποθετώντας το εξής ερώτημα στη συζήτηση: “η σύγχρονη τέχνη αποτελεί ταμπού ως πολιτική της ανθρώπινης σιωπής;”

Ο Paul Virilio θεωρεί ότι οι σύγχρονοι καλλιτέχνες έχουν εγκαταλείψει τη λειτουργία της συνεχούς επανεκτίμησης του δημιουργικού, πρακτικές και ευαισθησίες, φαντασία, την πολιτιστική έννοια που εξελίσσει τις προηγμένες κοινωνίες. Σε αντίθεση με τον Nietzsche, τον Sartre ή τον Camus, ο Virilio ισχυρίζεται, ότι είναι ανυπόμονος να μελετήσει την ποικιλομορφία της ζωής και τη σύγχρονη τέχνη. Την κρίση της σημασίας που είχαν αναπτύξει οι καλλιτέχνες του δέκατου έβδομου και του εικοστού αιώνα. Εξετάζει και προτείνει την σύγχρονη επαναστατική τέχνη που προβάλετε μέσω της ελπίδας στις αισθητικές διαδικασίες για τον προμελετημένο τερματισμό της έκφρασης της σιωπής (Virilio 2006).

ΦΟΒΟΣ Ή ΤΑΜΠΟΥ ΩΣ ΕΙΚΑΣΤΙΚΟ ΔΡΩΜΕΝΟ

Η δημοσίευση αυτή είναι μέρος της ανάπτυξης μεθοδολογίας για τον τρόπο διδασκαλίας και την εκπαίδευση στην εικαστική έρευνα σε συνεργασία διδασκόντων και διδασκομένων με σκοπό την υλοποίηση εικαστικών δρώμενων στο μεταπτυχιακό πρόγραμμα του τμήματος Τεχνών Ήχου και Εικόνας του Ιονίου Πανεπιστημίου με τίτλο Οπτικοακουστικές Τέχνες στην Ψηφιακή Εποχή. Αυτό έγινε με την υλοποίηση σε μορφή βίντεο καταγεγραμμένης Performance από τον κάθε φοιτητή και φοιτήτρια που συμμετείχε στο μάθημα της βιντεοτέχνης (video art) με θέμα Φόβος. Έγινε παράδοση θεωρητικής και πρακτικής εργασίας.

Ταμπού αποτέλεσε για τους φοιτητές κυρίως η εκτέλεση της Performance ως μέσω εικαστικής έκφρασης. Παράλληλα οι φοιτητές παρακολούθησαν σεμινάρια θεωρίας τέχνης, κινηματογράφου και Performance. Το Θεωρητικό και

πρακτικό αποτέλεσμα χρειάστηκε να ολοκληρωθεί στη διάρκεια του χειμερινού εξαμήνου 2016-17.

Η ολοκλήρωση της εκπαιδευτικής διαδικασίας πραγματοποιήθηκε με την παρουσίαση των δρώμενων στο Μέγαρο Μουσικής Αθηνών στο πλαίσιο της αναδρομικής έκθεσης του τμήματος στις 20 και 21 Μαΐου 2017.

ΦΟΒΟΣ ΚΑΙ ΤΑΜΠΟΥ ΣΤΟΝ ΚΙΝΗΜΑΤΟΓΡΑΦΟ

Ο κινηματογράφος είναι ένα μέσο που από τη δημιουργία του, έως σήμερα έχει ταυτιστεί με την έννοια του φόβου, ο οποίος λειτουργεί σαν χαρακτηριστικό “ταμπού” σε όλη την εξέλιξη του. Στο παρθενικό του ταξίδι το κομμάτι του φόβου ήταν το ίδιο το κινηματογραφικό μέσο. Το οποίο, καθώς ήταν άγνωστο στο ευρύ κοινό, φάνταζε σαν κάτι μαγικό και απόκοσμο. Σαν ένα πέρασμα από την θνητή ύπαρξη στην αιωνιότητα της κινούμενης εικόνας. Χαρακτηριστική είναι η προβολή της πρώτης ταινίας των αδελφών Lumiere “L’Arrivée d’un train en gare de La Ciotat” όπου όπως αναφέρει ο Hellmuth Karasek στην *Der Spiegel*: “Αν και το κινηματογραφικό τρένο το οποίο κατευθυνόταν προς το κοινό μέσα από μια θορυβώδες κινηματογραφική εικόνα η οποία ήταν και ασπρόμαυρη (χωρίς τα φυσικά χρώματα και τις φυσικές διαστάσεις) και αν και ο μόνος ήχος που συνόδευε την εικόνα ήταν ο ήχος του προτζέκτορα, οι θεατές ένιωσαν να απειλούνται και πανικοβλήθηκαν.” (Loiperdinger 2004: 89).

Η βιομηχανία του φόβου, παρόλα αυτά, στον κινηματογράφο είναι μια εξαιρετικά επικερδής και ολοένα και αυξανόμενη επιχείρηση. Όπως αναφέρει ο Kawin: “Οι στιγμές που κρατάμε τα μάτια μας ανοιχτά στην εικόνα του τρόμου, ρουφώντας όλο το περιεχόμενο της, νιώθοντας δέος και αηδία. Αυτές οι στιγμές, όπου πρέπει να κοιτάξεις αυτό που φοβόσουν να φανταστείς και νόμιζες ότι δεν θα αντέξεις να αντικρίσεις. Αυτές είναι οι στιγμές όπου το ίδιο το μέσο είναι στις δόξες του και είναι στιγμές αποκάλυψης και διαφάνειας” (Kawin 2012: 5).

Ο φόβος λειτουργούσε από την αρχική του διάσταση στον κινηματογράφο ως ταμπού καθώς ο σκοπός του ήταν η ενεργοποίηση της “αμυγδαλής” του εγκεφάλου η οποία είναι μια ομάδα νευρώνων που θεωρείται μέρος του “πρωτόγονου εγκεφάλου” και συνδέεται με συναισθήματα όπως ο φόβος. Για την ενεργοποίηση αυτού του μέρους του εγκεφάλου οι πρώτοι κινηματογραφιστές ταινιών φόβου το 1920 χρησιμοποίησαν την ψυχανάλυση του Φρόυντ καθώς και την συμπεριφοριστική σχολή του Παβλόφ σαν εργαλεία για την δημιουργία στρες και φόβου στο κοινό ώστε να ενεργοποιηθούν τα πρωτόγονα μέρη του εγκεφάλου τους. Χαρακτηριστικές ταινίες της εποχής είναι *The Cabinet of Dr. Caligari* 1920, *Nosferatu* 1922, *Dr. Jekyll and Mr. Hyde* 1955.

Οι επόμενες δεκαετίες σημαδεύτηκαν από την εμβληματικότερη μορφή των ταινιών φόβου, ο οποίος μετέτρεψε αυτό το είδος του κινηματογράφου στην βαριά βιομηχανία του σινεμά. Όπως αναφέρει η Lee Mock: “Το στίλ του Hitchcock αποτελούνταν από ακριβή προσοχή στην λεπτομέρεια και στην στυλιστική καινοτομία και οι δύο αυτές αρετές θεωρούνταν από τους κριτικούς ότι ξέφευγαν από την τηλεοπτική λογική” (Lee Mock 2015: 68).

Η ίδια όμως η αναπαράσταση του φόβου και πιο συγκεκριμένα του φόβου ως ταμπού έχει υποστεί αλλαγές και μεταλλάξεις, ιδίως με την ανάπτυξη της τεχνολογίας και της χρήσης των ειδικών εφέ, το κοινό ζητάει νέα μέσα και εναλλαγές στην αφήγηση που θα καταφέρουν να το σοκάρουν. Ο κινηματογράφος φόβου έως τις αρχές του 2000 είχε καταντήσει ένα είδος που ήταν δύσκολο να σοκάρει πια και ακροβατούσε ανάμεσα από τετριμμένες καταστάσεις, επαναλαμβανόμενα στερεότυπα και αναμενόμενες εναλλαγές. Η ταινία η οποία άλλαξε τα δεδομένα και ξεκίνησε μια σειρά από παρόμοιου είδους αφηγήσεις είναι το *The Blair Witch Project* 1999. Η συγκεκριμένη ταινία ήταν μια αναπάντεχα μεγάλη επιτυχία. Γυρίστηκε με μια 16μμ κάμερα στο χέρι και με πολύ μικρό budget. Η καμπάνια της ταινίας στηριζόταν σε ένα “υποτιθέμενο αληθινό υλικό που βρέθηκε” από κασέτες μαθητών στο Burkitsville, Maryland οι οποίοι περιπλανιόντουσαν στο δάσος κάνοντας ένα ντοκιμαντέρ για τον τοπικό μύθο κάποιας μάγισσας (Reyes 2015). Αυτή η ταινία άνοιξε ένα νέο κεφάλαιο στην βιομηχανία του φόβου στον κινηματογράφο, η οποία στηριζόταν στα πλάνα στο χέρι, στη σύνδεση του κοινού με τον πρωταγωνιστή και στη ντοκιμαντερίστικη λογική της φόρμας η οποία άφηνε πάντα το ενδεχόμενο ότι μπορεί αυτή η ιστορία να είναι αληθινή. Αυτό κίόλας ήταν και το κομμάτι του φόβου, ότι ο εγκέφαλος του κοινού είχε συνδέσει αυτού του είδους την κινηματογράφηση με την αφήγηση των αληθινών γεγονότων ενός ντοκιμαντέρ και το ενδεχόμενο η αφήγηση αυτών των ταινιών φόβου να είναι αληθινή είναι που τους προκαλούσε φόβο. Χαρακτηρίστηκες ταινίες που ακολούθησαν τόσο αυτήν τη λογική κινηματογράφησης όσο και παρόμοια λογική προώθησης είναι το *Paranormal Activity* 2007 και *Rec* 2007.

Συμπερασματικά, οι ταινίες φόβου όπως αναφέρει ο Kawin: “Περιέχουν στοιχεία που στοχεύουν στις αρχέγονες ρίζες της ανθρώπινης ύπαρξης, το αντικείμενο είναι απαίσιο και κανείς δεν θέλει να γίνει πραγματικότητα. Μπορούν να μας φέρουν κοντά στο χειρότερο που μπορεί να γίνει.... Παρόλαυτα είμαστε συνδεδεμένοι με το είδος λόγω της αδρεναλίνης και της χαλάρωσης που προσφέρει η κάθαρση.”(Kawin 2012: 3).

Η αναζήτηση της αδρεναλίνης και η μετέπειτα ευεξία που προσφέρει είναι προϊόν αναζήτησης μεγάλης ομάδας της ανθρωπότητας. Η παρακολούθηση των ταινιών φόβου είναι ίσως ο πιο ασφαλής και ακίνδυνος τρόπος ενεργοποίησης αυτών των εγκεφαλικών ουσιών.

Κινηματογραφική προσέγγισή στο Μεταπτυχιακό

Στο Μεταπτυχιακό Πρόγραμμα του Τμήματος Τεχνών Ήχου και Εικόνας του Ιονίου Πανεπιστημίου, “Οπτικοακουστικές Τέχνες στην Ψηφιακή Εποχή”, πραγματοποιήθηκαν μια σειρά σεμιναρίων και εργασιών με αντικείμενο την κινηματογραφική γλώσσα. Σκοπός αυτών των εργαστηρίων ήταν η γνωριμία των φοιτητών του τμήματος με την τέχνη του κινηματογράφου και το άνοιγμα μιας πιο δομημένης φόρμας στην καλλιτεχνική δημιουργία, από την οποία θα

μπορούσαν να αντλήσουν στοιχεία τα οποία θα τα χρησιμοποιήσουν στη δική τους εικαστική ματιά. Πραγματοποιήθηκαν τρία δίωρα σεμινάρια και άλλα δύο δίωρα παρουσίασης των εργασιών των φοιτητών.

Το πρώτο σεμινάριο αφορούσε μια πρώτη ανάγνωση στο κινηματογραφικό φάσμα και σαν στόχο είχε την κατανόηση των διαφορετικών εργαλείων, από την πλευρά των φοιτητών και των διακριτών ορίων στην κινηματογραφική προσέγγιση, από τον φερμαλισμό στον ρεαλισμό. Μέσα από παραδείγματα οι φοιτητές κατανόησαν τον τρόπο που χρησιμοποιείται η κάμερα και οι τεχνικές του μοντάζ ανάλογα με το στυλ και την προσέγγιση του δημιουργού. Σαν εργασία δημιούργησαν ένα βίντεο με θέμα τον “καφέ” το οποίο το προσέγγισαν φερμαλιστικά και ρεαλιστικά. Βλέποντας έτσι στην πράξη τις διαφορές στη φόρμα και στην προσέγγιση ανάλογα με το είδος.

Τα επόμενα δύο σεμινάρια αφορούσαν το κομμάτι της ανάπτυξης χαρακτήρων στο σενάριο. Αναλύθηκαν τεχνικές σεναρίου τόσο με βάση την Αριστοτελική προσέγγιση όσο και τη Μπρεχτική. Ο βασικός όμως κορμός του σεμιναρίου ήταν οι τεχνικές ανάπτυξης χαρακτήρων, οι οποίες αφορούσαν τόσο τη δημιουργία του ψυχολογικού προφίλ όσο και του ολοκληρωμένου παρελθόντος των χαρακτήρων. Ο λόγος που έγινε αυτή η προσέγγιση στους φοιτητές του Μεταπτυχιακού ήταν η γνωριμία με τη δημιουργία ολοκληρωμένων χαρακτήρων, οι οποίοι ακόμη και σε μια καταγραφή πιο θολή και όχι τόσο δομημένη όσο η κινηματογραφική, θα μπορούσαν να βελτιώσουν και να δομήσουν πολύ καλύτερα το τελικό έργο, δίνοντας έτσι στον ηθοποιό ή στον performer μια ολοκληρωμένη προσωπικότητα που μπορεί να χτίσει τη δράση του. Οι φοιτητές δημιούργησαν δύο ολοκληρωμένους και συγκρουσιακούς χαρακτήρες συμπληρώνοντας μια σειρά από ερωτηματολόγια τα οποία περιείχαν μια πλήρη καταγραφή του background story των χαρακτήρων και του ψυχολογικού τους προφίλ. Η βασική σχολή επιρροής ήταν ο Alexander Astruc και η προσέγγιση του μέσα από το μανιφέστο “Du Stylo à la caméra et de la caméra au stylo” (Sørenssen 2008). Στηριζόμενοι στην προσέγγιση της λεγόμενης κάμερα-στυλό, η οποία γράφει την αφήγηση χωρίς την χρήση σεναρίου και πένας, μέσω του αυτοσχεδιασμού, εισέρχεται το κομμάτι της δημιουργίας ολοκληρωμένων χαρακτήρων με τους οποίους οι ηθοποιοί ή οι performer μπορούν να χτίσουν το έργο τους και να αντιδράσουν ανάλογα στην ίδια την καλλιτεχνική δημιουργία.

Συμπερασματικά οι φοιτητές του μεταπτυχιακού προγράμματος σπουδών δημιούργησαν με μια πολύ ενδιαφέρουσα προσέγγιση, η οποία ήταν μια μίξη του δικού τους εικαστικού background και της γνωριμίας της κινηματογραφικής γλώσσας, μια σειρά από βίντεο και χαρακτήρες οι οποίοι τους βοήθησαν να προχωρήσουν στο επόμενο στάδιο του μαθήματος και τη γνωριμία τους με μια διαφορετική προσέγγιση στην τέχνη, βάζοντας έτσι ένα ακόμη σκαλοπάτι στον τελικό στόχο του μαθήματος ο οποίος ήταν η προσέγγιση του φόβου μέσα από διαφορετικές ματιές στην τέχνη.

ΦΟΒΟΣ ΚΑΙ ΤΑΜΠΟΥ ΣΤΗΝ ΔΥΤΙΚΗ ΕΙΚΟΝΟΓΡΑΦΙΑ ΚΑΙ ΣΤΗΝ PERFORMANCE ART

Από την εμφάνισή της η κοινωνία των ανθρώπων¹ χρειάστηκε μια “γλώσσα”, αναγνωρίσιμη από όλους, για την αφήγηση των παραδόσεων και για να μεταφέρονται μύθοι και θρύλοι σε σχέση με την ύπαρξη του είδους (Hauser 1951). Η εικόνα είναι η πρώτη αλφάβητος/γλώσσα που αφήνει κάτι σταθερό στο πέρασμα του χρόνου πολύ νωρίτερα από τη γραφή, και η οποία αφηγείται την καθημερινή πραγματικότητα, τις πεποιθήσεις, τις επιθυμίες και τους φόβους του ανθρώπινου είδους. Διασχίζοντας ιστορικές εποχές και διαφορετικές κουλτούρες, διανύσαμε μια διαδρομή εικόνων και πληροφοριών που δηλώνουν την εξέλιξη της εικαστικής γλώσσας γύρω από τις θεματικές που χαρακτηρίζουν κάθε πολιτισμό και κάθε κοινωνία. Ανάμεσα στις διαφορετικές θεματικές, σταθερές είναι ο φόβος, το μυστήριο και τα ταμπού. Αυτές δεν αποκαλύπτονται πάντα με τρόπο ευθύ και ξεκάθαρο. Αντιθέτως, μπορούμε να πούμε ότι μόνο στη δική μας εποχή οι εικόνες εξέφρασαν με τόση ευθύτητα, τόσο ρεαλιστικά το φόβο, τον τρόμο και την παραβίαση των ταμπού. Γενικά πράγματι οι εικόνες όλων των εποχών που προηγήθηκαν της μοντέρνας και της σύγχρονης, αντιπροσώπευσαν με τρόπο έμμεσο και καλυμμένο την παρουσία του φόβου τοποθετώντας την σε ένα σύνθετο πλαίσιο παραστάσεων. Οι παραστάσεις αυτές ήταν περισσότερο συμβολικές και προορισμένες να επεξεργαστούν, ακόμα και να εξορκίσουν τους φόβους, το θάνατο, το μυστήριο και ό,τιδήποτε βρίσκεται πίσω από ένα αξεπέραστο όριο που συμβολίζεται από το ταμπού.

Σε αυτή τη διαδρομή είδαμε ότι ήδη από το Μεσαίωνα ανακαλύπτεται ένας διαφορετικός τύπος καλλιτέχνη που εναντιώνεται στους κανόνες της καλλιτεχνικής αναπαράστασης της εποχής του και προσπαθεί να εισάγει μια γλώσσα πιο προσιτή σε όλους και λιγότερο ελιπίστικη. Αυτό θα οδηγήσει στην παρουσίαση και επεξεργασία των θεμάτων, όπως ο πόνος και ο θάνατος, κυρίως μέσα από την χριστιανική εικονογραφία. Το ίδιο θα κάνουν οι καλλιτέχνες όλων των επόμενων εποχών προσαρμόζοντας τις εκφραστικές ανάγκες τους στην εικαστική γλώσσα της εποχής τους, υπερβαίνοντας σταδιακά, και τελικά ξεπερνώντας την θρησκευτική εικονογραφία, χριστιανική, παγανιστική ή κλασική.

Από τον Giotto στον Μιχαήλ Άγγελο, στον Καραβάτζιο, στον Γκόγια, από τις αβανγκάρντ του 1900 μέχρι τις μέρες μας βλέπουμε πώς ο καλλιτέχνης απομακρύνεται από το ρόλο του εκφραστικού μέσου μίας ελίτ υιοθετώντας αντιλήψεις και ανάγκες που πλησιάζουν όλο και περισσότερο στην πραγματική ζωή, σε έναν συνεχή διάλογο/σύγκρουση με τη πολιτική, θρησκευτική, οικονομική ή και πολιτιστική εξουσία με την οποία σχετίζεται. Με την εισαγωγή των νέων μέσων όπως είναι η φωτογραφία και ο κινηματογράφος, η επικοινωνιακή, η

¹ Ο Hauser θεωρεί ότι ήδη στις προϊστορικές κοινότητες υπήρχε ένας συγκεκριμένος ρόλος παρόμοιος με εκείνον του καλλιτέχνη, ο οποίος εξελίχθηκε σύμφωνα με τις ανάγκες της ίδιας της κοινότητας.

εκπαιδευτική και η πειστική δύναμη των εικόνων γίνεται τεράστια και χρήσιμη σε κάθε τύπο καθεστώτος, σπρώχνοντας τους καλλιτέχνες σε εναλλακτικές μορφές έκφρασης, λιγότερο φιλτραρισμένες. Ως εκ τούτου μπορούμε να πάρουμε ως παράδειγμα τις μεταξοτυπίες του Γουόρχολ, που φέρνει στην γκαλερί τόσο τις αναπαραστάσεις κοινών καταναλωτικών προϊόντων, όσο και στοιχείων κατευθείαν συνδεδεμένων με τον θάνατο όπως τα θύματα τροχαίων ατυχημάτων, την ηλεκτρική καρέκλα ή το κρανίο, δίνοντας έτσι την ιδέα του πως πραγματοποιείται η επεξεργασία του φόβου, του ταμπού ή και του ίδιου του θανάτου, με μια παραδοχή των συμβόλων του ή και με την ίδια την τεκμηρίωση ενός πραγματικού γεγονότος. Αυτή η διαδρομή μας οδήγησε στο τέλος να αναλύσουμε το φαινόμενο της Performance Art. Σήμερα οι εικόνες και οι πληροφορίες επηρεάζουν ευρέως τη φυσική, την ψυχολογική, τη συναισθηματική, την αισθητική εμπειρία της πραγματικότητας αλλά και της φαντασίας και του ασυνείδητου. Έτσι η Performance Art που βασίζεται στη χρήση του σώματος του καλλιτέχνη, επαναπροσδιορίζει μια σωματική κοινωνικότητα και μια κοινωνική σωματικότητα ως εναλλακτική ως προς το εικονικό πεδίο των social media.

Αυτό μας οδήγησε επίσης να αναλύσουμε το πεδίο της εικονικής πραγματικότητας ως κάτι που προέρχεται από τον δημόσιο χώρο της “πόλης” και να εξερευνήσουμε πολύπλευρα την ιδέα του σώματος και του “ανείκειν” στην πόλη. Έτσι λοιπόν θεωρήθηκε σημαντικό να ξεκινήσουμε από τη δομή του αρχαίου ελληνικού θεάτρου και της αρχαίας αγοράς ως παράδειγμα δημόσιου χώρου και σημείου αναφοράς για μια ανάλυση της ψυχοφυσικής σχέσης ανάμεσα στο άτομο και την κοινότητα έτσι ώστε να εμβαθύνουμε στη σχέση μεταξύ επεξεργασίας έκφρασης του φόβου και των ταμπού και της Performance Art.

Προσέγγιση στο Μεταπτυχιακό από την πλευρά της Performance art

Στο Μεταπτυχιακό Πρόγραμμα του Τμήματος Τεχνών Ήχου και Εικόνας του Ιονίου Πανεπιστημίου, “Οπτικοακουστικές Τέχνες στην Ψηφιακή Εποχή”, πραγματοποιήθηκε μια σειρά σεμιναρίων με αντικείμενο την Performance Art υπό τον τίτλο “*Μες στον καθρέφτη και τι βρήκε η Αλίκη εκεί*”². Σκοπός αυτών των εργαστηρίων ήταν η γνωριμία των φοιτητών του τμήματος με την τέχνη της Performance και το άνοιγμα μιας πιο δομημένης φόρμας στην καλλιτεχνική δημιουργία, από την οποία θα μπορούσαν να αντλήσουν στοιχεία τα οποία θα τα χρησιμοποιήσουν στη δική τους εικαστική ματιά. Αναλύσαμε την εικόνα ως δοχείο περιεχομένων για το άτομο και την κοινότητα από την αρχή της δημιουργίας της κοινωνίας μέχρι τις μέρες μας, λαμβάνοντας υπόψιν μας τις σχέσεις ανάμεσα στις ατομικές και κοινωνικές αντιλήψεις, τις σχέσεις ανάμεσα

² *Μες στον καθρέφτη και τι βρήκε η Αλίκη εκεί* (Through the Looking-Glass, and What Alice Found There) είναι αγγλικό μυθιστόρημα του 1871, που γράφτηκε από τον Λιούις Κάρολ, και από το οποίο εμπνεύστηκε τον τίτλο αυτής της σειράς μαθημάτων πάνω στην performance art.

στον καλλιτέχνη και το πολιτικό, οικονομικό και θρησκευτικό καθεστώς, ανάμεσα στην πολιτισμική ηγεμονία και την περιφέρεια, ανάμεσα στο σώμα και το χώρο σε διαφορετικές εκδοχές. Για να μελετήσουμε τον τρόπο με τον οποίο σχετίζεται η Performance Art με τον φόβο και το ταμπού, ερευνήσαμε τη δραστηριότητα διαφόρων καλλιτεχνών, τόσο προηγούμενων εποχών όσο και σύγχρονων, με διαφορετική καλλιτεχνική και πολιτισμική προέλευση, συνδέοντας το είδος αυτό με άλλες μορφές τέχνης καθώς και επιστημονικούς τομείς διευρύνοντας τον ορίζοντά του σε πεδίο ανθρωπολογικό και φιλοσοφικό. Η αντίδραση στο ερέθισμα ήταν θετική και συμμετοχική στο διάλογο, προσφέροντας τη δυνατότητα να προχωρήσουμε την έρευνά μας σε διαφορετικές κατευθύνσεις, πιο κοντά στα ενδιαφέροντα των φοιτητών.

ΣΥΜΠΕΡΑΣΜΑΤΑ

Συμπερασματικά και απαντώντας στα ερευνητικά ερωτήματα που τέθηκαν στην αρχή της ανακοίνωσης. Ο φόβος στις εικαστικές τέχνες και στον κινηματογράφο για κάποιους μπορεί να αποτελεί ταμπού και για κάποιους άλλους αντικείμενο έρευνας και δημιουργίας. Οι τρεις διαφορετικές προσεγγίσεις της διδακτικής του φόβου που αναλύθηκαν παραπάνω αποτέλεσαν ένα όχημα ώστε να εξερευνηθεί ο φόβος σαν θεματική μέσα από διαφορετικές προσεγγίσεις της τέχνης. Οι φοιτητές εξοπλισμένοι πλέον με όλα τα εργαλεία που διδάχθηκαν προσέγγισαν το θέμα από μια πολυσύνθετη σκοπιά, η οποία έδωσε τροφή για την παρούσα ανακοίνωση και την περαιτέρω έρευνα του ζητήματος του φόβου στην τέχνη. Ως εμπέδωση σε επίπεδο πρακτικής των σεμιναρίων, πραγματοποιήθηκε performance στο Μέγαρο Μουσικής Αθηνών, σε συνεργασία με μερικούς από τους φοιτητές στο πλαίσιο του 11ου Φεστιβάλ Οπτικοακουστικών Τεχνών, προσφέροντας έτσι μια επιπλέον ευκαιρία εμπάθουσας της εκπαιδευτικής τους διαδρομής.

ΒΙΒΛΙΟΓΡΑΦΙΑ

- Gsellmann, Peter (1994), *“Wenn die Stars zum Zuge kommen”*, ZUG: Für Menschen unterwegs.
- Hellmuth, Röblier (1955), *‘Sozialgeschichte der Kunst und Literatur Arnold Hauser’*, *Zeitschrift Für Religions- Und Geistesgeschichte..*
- Kawin, Bruce (2012), *Horror And The Horror Film*, London; New York: Anthem Press.
- Lee Mock, Erin. (2015), ‘Where No One Can Hear You Scream: Alfred Hitchcock Brings Terror Back Into the Home . . . Where It Belongs’, *Interdisciplinary Humanities*, 32, 1, pp. 66-78, Academic Search Complete, EBSCOhost, viewed 26 August 2017.
- Loiperdinger, Martin. (2004). ‘LUMIÈRE’S ARRIVAL OF THE TRAIN’. Moving Image (15323978), 4(1), 89-118, Academic Search Complete, EBSCOhost, viewed 26 August 2017.

- Reyes, Xavier Aldana (2015), 'Reel Evil: A Critical Reassessment of Found Footage Horror', *Gothic Studies*, 17, 2, pp. 122-136, MLA International Bibliography, *EBSCOhost*, viewed 26 August 2017.
- Sørensen, Bjørn (2008), 'Digital video and Alexandre Astruc's caméra-stylo: the new avant-garde in documentary realized?', *Studies In Documentary Film*, 2, 1, pp. 47- 59, Film & Television Literature Index with Full Text, *EBSCOhost*, viewed 26 August 2017.
- Virilio, Paul (2006), *Art and fear*, New York: Continuum.

ABOUT THE AUTHORS

Konstantinos Tiligadis is Assistant Professor at Ionian University in the Department of Audio & Visual Arts. Born in Athens in 1967, he studied painting under N. Kessanlis and scenography under G. Ziakas at the Athens School of Fine Arts (1990-99). With a Greek state scholarship (1994-95) he attended painting, sculpture, model in motion and photography at the Academy of Fine Arts in Seville, Spain. He got his MA in Digital Arts from the Athens School of Fine Arts (2000-03). His work has been exhibited in several venues and art festivals and he was awarded the 1st prize for Olympic Truce Through Painting (2004) in Damaskus, Syria. His work is part of private collections, museums in Greece and abroad. He has collaborated with the Eugenides Foundation (Planetarium) for the making of a 3D film in the framework of the Cultural Olympiad (2004) and he has participated in many conferences and research projects. He taught at the undergraduate program of the Athens School of Fine Arts (2003-2009), at the postgraduate program Digital Arts (2006) and at the Technical Educational Institute of Athens (2007) at the Department of Graphic Design. In 2012, he was appointed Assistant Professor in the Department of Audio & Visual Arts, Ionian University, Greece.

Email: gustil@ionio.gr

Website: <http://avarts.ionio.gr/en/department/professors-lecturers/332-tiligadis/>

Iakovos Panagopoulos is a PhD Candidate in the University of Central Lancashire and a Scientific Collaborator at the InArts Lab. Born in Corfu and graduated at the Department of Audio & Visual Arts of the Ionian University Greece, he is a Greek filmmaker and researcher particularly interested in avant-garde and modernist cinema. He worked two years in television and as a freelancer videographer. After he moved to the UK, to do his Master in Cinematography for Film and Television at Bournemouth University graduated in 2016. He is now doing his PhD research at the University of Central Lancashire. His area of studies is Greek cinema and he is focusing on the work of Theo Angelopoulos. His topic is "Revisiting Theo Angelopoulos films through the historical/political aspects of civil and post civil war trauma in his coffee shop scenes and his contribution to contemporary Greek cinema." Iakovos is

teaching in seminars as a visiting lecturer in Greece and the UK. He directed his first feature documentary in 2016 and he created more than a dozen short films either as a cinematographer or as a director. His films got selected in many international festival and won few of them and screened in the UK and Greek the T.V.. He is now writing a script for his first feature film.

Email: iakovospanagopoulos@yahoo.co.uk.

Website: www.iakovospanagopoulos.com

Francesco Kiàis, artist, Associate Curator at Venice International Performance Art Week, Collaborating as a teacher and theoretician at different educational programs, Creator and co-founder of the [MIND THE] G.A.P. - Gathering Around Performance. Francesco Kiàis is an artist, an independent art writer and curator. He is member of the curatorial board of the Venice International Performance Art Week and collaborates with different educational programs, both as a theoretician and as an artist. He recently created and co-founded a platform based in Athens and dedicated to performance art, the [MIND THE] G.A.P.- Gathering Around Performance. Currently he is holding a series of lectures on Art Performance at the Ionian University, Department of Audio and Visual Arts, as a visiting lecturer. He holds the recognition of his Graduate Diploma (Fine Arts in Venice) obtained at the School of Fine Arts in Athens, where he attended the courses of Didactic, Pedagogy, and Psychology of pedagogy. Further, he holds the Proficiency of Greek language and history. Previously he obtained a degree in 'Sound and video design' at the Cimdata - Academy of digital media, Berlin, thus enriching his knowledge in the field of applied visual art.

Email: francesco.@hotmail.com

Website: <http://www.francesco.com>

MARIA ATHANASEKOU
University of the Aegean, Greece

Art, Neuroscience and prints- The case of Susan Aldwarth

ABSTRACT

Science and art have been impregnating and borrowing from each other for ever. Nevertheless, the modern ways in which art is inspired by science could probably be characterised as extreme, in the sense that they step on the expected and use new and often controversial means. Brushes, pencils, scalpels are being substituted with state of the art technologies, interactive media and robotic constructions, with bacteria (characteristic is the case of bioartist Anna Dumitriu), bodily fluids acquired following medical practices (one such case form Marc Quinn's 'blood' sculptures), while the very human skin can be raw material for the creation of art, with the contribution of technology (Aziz + Cucher) or not (Wim Delvoye created a tattoo on the back of the musician Tim Steiner, which was sold by the gallery representing the artist, to a collector. After his death the musician – a kind of living canvas- will be skinned and undergo the process of tanning, his skin with the tattoo on will be framed but till then he will have to pose at the gallery or be 'exhibited' three times a year under contract as a living work of art). Nothing can surprise modern art lovers, since they have seen all sorts of media to be used, rejected, be reborn and be baptized Art. The human brain is one of the last sacrosanct taboos, so far banned from art, to be accessed by Susan Aldworth. Its functions have already been documented and even substituted as art, and so have its photographic images or videos. The very material of the brain though, the tissue, is used to make prints for the first time. The procedure is done through the cooperation of the Hammersmith Hospital and its Brain Bank where Parkinson's is researched.

Transience, identity, conscience, death, life, mental illness, the sense of the self, are some of the issues that interest the artist. Having a background in Philosophy, she studied Engraving and today she is following a complex route including academic teaching, scientific research and artistic creation. As an artist in residence at the Newcastle Institute of Neuroscience she can combine the latest technological developments with art and also look into the various and numerous personal, medical and scientific narratives around human identity and the finite self. Following in the tradition of Leonardo da Vinci she studies the anatomy of the brain, the geography and architecture of its landscape,

documenting the daedalic routes of its vessels, arteries and cells. This singular practice takes place through engravings by printing straight from the brain. The artist, for the first time in the history of art, uses the human brain in such a way as to create a postmodern type of memento mori, a kind of portraits of the brain. She has also worked with patients suffering from schizophrenia, epilepsy, though medical technology is just an excuse for her to talk about the great necessity to understand and accept our fragile self, to accept the ephemeron of our human dimension which becomes, at the same time, eternal and holy through art.

KEYWORDS

Art, Neuroscience, engravings, medical technology, prints.

ΕΙΣΑΓΩΓΗ

Η Susan Aldworth είναι μια πειραματική χαράκτρια και δημιουργός ταινιών μικρού μήκους με αναφορά στο έργο της, που διερευνά την ανθρώπινη ταυτότητα, τόσο στην Νευροεπιστήμη όσο και στη Φιλοσοφία. Γεννήθηκε το 1955, σπούδασε Φιλοσοφία στο Πανεπιστήμιο του Νότινχαμ και Χαρακτική στο Πανεπιστήμιο του Λονδίνου. Έργα της βρίσκονται σε πολλές σημαντικές συλλογές, όπως του V&A, του Βρετανικού Μουσείου κ.ά. Ακολουθεί μια σύνθετη διαδρομή που περιλαμβάνει ακαδημαϊκή διδασκαλία, επιστημονική έρευνα και καλλιτεχνική δημιουργία. Ως φιλοξενούμενη καλλιτέχνης στο Ινστιτούτο Νευροεπιστήμης του Newcastle έχει τη δυνατότητα να συνδυάζει στο έργο της τις τελευταίες τεχνολογικές εξελίξεις μαζί με την τέχνη και να εξερευνά τις ποικίλες και άπειρες προσωπικές, ιατρικές και επιστημονικές αφηγήσεις γύρω από την ανθρώπινη ταυτότητα και το πεπερασμένο του εαυτού. Ζει και εργάζεται στο Λονδίνο και συνεργάζεται με το Πανεπιστήμιο του York από το 2014.

Η προσωπική εμπειρία της καλλιτέχνης πυροδότησε το ενδιαφέρον της να διερευνήσει την ταυτότητα του ανθρώπου, την ουσία της ύπαρξης του, ποιος είναι πραγματικά και τι επηρεάζει τις επιλογές του. Της προέκυψε το φιλοσοφικό ερώτημα αν όλα καθορίζονται από τον εγκέφαλο. «Το 1999 λιποθύμησα εξ' αιτίας ενός υποψιαζόμενου ανευρύσματος στον εγκέφαλο και βρέθηκα στο χειρουργείο να κοιτάζω, σε πραγματικό χρόνο, στην οθόνη τον εγκέφαλο μου. Και ξαφνικά βρέθηκα αντιμέτωπη με το γεγονός ότι όλη μου η προσωπικότητα, όλο μου το είναι εμπεριέχονταν στον εγκέφαλό μου. Και ήταν σαν το απόλυτο φιλοσοφικό αίνιγμα για μένα: Ποια ήμουν και ποιά ήταν η σχέση μεταξύ του εγκεφάλου μου και του εαυτού μου; Κάτι που χαρακτηρίζει τα εγκεφαλογραφήματα είναι η απίστευτη ομορφιά. Μοιάζουν με κινέζικα χαρακτηριστικά δέντρων και συνειδητοποιείς ότι ο φυσικός κόσμος που σε περιβάλλει, τα δέντρα, ό,τι αναπτύσσεται, είναι ακριβώς το ίδιο τοπίο με αυτό που έχεις στον εγκέφαλο ή το σώμα σου. Όταν ήμουν καλύτερα, επικοινωνήσα με τον χειρουργό που μου είχε κάνει την τομογραφία και του ζήτησα να συνεργαστώ μαζί του. Τότε

μου κατέστη σαφές, μέσα σε λίγους μήνες, ότι το θέμα της δουλειάς μου ήταν η σχέση ανάμεσα στον εαυτό και τον εγκέφαλο ως όργανο» .

Μέσα από τις περιοχές του εγκεφάλου, τις συνάψεις και τον ιστό του, τη χημεία και τη «σωματικότητα» του, η καλλιτέχνης αναζητά την ερμηνεία του τι τελικά σημαίνει, τι είναι να είσαι άνθρωπος. Μελετάει και αναρωτιέται για τον εγκέφαλο από πολλές διαφορετικές γωνίες: Ιατρική, Νευροεπιστήμη, Ψυχολογία, από την πλευρά της προσωπικότητας, την καλλιτεχνική, μελετάει το υπέροχο αυτό όργανο του σώματός μας. Παροδικότητα, ταυτότητα, συνείδηση, θάνατος, ζωή, ψυχική ασθένεια, η αίσθηση και έννοια του εαυτού, είναι μερικά από τα θέματα που την ενδιαφέρουν. Στα χνάρια του Λεονάρντο ντα Βίντσι μελετάει την ανατομία του εγκεφάλου, τη γεωγραφία και την αρχιτεκτονική του τοπίου του, αποτυπώνοντας τις δαιδαλώδεις διαδρομές των συζυγιών, των αγγείων, των αρτηριών και των βασικών του πυρήνων. Η ιδιόμορφη αυτή πρακτική γίνεται μέσω χαρακτηριστικών, τυπώνοντας απευθείας από τον ανθρώπινο εγκέφαλο, δίχως τη μεσολάβηση σκίτσου.

Η καλλιτέχνης, για πρώτη φορά στην ιστορία της τέχνης, μετέρχεται του ανθρώπινου εγκεφάλου δημιουργώντας μια νέα κατηγορία μεταμοντέρνου *memento mori*, δημιουργώντας ιδιόμορφα «πορτρέτα» που μας μεταφέρουν στις διαδρομές του μυαλού και της ψυχής που νοσεί. Τυπώνει από εγκεφάλους ανθρώπων που δώρισαν αυτό το όργανο του σώματός τους στην Επιστήμη, ανθρώπους που έπασχαν από Αλτσχάιμερ. Επίσης, έχει συνεργαστεί με ασθενείς που έπασχαν από σχιζοφρένεια, από επιληψία, ενώ η ιατρική τεχνολογία είναι μόνο η αφορμή για να μας μιλήσει για την επιτακτική ανάγκη να κατανοήσουμε και να αποδεχτούμε την εύθραυστη πλευρά μας, να παραδεχτούμε το εφήμερο της θνητής μας διάστασης, που γίνεται παράλληλα αιώνιο και καθαγιασμένο μέσα από την τέχνη.

Μέχρι σήμερα το ενδιαφέρον είχε εστιαστεί στον τρόπο που επιδρά η τέχνη στον εγκέφαλο και όχι στον εγκέφαλο ως δυνητικό αντικείμενο τέχνης. Η καλλιτέχνης καταδύεται στα αρχεία της ζωής των ασθενών που έχουν δωρίσει τους εγκεφάλους τους στην Επιστήμη και τυπώνει το παρελθόν τους ή το αποτύπωμα των ιχνών των εμπειριών τους δίνοντας τους εικόνα.

Ο Μπόρχες γράφει στον Δημιουργό: Κάποιος άνθρωπος βάζει σκοπό της ζωής του να ζωγραφίσει τον κόσμο. Χρόνια ολόκληρα γεμίζει μια επιφάνεια με επαρχίες, βασιλεια, βουνά, κόλπους καράβια, νησιά, ψάρια, σπίτια, εργαλεία, άστρα, άλογα και ανθρώπους. Λίγο πριν πεθάνει ανακαλύπτει ότι αυτός ο υπομονετικός λαβύρινθος των γραμμών σχηματίζει την αυτοπροσωπογραφία του (Μπόρχες, 1985). Τα χαρακτηριστικά της Aldworth με τις λεπτές γραμμές και τις διακλαδώσεις τους, με το τοπίο που σκιαγραφούν, το τοπίο του μυαλού, είναι τα πιο αυθεντικά πορτρέτα των δωρητών των εγκεφάλων από τους οποίους τυπώνει, μιας και εκεί βρίσκεται ο σκληρός δίσκος της ύπαρξής μας.

Ο ΕΓΚΕΦΑΛΟΣ

Ο εγκέφαλος αποτελεί το πιο σημαντικό και πιο ευμέγεθες τμήμα του κεντρικού νευρικού συστήματος. Προφυλάσσεται εντός του κρανίου και περιβάλλεται από τρεις προστατευτικούς υμένες, τις μήνιγγες. Αποτελείται από δύο ημισφαίρια και από την κάτω επιφάνεια του εγκεφάλου εκφύονται οι εγκεφαλικές συζυγίες ή νεύρα και ξεκινά ο νωτιαίος μυελός. Η βάση του εγκεφαλικού κρανίου διαθέτει αντίστοιχα τμήματα για την δίοδο των κρανιακών νεύρων και του νωτιαίου μυελού, από όπου περνούν αγγεία για την αιμάτωση του εγκεφάλου. Η άνω και οι πλάγιες επιφάνειες του αποτελούν τον εγκεφαλικό φλοιό (PubMedHealth, 2016). Ο εγκέφαλος έχει βάρος 1300-1400 γραμμάρια στον άνδρα και 1200-1300 στην γυναίκα (Κατρίτση, 1985).

Η μελέτη του εγκεφάλου ξεκίνησε από το 3500 π.Χ, από τον Ιμχοτέπ, ο οποίος έκανε μια επιστημονική και όχι μαγική προσέγγιση για την ιατρική και την ασθένεια. Για τους Αιγύπτιους η έδρα της ψυχής ήταν η καρδιά και ο εγκέφαλος συχνά απορρίπτονταν κατά τη διάρκεια των ταφών, αντίθετα με τα άλλα όργανα που διατηρούνταν και σε πολλές περιπτώσεις λατρεύονταν. Για τους Έλληνες, ωστόσο, ο εγκέφαλος ήταν η έδρα της ψυχής (Finger, 2000). Ο φιλόσοφος Ντεκάρτ επικέντρωσε μεγάλο μέρος της πειραματικής του ανατομίας στον εγκέφαλο, ενώ υποστήριξε ότι η επίφυση ήταν η πραγματική έδρα της ψυχής.

Η Νευροεπιστήμη εστιάζει συνήθως στον εγκέφαλο και το πώς οι διεργασίες που συμβαίνουν σε αυτόν, επηρεάζουν τη συμπεριφορά και τις γνωστικές λειτουργίες του ανθρώπου. Μελετά το νευρικό σύστημα (Merriam-Webster Medical Dictionary) το οποίο είναι το τελειότερο των συστημάτων και χαρακτηρίζεται από μεγάλη ιδιαιτερότητα και πολυπλοκότητα, ενώ επίσης εξετάζει τι συμβαίνει όταν οι άνθρωποι παρουσιάζουν νευρολογικές, ψυχιατρικές ή και νευροεξελικτικές-νευροεκφυλιστικές εγκεφαλικές διαταραχές.

Ο Σεμπάστιαν Σονγκ (Prof. Sebastian Seung, Princeton Neuroscience Institute and Computer Science Department) χαρτογραφεί τον εγκέφαλο. Σε ένα βιβλίο του (Seung, 2012) υποστηρίζει ότι η ταυτότητα του κάθε ανθρώπου κατοικεί στις συνάψεις. Στο νευρικό σύστημα, η νευρική σύναψη είναι μια μικροσκοπική δομή που επιτρέπει σε έναν νευρώνα (νευρικό κύτταρο) να μεταδώσει ένα ηλεκτρικό ή χημικό σήμα σε έναν άλλο νευρώνα (Foster, 1879). Ο ανθρώπινος εγκέφαλος περιλαμβάνει 85 δισ. εγκεφαλικά κύτταρα και σε καθένα αντιστοιχούν έως και 10.000 συνδέσεις. Αν προσπαθούσε κανείς να αναπαραστήσει ολόκληρο τον χάρτη των συνάψεων σε αυτό το επίπεδο λεπτομέρειας, θα χρειαζόταν αποθηκευτικό χώρο ενός zettabyte, το οποίο ισούται με περίπου ένα τρισ. gigabytes ή, σύμφωνα με έναν υπολογισμό, με 75 δισ. i-Pads των 16 gb. «Σύμφωνα με τρέχουσες εκτιμήσεις, ο αριθμός των νευρώνων από τους οποίους αποτελείται ο εγκέφαλός μας ξεπερνά τα 100 δισεκατομμύρια (Bear, Connors & Paradiso 2001). Αυτές οι μυστηριώδεις πεταλούδες του νου, όπως ονόμαζε τους νευρώνες ο Ισπανός νευροβιολόγος Σαντιάγο Ραμόν υ Καχάλ, απαντούν σε διάφορα «μοντέλα». Ανάλογα με το σχήμα τους έχουν λάβει τα αντίστοιχα χαρακτηριστικά ονόματα: διπλή ανθοδέσμη, πολυέλιος, αλλά και

αστεροειδείς, πυραμιδοειδείς, δίπολοι...» (Ansermet F., Magistretti, 2016, p.40). Ο Δρ Σονγκ υποστηρίζει στο βιβλίο και την ομιλία του στο TED (Seung, 2010) πως ό,τι είμαστε βρίσκεται στη συνδεσμολογία¹ του νευρικού μας συστήματος, πως είμαστε η συνδεσμολογία του νευρικού μας συστήματος και επομένως, ο εγκέφαλος μας είναι ο «καθ' ύλην αρμόδιος» για την ψυχή και το σώμα μας, για την ύπαρξή μας (Kinsch, 2015).

Πριν από 2500 χρόνια, ο Ιπποκράτης είχε γράψει: «Ο άνθρωπος πρέπει να γνωρίζει ότι οι ηδονές, οι απολαύσεις, το γέλιο και η ευχαρίστηση, αλλά και οι λύπες, ο πόνος, η μελαγχολία και ο θρήνος δεν προέρχονται από πουθενά αλλού παρά μόνο από τον εγκέφαλο» (Ansermet, Magistretti, 2016, p.18).

Η επιστήμη και η τέχνη έχουν μια μακρά ιστορία αλληλοδανεισμού και αλληλογονιμοποίησης. Η Νευροεπιστήμη αδιάκοπα εμπνέει τους καλλιτέχνες που απασχολεί η έννοια και η αίσθηση του εαυτού. Εδώ επίσης εδράζεται κάθε πιθανή δυσλειτουργία του μυαλού, ένα εξίσου σημαντικό θέμα που απασχολεί την τέχνη. «Όπως ο εντομολόγος ψάχνει για πολύχρωμες πεταλούδες, έτσι και η δική μου προσοχή κυνηγά μέσα στο περιβάλλον της φαιάς ουσίας τα κομψά και λεπτοσχηματισμένα κύτταρα, αυτές τις μυστηριώδεις πεταλούδες της ψυχής, το φτερουγίσμα των οποίων μπορεί μια μέρα να μας αποκαλύψει τα μυστικά του νου» (Ansermet, Magistretti, 2016, p.40).

Παρατηρείται μια ταύτιση ενδιαφερόντων μεταξύ της τέχνης και της Νευροεπιστήμης, σε μεγάλο βαθμό, καθώς και οι δύο διερευνούν από διαφορετικές οδούς, τα κοινά θεμελιώδη, υπαρξιακά ερωτήματα: «Από πού ερχόμαστε; Τι είμαστε; Πού πάμε;», ερωτήματα στα οποία έβαλε μορφή και τα ενσάρκωσε ο Πολ Γκωγκέν στον ομότιπλο πίνακά του (Μουσείο Καλών Τεχνών της Βοστώνης, 1897). «Στο τέλος της ζωής του, ο Φρόυντ διατύπωσε την εξής παρατήρηση: Γνωρίζουμε δύο πράγματα σχετικά με ό,τι αποκαλούμε ψυχισμό (ή ψυχική ζωή): πρώτον, το σωματικό της όργανο, δηλαδή τον τόπο δράσης της, τον εγκέφαλο (ή το νευρικό σύστημα) και δεύτερον, τις συνειδητές μας πράξεις. Οτιδήποτε βρίσκεται μεταξύ αυτών των δύο άκρων μας είναι άγνωστο» (Freud, 1938, 1946/1949).

ΤΑ ΧΑΡΑΚΤΙΚΑ

Η πρώτη κομβική στιγμή για το έργο της καλλιτέχνιδας ήταν όταν είδε στην οθόνη σε πραγματικό χρόνο τη λειτουργία του εγκεφάλου της. Η δεύτερη ήταν όταν ως καλεσμένη στην Τράπεζα Εγκεφάλου για τη μελέτη της ασθένειας Πάρκινσον, του Νοσοκομείου του Hammersmith, για να παρακολουθήσει την ανατομία ενός εγκεφάλου, ζήτησε από τους γιατρούς να κρατήσει τον εγκέφαλο στα χέρια της.

¹ Η λέξη που χρησιμοποιείται στην ομιλία είναι το *connectome*. Εν συντομία, *connectome* είναι η πλήρης περιγραφή της δομικής συνδεσιμότητας (φυσική καλωδίωση) του νευρικού συστήματος ενός οργανισμού. Το πεδίο της επιστήμης που ασχολείται με τη χαρτογράφηση και ανάλυση των δεδομένων των νευρωνικών συνδέσεων ονομάζεται *connectomics*.

Αυτή ήταν μια μεταμορφωτική εμπειρία για την ίδια, καθώς για πρώτη φορά μετά από χρόνια εξερεύνησης και αναζήτησης περί ταυτότητας και εαυτού, μπορούσε να κρατήσει στα χέρια της το όργανο που εναλλακτικά θα μπορούσε να έχει όνομα και επίθετο, αυτό του κάθε ανθρώπου στον οποίο ανήκει. Η ίδια, ανακαλώντας εκείνη την εμπειρία, είπε ότι ποτέ δεν φανταζόταν πως θα ήταν τόσο ενστικτώδης η αντίδραση της σ' αυτό το «πράγμα». Συνδέθηκε μαζί του ως αντικείμενο και ως ενσάρκωση ενός πραγματικού ανθρώπου. Ως αντικείμενο της φάνηκε πολύ περίεργο, αναπάντεχα βαρύ και πολύ κρύο. Καθώς αντίκριζε φέτες του ανθρώπινου εγκέφαλου να είναι τοποθετημένες στον μεταλλικό δίσκο, της ήρθε η έμπνευση να κάνει χαρακτηριστικά, τυπώνοντας από τον εγκέφαλο.

Τα χαρακτηριστικά της είναι απόκοσμα, έχουν μια ποιότητα και μια αισθητική σχεδόν γοθική. Στην έκθεση της με τίτλο *Transience* (παροδικότητα- Απρίλης 2014: *Transience*, Blyth Gallery, Imperial College, London) ασχολήθηκε με την ψύχωση, την ψυχική ασθένεια και τη συνείδηση. Της δόθηκε το περιθώριο δύο ημερών και πάντα υπό την επίβλεψη ενός γιατρού από το προσωπικό της Τράπεζας Εγκεφάλου για τη μελέτη της ασθένειας Πάρκινσον, του Νοσοκομείου του Hammersmith.

Οι διατομές των φετών του εγκέφαλου τοποθετήθηκαν απευθείας πάνω στη μεταλλική πλάκα της χαλκογραφίας και συνεργάστηκαν με τη φυσική λιπαρότητα του ιστού και τη φορμαλδεΐδη στην οποία συντηρούνταν, αφήνοντας ένα λιπαρό, χημικό ίχνος. Ο εγκέφαλος αφαιρέθηκε μετά και η πλάκα βυθίστηκε στο οξύ για να σταθεροποιηθεί η εκτύπωση. Οι φέτες του ιστού δεν αλλοιώθηκαν από τη διαδικασία και επιστράφηκαν στην Τράπεζα Εγκεφάλου όπου θα χρησιμοποιηθούν για έρευνα. Το αποτέλεσμα της διαδικασίας είναι εκπληκτικό. Ο εγκέφαλος σχεδόν φωσφορίζει, χαρακτηρίζεται από μια ιδιαίτερη λάμψη και η γεωγραφία του θυμίζει σεληνιακό τοπίο. Η καλλιτέχνης έχει προηγούμενη εμπειρία με την ιατρική και την τεχνολογία, καθώς στην έκθεση «Reassembling the Self» (επανασυναρμολογώντας τον εαυτό) ερεύνησε τη Σχιζοφρένεια μέσα από μια σειρά λιθογραφιών και μιας ταινίας. Στην έκθεση «The Portrait Anatomised» (το πορτρέτο σε ανατομία), επίσης χρησιμοποίησε εικόνες από τομογραφίες και ηλεκτροεγκεφαλογραφήματα για να κάνει τα πορτρέτα τριών ατόμων με επιληψία. Η δημιουργία πορτρέτων είναι το ζητούμενο της καλλιτέχνης, όσο ιδιότυπα ή μη συμβατικά και αν είναι αυτά.

Αυτό που κάνει τα χαρακτηριστικά της τόσο συγκινητικά και δυνατά, είναι ότι λειτουργούν παράλληλα σε δύο διαστάσεις, ως αντικείμενα και ως αντισυμβατικά πορτρέτα ανθρώπων που έπασχαν από ασθένειες που εκφύλιζαν τον εγκέφαλό τους με ό,τι συνεπάγεται αυτό. Όσο και αν το τελικό αποτέλεσμα είναι «καλλιτεχνικό», τα χαρακτηριστικά έχουν εικαστική αξία, δεν παύει το μυαλό του θεατή να εγκλωβίζεται στην αλλόκοτη αίσθηση ότι είναι συνείδητος σε κάτι, για κάποιους, παραβιαστικό. Σαν να βρίσκεται μπροστά στο πειστήριο ενός αλλόκοσμου «όντος» που μοιάζει να ξεπήδησε από τις σελίδες νουβέλας τρόμου και σκοτεινής φαντασίας του Έντγκαρ Άλαν Πόε. Η ίδια η Aldworth θα μπορούσε κάλλιστα να ενταχθεί στο κίνημα του Ρομαντισμού και ενδεχομένως,

αν ζούσαν την ίδια περίοδο, θα ήταν καλή φίλη με τον William Blake, επίσης χαράκτη. Όσο και αν το τελικό αποτέλεσμα είναι «καλλιτεχνικό», δεν μπορεί το μυαλό να αποδράσει από τη σκέψη ότι αυτό που βλέπει είναι μια υπενθύμιση της παροδικότητας, του εφήμερου και τελικά του ίδιου του θανάτου και μαζί της ασθένειας. Τα τυπώματα της Aldworth σπάζουν το ταμπού της ιερότητας της ακεραιότητας του σώματος και το διαμελίζουν τελετουργικά, κόβοντας σε φέτες τον εγκέφαλο, αυτό το ιδιότυπο λείψανο (απομεινάρι), το σκηνώμα (βλ. αντίληψη ότι η ψυχή κατασκηνώνει, δηλαδή ενοικεί μέσα στο σώμα του ανθρώπου) τελικά της ίδιας της ζωής.

ΣΥΜΠΕΡΑΣΜΑ

Η επίγνωση της θνητότητας έχει διαχρονικά απασχολήσει τον άνθρωπο δημιουργώντας του την ανάγκη πότε να κατανοήσει και να συμφιλιωθεί με τη βεβαιότητα του θανάτου, πότε να ξορκίζει το άγχος και τον τρόπο που του δημιουργεί ή ακόμη και τον ίδιο τον θάνατο. Από την αρχαιότητα ακόμη έγραψε, μοιρολόγησε, τραγούδησε, σμίλεψε και ζωγράφισε τον θάνατο. Ο θάνατος προσωποποιήθηκε, απεικονίζεται ως όμορφος νέος άνδρας με ή χωρίς φτερά, ένας άνδρας άκαρδος και σκληρός σε αντίθεση με τον δίδυμο αδερφό του, Ύπνο, παιδιά της Νύχτας και του Ερέβους. Σε άλλες περιπτώσεις υπονοείται και δεν αναπαριστάται, χρησιμοποιούνται αλληγορίες και σύμβολα του.

Τα πορτρέτα της Susan Aldworth, αυτές οι «προσωπογραφίες», όσο αδόκιμος και αν είναι ο όρος, θα μπορούσαν να ενταχθούν στην εικονογραφία *memento mori* ή ακόμη και στην κατηγορία της «νεκρής φύσης». Πέρα από τον εγκέφαλο και το μυαλό των δωρητών, αποτελούν ένα αντιπροσωπευτικό δείγμα της ευφυΐας και του μυαλού της καλλιτέχνης επίσης, καθώς και της αφοσίωσής της στο μέσο της χαρακτικής, που αναγεννάται, τυπώνοντας απευθείας από το πολυπλοκότερο όργανο του ανθρώπινου σώματος και όχι μόνο από εικαστικές απεικονίσεις του. «Χαρακτική, τέχνη του σκαλίσματος, μετουσιωμένη από μυστήριο, πικάντικη τέχνη αλημεΐας και απόσταξης, τέχνη διαβολική που μοσχοβολά θειάφι και υδράργυρο, τέχνη που την υπηρετούν ισχυρά οξέα, τέχνη που την τροφοδοτούν αναβράζοντα άλατα, τέχνη άυλων αποσταγμάτων, τέχνη καυστική, μεταλλική, αντι-ακαδημαϊκή, τέχνη των ευγενών και ανδρείων στην καρδιά και τις αισθήσεις, τέχνη των “παλαβών”...». Με αυτές τις φράσεις ο Τζέιμς Ενσορ (1860 - 1949), ένας άλλος συνάδελφος της Aldworth, δηλώνει το 1835 την αγάπη του για τη χαρακτική. Τα χαρακτηριστικά της Aldworth μετουσιώνουν το μυστήριο ανοίγοντας πόρτες στο μυαλό και δίνοντάς μας τροφή για σκέψη, για μια βουτιά στον ωκεανό της ύπαρξης.

ΒΙΒΛΙΟΓΡΑΦΙΑ

Ansermet F., Magistretti P.,(2016). *Τα ίχνη της εμπειρίας*, Πανεπιστημιακές Εκδόσεις Κρήτης.

- Ariès, P., (1981) *The Hour of Our Death*, Knopf.
- Aldworth, S., (2013). *Susan Aldworth: The Portrait Anatomised*, Cassland Books.
- Aldworth, S., (2012). *Reassembling the Self: A Collection*, Cassland Books.
- Aldworth, S., (2008). *Scribing the Soul*, Cassland Books.
- Binski, P., (1996). *Medieval Death: Ritual and Representation*. Ithaca, NY: Cornell University Press.
- Coogan, R., (1970). 'Petrarch's "Trionfi" and the English Renaissance'. *Studies in Philology*, Vol. 67, No. 3 (Jul., 1970), pp. 306-327.
- Delumeau, J., (1990). *Sin and Fear: The Emergence of a Western Guilt Culture, 13th–18th Centuries*. New York: St. Martin's Press.
- Finger, S.,(2000). *Minds Behind the Brain: A History of the Pioneers and Their Discoveries*, Oxford University Press.
- Fitzharris, L.,. "Memento Mori, a photographic journey into the world of the dead". <https://thechirurgionsapprentice.com/2015/02/06/memento-mori-a-photographic-journey-into-the-world-of-the-dead/> Accessed 30/4/ 2017.
- Κατρίτση Ε.Δ., (1985). *Ανατομία Φυσιολογία*. Αθήνα: Ίδρυμα Ευγενίδου.
- Koudounaris, P., (2011). *The Empire of Death*, Thames and Hudson.
- Ludwig, A. I., (1996). *Graven Images: New England Stonecarving and Its Symbols, 1650–1815*. Middletown, CT: Wesleyan University Press.
- Menche N., (2012). *Biologie Anatomie Physiologie*, Urban & Fischer/ Elsevier.
- Merriam-Webster Medical Dictionary.
- Oxford English Dictionary, (2001) Third Edition.
- Pschyrembel, W.,(2014). *Klinisches Wörterbuch*. De Gruyter.
- Schmidt, R, Lang, F., Heckmann, M., (2011). *Physiologie des Menschen: mit Pathophysiologie*, Springer.
- Seung, S., (2012). *Connectome: How the Brain's Wiring Makes Us Who We Are* (1 ed.). Houghton Mifflin Harcourt Publishing Company.
- Sebastian Seung: I am my connectome. <https://www.youtube.com/watch?v=HA7GwKXfJB0>. Accessed: 28/3/2017.
- How does the brain work? <https://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0072486/>, Accessed: 28/3/2017.
- Susan Aldworth - The Portrait Anatomised. <https://www.youtube.com/watch?v=HaEgDICILik>, Accessed: 15/4/2017.
- Borges, The Maker. <https://www.docdroid.net/iz3p/borges-the-maker.pdf.html>, Accessed: 13/3/2017.
- Susan Aldworth's website. <https://susanaldworth.com/>, Accessed: 11/3/2017.
- National Portrait Gallery, 5 March 2013. Available at: <https://www.youtube.com/watch?v=HaEgDICILik>, Accessed: 15/4/2017.

ABOUT THE AUTHOR

Maria Athanasekou is an art historian. She likes telling art stories, to share and communicate through images. She believes that art has a lot of stories to tell, many of which, if not all, concern us or will at some future point of our lives, as long as the field of our existence broadens. She completed a PhD in art history at the School of Architecture of the National Technical University of, an MA in Renaissance Studies at the University of London, Birkbeck College and a BA in Archaeology and History of Art at the National University of Athens, School of Philosophy, Department of History and Archaeology. As a doctoral student she received the National Technical University of Athens Special Account for Research (E.L.K.E.) scholarship for three years. As a BA graduate student she received the Erasmus Programme (European Community Action Scheme for the Mobility of University Students) scholarship and the final year of her studies was attended at St. Patrick's College in Maynooth, Ireland. She has been teaching art history at the University of the Aegean and the University of Western Macedonia, at public and private institutions, as well as at the National Technical University, School of Architecture, the University of Athens-Plato Academy, Lifelong Learning Institutions etc. She has also delivered papers in a number of international conferences of art history which have been published.

Email: m_k_athanasekou@yahoo.com

Body ESC

bodyESC

exhibition

Gathering artworks, from diverse media, created by both Greek and international artists during different time periods, the intention of the exhibition Body Esc was to induce a brief reflection on the meaning of the body in the digital and biotechnological age. Body Esc is a reaction to Foucault's "medical gaze". A feedback on the post-human clinical perception of patients as cases, ripped of identity, of bodies as sets of organs, turned into a target for manipulation as any other natural resource. Acknowledging that, this failure to recognize the person beyond the body, confines and neutralizes the individual potential in the healing process, Body Esc is a subtle invitation to press the escape key. Organized within the framework of the 2nd International Interdisciplinary Conference "Taboo-Transgression-Transcendence in Art and Science", by the Ionian University, the exhibition was integrated in the program of the 11th Audiovisual Arts Festival and has taken place in the Municipal Gallery of Corfu (Ionian Islands – Greece, May 25 to June 4 2017).

Curating: Dalila Honorato, Assistant Professor in Aesthetics - Semiotics and Marina Papasotiriou, curator at the National Gallery of Art - Corfu Annex.

Design: Tania Tsiridou, adjunct instructor in Interactive & Audiovisual Arts.

Συγκεντρώνοντας καλλιτεχνικά έργα από ποικίλα μέσα, τα οποία έχουν δημιουργηθεί από Έλληνες και από διεθνείς καλλιτέχνες σε διάφορες περιόδους, η έκθεση Body Esc στόχο είχε να προκαλέσει έναν συνοπτικό στοχασμό πάνω στην έννοια του σώματος, κατά την ψηφιακή και βιοτεχνολογική εποχή. Body Esc είναι η αντίδραση στο κατά Φουκώ "ιατρικό βλέμμα". Μια ανάδραση στην μετα-ουμανιστική κλινική αντίληψη των ασθενών ως περιπτώσεων, στερημένων από ταυτότητα, των σωμάτων ως συνόλων οργάνων, μεταμορφωμένων σε αντικείμενο μεταχείρισης και εκμετάλλευσης, όπως συμβαίνει με κάθε άλλο φυσικό πόρο. Λαμβάνοντας υπόψη ότι αυτή η αποτυχία να αναγνωριστεί ο άνθρωπος πέρα από το σώμα του, περιορίζει και καθιστά ουδέτερη τη δυνατότητα του κάθε ατόμου ξεχωριστά να συμβάλει στη διαδικασία ίασης, η έκθεση Body Esc αποτελεί μια διακριτική πρόσκληση να πατήσουμε το πλήκτρο escape. Αποτελώντας μέρος του 2ου Διεθνούς Διεπιστημονικού Συνεδρίου "Ταμπού - Παράβαση - Υπέρβαση στην Τέχνη και την Επιστήμη", που διοργανώθηκε από το Ιόνιο Πανεπιστήμιο, η έκθεση αποτέλεσε μέρος του προγράμματος του 11ου Φεστιβάλ Οπτικοακουστικών Τεχνών και παρουσιάστηκε στη Δημοτική Πινακοθήκη της Κέρκυρας (Ιόνια Νησιά – Ελλάδα, 25 Μαΐου – 4 Ιουνίου 2017).

Επιμέλεια: Dalila Honorato, Επίκουρος Καθηγήτρια Αισθητικής – Σημειολογίας και Μαρίνα Παπασωτηρίου, επιμελήτρια Εθνικής Πινακοθήκης - Παραρτήματος Κέρκυρας.
Σχεδιασμός: Τάνια Τσιρίδου, διδάσκουσα Διαδραστικών & Οπτικοακουστικών Τεχνών.



Image I: Opening. Photo credits: Athanasios Tsingas and Evangelia Koumantsioti

ANDREW CARNIE
Southampton University, UK

A Change of Heart

ABSTRACT

In phenomenological research undertaken in Canada based around interviews with heart transplant recipients, the research team has found a discord in the reporting of the patients as to their wellbeing. In a hospital setting all seems to be well, but interviewed later, when there is not the same pressure to be grateful for what has happened, patients appear to be much more concerned about their mental wellbeing. Many seem to be traumatized by notions, real or imagined, of a sense of hybridity. The patients' sense of self seemingly becomes boundless. How do artists respond to these findings and create ways to convey the issues discovered by the research?

KEYWORDS

heart, transplant, hybrid body, donor, recipient, family, immune, boundary, wellbeing

INTRODUCTION

It is easy for people to carry on with what is seen as the norm, to accept beliefs passed down from others. To break these traditions and take a different standpoint is very difficult for many: to confront an orthodoxy takes guts. One of the most significant confrontations in medical practice was that undertaken by Vesalius in recalibrating the orthodoxy of Galen's anatomy of the human body. It seemed that for many other medics and anatomists, overturning Galen's teaching was seen as such a taboo that they ignored what they saw before their eyes during dissections or early operations.

In a strange way the 'anatomical studies' of Galen left us, as sentient beings in that time, as part--baboon, part-dog, part-oxen, part-man: a 'hybrid body'. We tend to have an understanding of 'our selves' from the information around us, particularly currently from science. Galen, c130AD to c.210AD, who learned from dissecting animals rather than the human cadaver, was the best known of the Roman physicians. He made analogies and made us amalgams for quite a period of time. Thanks to him we acquired a two-part jaw, and a connecting passage between the ventricles of the heart.

Galen further proposed 'holes' between the ventricles; as his theory that arteries from the left ventricle carried pure blood to the brain and lungs, while the right ventricle supplied lower organs like the stomach and kidneys, necessitated connections between the ventricles; so he 'found them'. Galen's authority was so ubiquitous that for some 1400 years subsequent anatomists said that they too had found these links.

Andreas Vesalius' disciplined approach to anatomy in Padua, Italy in the mid 1500's, with rigorous use of human dissections, overthrew the previous misconceptions and gave a far more accurate picture of the human body. Today we understand more of the body as an entity truer to its real form thanks to him, and he created a new climate in which anatomists trusted only their own observations and explored the body anew, creating a better picture. The work he did was laid out in the digest *Fabrica Vitae*, illustrated in the main by Jan Stephan Caulker.

In a modern hospital, when asked of their state of wellbeing when they return for examination in the clinic, heart transplant patients showed signs of being extremely well, appreciative of the effort and sacrifice that had made their continued life possible, Ross, H, et al (2010), However, anomalies to this belief showed up from time to time, reports from home suggested a different truth, but one that was suppressed; the Cartesian-type view prevailed: that switching the heart was simply like swapping the pump in a car. On the hunch that there was more to the anomalies and trying to look anew at the issues, researchers at the Toronto General Hospital, Process of Incorporating the Heart (PITH) research team, have interviewed transplant patients in their own homes, post-transplant, regarding their 'psychic' wellbeing. The results are interesting and diverge from the customary orthodoxy.

The findings suggest that all is not so well. Transplant patients subsequent to the operation often developed unexpected complications or failed to keep a grip of their sense of identity. The recipient's sense of self as a bounded and unique individual was disrupted through the transplant process; some suffered a sense of 'in-betweenness', a sense of 'hybridity'. The long-term purpose of the research study is to give better advice to patients so they can navigate psychologically the issues involved in such a traumatic procedure. Maybe also for all of us extrapolating from the study, questions of the status of the normative-self, the singular 'I' might be made; maybe a sense of self as more fluid and inter-corporeal is more useful. Are we all mere assemblages?

This text will endeavour to examine the study and discuss how artists working alongside and within the PITH research team used the data on the psycho-social wellbeing of the patients to develop new work for a series of ongoing exhibitions. The exhibition *Hybrid Bodies*, was work-shopped at YYZ, Toronto, and The Black Box, Concordia University, Montreal, before being exhibited fully at the Centre PHI, Montreal in 2014 and later at KKW, Leipzig in Germany in 2016. In October 2017 it will be exhibited at Gallery West, London.

SECTION TITLE: HOW IT BEGINS

What this text will try to do is to explore the background and the evidence that the research team has brought up, and look at how this has been made manifest in the art works that I in particular have developed. This will take an approach that will part fulfill but not be within strict academic terms. The danger is that if practitioners don't talk about the work in the way they see it, the truth does not emerge. There seems to be a taboo against believing in the visual: the 'word' always rules over the methodologies of artists, but all we can do is give truth to the materials, truth to ourselves, through our work. Getting at 'knowledge' through words is not enough. We know they are only limited. In this we do significantly need to re-empower ourselves.

The context for the involvement in the research and the making of the art work is my meeting with Prof Margrit Schildrick. The project started with a chance meeting, by me with Prof Margrit Schildrick, the sociologist philosopher, in Amsterdam in 2006. The day after Dr Richard Wingate and myself delivered a keynote talk on our work on dendritic form and the artwork Magic Forest for the Society for Literature, Science, and the Arts conference, a group of artists and scientists, all friendly colleagues found in the listings something interesting to engage with. Entering the talk, we found we were in the wrong lecture. I remained, all the others left quickly, deciding this was not what they wanted to hear.

As I caught snatches of the talk, on Cartesian philosophy, conjoined twins, and the bounded body; 'why should the body end at the skin?', and the mention of Donna Haraway this all excited me. Margrit Schildrick described in her brief but concise paper the issues that a small research team based in Toronto, Canada, were trying to unravel on the subject of hybridity, exemplified through heart transplant.

I was interested instantly, and engaged with the topic. It fitted my understanding of what my practice had been centred around for a number of years: how science, its ideas and imagery affect the way we see ourselves. As I heard of the worries some patients seemed to have about the effect of having another's heart inside them I was hooked. I stayed for the whole of the talk, and thoughts about the talk lingered in my mind over the following days of the conference. The final dinner for the SLSA gathering took place on a large moored boat on the Amstel Canal. I found myself wandering the deck; my close art science group had left with other work to do. Sitting contemplating the lapping water was Margit Schildrick. I had not seen her since her talk, I entered into a conversation, and soon she was asking me what I do and I was showing her images from a recent catalogue of work. After that, she asked me whether I would like to be involved in the research project.

They had a need to undertake some form of "knowledge transfer" for the grant. An initial pilot study had already indicated that recipients have a complex relationship to the provenance of their transplant hearts, and that many

experience unexpected and unexplained changes in their own sense of self, even to the extent of feeling that they host the continuing existence of the donor.

A few emails passed between us once we were back in our home cities and it was established that it would definitely be possible to be involved in the Toronto-based undertaking. A second British artist, Alexa Wright, was suggested to join in the knowledge transfer, and then to balance this aspect two Canadian artists were invited to participate, Ingrid Bachmann and Catharine Richardson.

So an artist team was formed and we joined forces with PITH, The Process of Incorporating the Transplanted Heart team, the research scientists led by medical director Dr Heather Ross, including: the philosopher Margrit Shildrick, the sociologist Dr Patricia McKeever, the psychologist, Dr Susan Abbey, Jennifer Poole a social scientist and two specialist heart nurses, Enza DeLuca, and Oliver Mauthner.

CONTEXT: THE HEART

The Heart has long been at the centre of both imagery and imagination in western culture, with immense personal significance. As one of the vital organs, the heart is identified as the centre of the entire body, the seat of life, or emotion, reason, will, intellect, purpose or even the mind. The heart is an emblematic symbol in many beliefs, signifying truth, conscience or moral courage in many faiths – the throne of God in Islamic and Judeo-Christian thought, the divine center, or atman, and the third eye of transcendent wisdom in Hinduism, the diamond of purity and essence of the Buddha; the Taoist center of understanding, the chest and heart is where we feel so much.

The heart seen in other ages, must have been the thing most ‘alive’ within us. The still beating heart is the only part of the body to continue to be active after death, be it for a short time, and must have been observed on the battlefield or at the gallows, where being hung, drawn and quartered was not unknown. So there is significance for it having these powerful representative powers, it is like the skull and bones representing death; the reason for this is that after burial this is the last remnant when all the soft tissue has gone. In this way it stands for what is there but left behind.

In socio-cultural terms the heart stands in for a range of inherently human attributes such as love, empathy, fear, guilt and so on. In short, the heart is perceived to be at the core of human selfhood, an organ very worthy of what Julia Kristeva (1982) terms ‘the clean and proper body’.

CONTEXT: THE HEART TRANSPLANT

What is the background context in which the pressures on the heart patients exists? What is the medical setting? What is the setting for which this artwork might be made? I will make work from the safety of the studio, a space to calmly

meditate on the world. The imagery I will produce is set against a more dramatic picture than the portrait of the transplant theatre.

Currently there are about 500,000 Canadians with Chronic Heart Failure, added to by a large number of new cases each year. Some 50,000 of this cohort have Severe Advanced Heart Failure.

With the progression towards this advanced heart failure stage, the mode of death in sufferers switches from dropping, sudden cardiac death, with increasing shortness of breath at rest, and at night, decreased blood pressure, depressed levels of consciousness, and ultimately the inability to remove fluids collecting in the lungs, in effect, to drowning.

Only about 180 transplants take place across the whole of Canada each year, though a further 80 VAD's, Ventricular Assist Devices, are implanted to give further release to this stark on-going situation. In all, then, there are 49,740 patients with advanced Heart Failure who have no life-saving therapeutic option.

With few positive outcomes, the gamble for a new heart is a very pressurized orbit. The claim for a new heart and life is high and no wonder the overwhelming response in the clinical setting is positive.

THEMES TO WORK ON

So, the research project was set up because of a sense of unease that everything was not perfect around the transplant ward; that there was gossip that the patients, though giving outwardly good signs to surgeons and the higher echelons of the transplant teams, were not all happy. So the project set out to see what some of this gossip was. The aim was to help patients navigate the predicament they found themselves in, with questions such as: Who should I be grateful to? Was the donor diseased? What is the value of a heart? Was it a good heart from a good person? Will the donor family contact me? How do I negotiate being on immunosuppressants for the rest of my life? These immunosuppressants, what are they for? Oh, are they to dampen the activity of an alien organ inside me? How do I incorporate the other, how do I deal with the other as Jean Luc Nancy said of his heart: the 'intruder'? What was it I read in that tabloid paper, that that other transplantee felt they had taken on new characteristics, those of the young film stunt man, who had died on set? How have I changed?

The normative, the perfect body, has long disappeared, to a site of a failing organ. Just one thing, but now the body is a much 'muckier place' than ever; a conflicted site of so many ideas. In short the boundaries of who the donor felt they had previously been, have been breached; they are no longer 'themselves'. Embodied selfhood is never unified, whole and complete, but always fissured as Nancy would say, Nancy, Jean-Luc, (2000), *L'Intrus*.

To look at the issues, a critical, visual phenomenological informed exploration of heart transplantation employing the ideas of Merleau-Ponty (1968), was set

up to look at the range of evidence. The team established interviews with donors outside of the hospital setting, normally in the patient's home, to gain material to analyse and draw conclusions from. The tapes were viewed multiple times, often in groups of six, seven or eight, with artists as part of these teams for visual and spoken evidence.

How do heart transplant recipients perceive their hearts, bodily integrity and personal identity as well as imagine and speak about their donors? How do these perceptions, thoughts and accounts change over time? Is there a relationship between these perceptions and physical/mental outcomes?

In effect—and despite any expectations of recovering oneself—the other is both incorporated within and irreducibly alien to that self. The embodied self is, then, inevitably transformed. The body is no longer one. As Luce Irigaray (1985) puts it, the body is: 'always at least double ... it is plural, more diversified, more multiple in its difference, more complex, subtler than is commonly imagined' - in an imaginary rather too narrowly focused on sameness. The other is present'. It is just this that Jean-Luc Nancy references in his seminal work *The Intruder* (The Intruder), where he talks about having suffered ill health and having received a new heart the difficulty of coming to terms with being 'other'.

Importantly even if there is no physiological effect from the transplanted heart, from press coverage, films and stories the weight of cultural commentary breaches the donor psychologically and it plays its part through psychological change, not necessarily structural, anatomical change.

ARISING ART WORKS

The video interviews with the transplant recipients revealed a rich source of feeling and emotion on the notions of embodiment and corporeality. This was gleaned from what the transplantees said and didn't say and what was equally signalled through their bodily gestures and their posture. The gist of these conversations conveyed, doubt, vulnerability, exposure, defensiveness, set against stoicism, resilience, fortitude, strength, and alterity. All these recorded qualities fed into the video work *Lacuna*, through the making process, along with medically orientated images of the exposed body and collective bodies as individual, cell and organ alike.

So, the art works were developed through exposure to all the ideas, all the material was absorbed and fed into the works through this embodied experience. The work has been made over many years, with the project having started back in 2007. Many drawings have been produced, lots of false starts for work, masses of material. I think I have produced 5 HD video works, one sound piece, two large drawings with plastic pockets 2m by 2.5m, masses of watercolours, prints etc. Here I would like to concentrate on two works that deal with some of the issues I have tried to tackle.

A Change of Heart

A High Definition video work projected onto a black voile screen six metres by two metres suspended 8 or so cm or from a large white wall in the YYZ space and repeats seamlessly every 16 minutes.

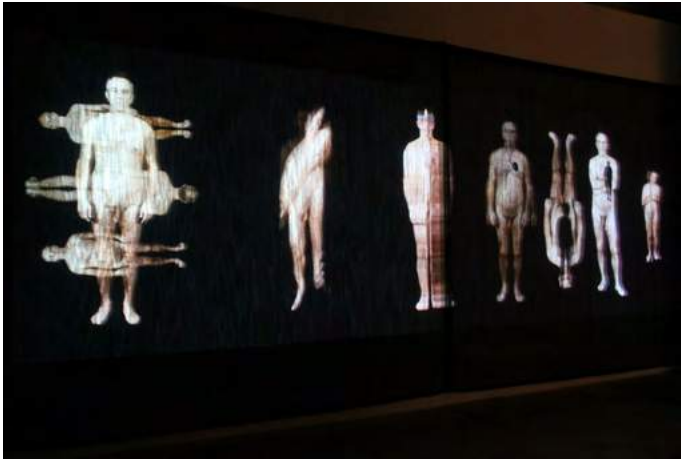


Image 1: A Change of Heart, 2012 video projection work, run time 15mins 59sec.

Detail. A large letter-box format projection work, displayed using two HD projectors synchronized using two HDBlade players, projected onto black voile screen 2.5m x 6m, suspended 7cm away from the wall. Exhibited at YYZ Gallery Toronto 2012, Black Box Concordia University Montreal and The City Space, Winchester 2013, PHI, part of DHC Montreal in 2014, then, at PHI, Montreal in 2014 and KKW Leipzig in 2016. Image courtesy of Andrew Carnie and GV Art, London.

For me the figures standing in a row, caryatid-like, might stand in for the patient post-operation. The figures are continually changing, moving, disappearing and reappearing, dissolving into something else. A figure, many figures, all the same 'one' person, come and go many times across the screen; the figure naked, vulnerable, is changing, always varying, always morphing into something else. Where is the constant being when everything is moving? Can you keep up with the changes? What is happening at that end of the screen? What is happening here?

Each figure's change is based on drawings made while listening over many days in Toronto to taped interviews of patients post-transplant; attending to complex stories of lives changed, listening to the analysis of social scientists as they mapped the interview sessions; what is heard, what is gestured, said by the body? Here it is, this is what I heard; change, flux, everything in a state of becoming, never, never static, never, never a bounded being. In my house everything comes and goes, in my house walls are permeable.

Sequences of photographs of standing naked models were taken based on the aforementioned drawings. These images became the starting point for the alterations made to them in Adobe Photoshop fed from ideas in the drawings. These sequences were then animated and the ideas amplified and expanded on in Adobe After Effects as they were edited into the finished video work to give more complex boundary defying sequences.



Image 2: A Change of Heart, 2012 video projection work, run time 15mins 59sec.
Detail. Image courtesy of Andrew Carnie and GV Art, London



Image 3: A Change of Heart, 2012 video projection work, run time 15mins 59sec.
Detail. Image courtesy of Andrew Carnie and GV Art, London

The piece is projected so the viewer finds it difficult to keep track of the fluctuating images across the large screen; the work instills a disorientation that is reminiscent of the experience of the recipient's uncertainty after the transplant, the doubts about the gender of the heart, the moral bearing of the donor. The long video screen is difficult to take in as a whole and changes at either end might escape the viewer's vision. Looking at one section of fluctuating images, one is suddenly aware of missing other modifications elsewhere. Watching the work is thus an unreal experience and the slowly developing work might capture the unease a patient might feel post-operatively; the disquiet that stems from questioning the momentous change that has befallen them.

The changes to the original images made in Photoshop sometimes hint at the presence of the donor, a shadow, a graduation there, a shade here, a character always or at least very often present in the mind of the recipient: responding to possible perceived internal changes, to the incorporated other and at least to the 'projection' of ideas that maybe have been seeded in the patient on the effects of heart transplantation from television and the news. So the figures are haunted by 'themselves', their own thoughts, troubled by the others, and possibly made uneasy by the spectre of the donor family.

The projection onto black voile suspended inches from the white background wall produces complex Moiré patterns, interference patterns whose continuous fluctuations in the projection give a further sense of shifting transformation to the work. The nakedness of the male images is proposed to give a sense of fragility, to the projected figure. The recipients of a transplant are vulnerable and in the 'sway' of nurses, to fulfil every need, to wash them, to feed them, to dress them and to look after every one of their needs; the patients surrender their bodies to the medical staff, to save their lives but putting them 'psychologically' in this exposed situation.

A Tender Heart



Image 4: A Tender Heart. Cast soap and black cotton rope, 2013.

Detail: Exhibited, PHI Montreal, Canada, 2014, and Zakynthos Library, Zakynthos, Greece, 2014, and then at KKW, Kunstkraftwerk, Leipzig in 2016. In Body Esc, Municipal Gallery, Corfu, Greece 201. Image courtesy of Andrew Carnie and GV Art London

The work A Tender Heart is a series of large, two times life-size heart shaped clear soaps, lightly stained blackcurrent red, venal blue and green. Remoulded between shows they become complex amalgams. They lie on the sink or are

strung from ropes fixed to the ceiling. The larger hearts have embedded in them, cast within them, smaller hearts in slightly darker colours. Over time the hearts get washed away to nothing; but reveal the inner heart en route. This work was made for the stainless steel surfaces of the restrooms at PHI, Montreal. On first visiting the gallery this space was identified as having the air of a 'scrubbing up' space of a hospital surgical department, and in the setting of the exhibition, which was in the main video works, I liked the idea of having a work that had a haptic aspect, i.e.: was touchable.

The consequence of the removal of the old heart for a new one is, in the first months after transplant, the continual need by the transplant patient to keep spotlessly clean. Immunosuppressant drugs have knocked out the host's body's immune system to avoid rejection of the 'invading' heart and everything needs to be done to keep the risk of infection at bay. Vigilant cleaning is necessary; cleaning to hold onto life; clean, clean, clean.



Image 5: A Tender Heart. Cast soap and black cotton rope, 2013.

Detail: Image courtesy of Andrew Carnie and GV Art London

In making the work I liked the notion that we should be reminded of this need for cleanliness through a normal everyday activity. I liked too the possibility of holding a heart and washing it, tending to its needs. There is something about holding soap, raising a lather; making the soap come alive for a brief time, breeding bubbles, that is important, and in this case potentially life-saving. So in nursing the soap heart with the hands, sustenance in body heat is given to it and at the same time as the heart is washed it dwindles, is washed away and as it lessens but reveals a heart, a new body within a 'body' passing; the work is temporal in it's process.

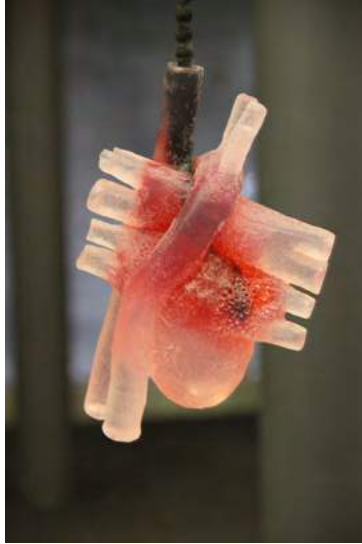


Image 6: A Tender Heart. Cast soap and black cotton rope, 2013.
Detail: Image courtesy of Andrew Carnie and GV Art London

Descriptions of the works give some idea of the issues that one attempts to convey. In the sound work, *The Beat Goes On*, two serge hearts act as giant headphones. The commentary describes the issues arising around heart transplant, eroding the belief that the interchange of old heart for new is anything simply analogous to the change of a broken pump on an old automobile engine for a new one. There is more to this interchange than the simple replacement of a pump than maybe a Cartesian model would suggest, where the mind is considered split from the body. The swap is difficult, because the 'heart' of the body is so intrinsically enmeshed with the 'mind' of the body; indeed, they are one; the two are fused completely in their emergence to 'being'. The voices read a text based on Prof Margrit Shildrick's paper 'Hybrid Bodies', the text summarising all the major issues is read in a number of overlapping voices, intermingled with a complex overlay of hospital sounds, jingles from Heart Radio and real theatre commentary.

In the video work *Heart and Mind: Who is knocking*, 2014, a figure, lying as perhaps on the operating table in the painting 'The Anatomy Lesson of Dr Nicolaes Tulp', by Rembrandt, or as the figure in the 'Lamentation of Christ', by the Italian Renaissance artist, Andrea Mantenga, circles and rotates slowly in the lower portion of the video screen. At the start of the film the intact, but damaged venal system and heart arises from the body taking with it a set of possessions or everyday articles that the figure may have interacted with during a lifetime. The items are incorporated into the image of the blood system in terms of colour, form and texture. Lifting away from the body they move ever upwards and as they finally

leave the top of the screen they are interchanged by a more invigorated venal system containing a different set of everyday objects, again incorporated into the system using the same technique as earlier, though descending from above. The upward looking recumbent figure observes these comings and goings. What arrives and departs in the interchange of the organ, the heart, connected to this complex system? What changes of taste might happen in this situation, is there some form of conversion, real or projected? Whatever really happens, the idea that there is change must effect the patient whatever the physical reality.

The work *Lacuna* 2014, deals very much with vulnerability. The complex patterns of bodies are projected on screen. In this video work they seem to reflect defensive modes of combat at times: Roman military organization; Castellars in Catalonia, Spain, building acrobatic towers; MRI, Magnetic Resonance Imaging machines taking body scans; Busby Berkeley dance routines; and eye like formations, all attempting to express the stream of changing contradictory feelings born by the patients.

CONCLUSION

Acceptance and understanding of what the artists brought to such an emotive research project was difficult to comprehend by the actual heart transplant team at the start. Their minds were fully involved in the desire to help the patients in dire circumstances. Over time and with encounters with art works the team has realized the sensitivity of the art work and importantly what the works can do as tools to unlock thoughts and conversations with not only the transplant patients but with the whole teams involved in transplant from specialist nurses to cardiac surgeons.

The works of art have acted as 'bridges', conduits to thoughts and feeling about the transplant procedure. They have allowed conversations to take place that would not have done so previously. They have allowed access to thoughts about 'hybridity'. They have pulled the whole team together; the works have allowed the artists to become full members of the research team. Allowing them to participate in the analysis of the 'transplantee' interview tapes. It is now understood by the team what sensitivities artists can bring to the analysis. They realise that works of art are good at being the grit in the oyster eliciting complex ideas about what happens in this most difficult of transactions. The works have informed a very wide audience through exhibitions, talks and a web presence about the complex issues.

REFERENCES

- Deleuze, Gilles and Felix Guattari, (1987), *A Thousand Plateaus: Capitalism and Schizophrenia*. Minneapolis: University of Minnesota Press.
- Fox Keller, E, (1995), *Refiguring Life*. New York: Columbia University Press.

- Haraway, D, (1991). *Simians, Cyborgs and Women*. London: Free Association Books.
- Irigaray, L, (1985) *The Sex Which Is Not One*, trans, Catherine Porter. Ithaca: Cornell University Press
- Kristeva, J, (1982), *Approaching Abjection, Powers of Horror*, Columbia University Press, NY,
- Kristeva, J, (1991), *Strangers to Ourselves*. Translated by Leon S. Roudiez. New York: Columbia University Press.
- Lock, M, (2002), *Twice Dead: Organ Transplants and the Reinvention of Death*. Berkeley: University of California Press.
- Lock, M. (1995), "Transcending Mortality: Organ Transplants and the Practice of Contradictions." *Medical Anthropology Quarterly*, New Series 9, no. 3, (September 1995): pp 390-393.
- Merleau-Ponty, M. (1989). *Phenomenology of Perception*. Translated by Colin Smith. London: Routledge.
- Merleau-Ponty, M. (1963), *The Structure of Behaviour*. Translated by A.L. Fisher. Boston: Beacon Press.
- Merleau-Ponty, M. (1968), *The visible and the invisible*. Evanston, IL: Northwestern University Press;
- Nancy, Jean-Luc. (2000), *Being Singular Plural*. Translated by Robert Richardson and Anne O'Byrne. Stanford: Stanford University Press.
- Nancy, Jean-Luc, (2000), *L'Intrus*, Translated by Susan Hanson. Paris: Galilee, 2000, 1-13.
- Ross, H, (2010), What they say versus what we see: "Hidden" distress and impaired quality of life in heart transplant recipients. Contributors Susan Abbey, MD, Enza De Luca, MN, Oliver Mauthner, MN, Patricia McKeever, PhD, Margrit Shildrick, PhD, and Jennifer Poole, PhD. *The Journal Of Heart and Lung Transplant* 2010;29:1142–9.
- Sanner, M.A. (2005), "Living with a Stranger's Organ: Views of the Public and Transplant Recipients." *Annals of Transplantation* 10, no. 1, (2005): 9-12.

ABOUT THE AUTHOR

Andrew Carnie is an artist and academic. He teaches at the Winchester School of Art part of Southampton University and is currently head of painting. His artistic practice often involves a meaningful interaction with scientists in different fields, regarding themes and ideas, which are often based around neurology as an early stage in the development of his work. The work is often time-based in nature, involving slide projection using dissolve systems or video projection onto complex screen configurations. In a darkened space layered images appear and disappear on suspended screens, the developing display absorbing the viewer into an expanded sense of space and time through the slowly unfolding narratives that evolve before and around them. His work has been exhibited at the Science Museum, London, the Natural History Museum, Rotterdam, the Design Museum,

Zurich, Exit Art, in New York, the Great North Museum, Newcastle, the Pera Museum, Istanbul, the Dresden Hygiene Museum, the Morevska Gallery, Brno, and Daejeon Museum of Art, South Korea, KKW Gallery, Leipzig amongst many others. He regularly exhibits and is represented by GV Art Gallery London.



Image II: Opening. Photo credits: Athanasios Tsingas and Evangelia Koumantsioti

KIRA O' REILLY & MANUEL VASON
Finland & UK

Succour

Using micropore tape, create a grid on the right leg
With a scalpel make a small, diagonal cut in each square of the grid.
Repeat on the left leg
Repeat on the torso working as high up as is possible
Stop
Peel the grid of tape off, like a flayed skin
Using alcohol wipes, making blood prints from the bleeding cuts

I counted them, well over three hundred cuts were made during each performances of Succour. It was a performance I first made in 2001 and that I last made in 2002. It could be said that the performance continues still on my body as delicate white scars remain from the cuts, some becoming more prominent now as my skin loses collagen and shows signs of aging some 15 years later.

I approached photographer Manuel Vason to arrange photograph my cut body the day after a performance of Succour, in my mind's eye I had the idea of wanting to photograph the skin so that it appeared limitless, an uninterrupted field save for the slashes, a field of skin, my intention was that they would become another art work, perhaps an installation. Manuel had emerged to be a phenomenal force in the world of live art in London during the late '90s and early 2000s, and continues to be as he has documented and collaborated with numerous artists working with their bodies within performance practices, equalling the visceral force of a variety of carnal practices with his own, bringing into the photographic frame his passion and vision with that of the artist.

This triptych of works are what emerged.



Image III: Image of the triptych “Succour” by Kira O’Reilly and Manuel Vason captured during the opening. Photo credits: Athanasios Tsingas and Evangelia Koumantsioti.

ABOUT THE AUTHORS

Kira O’Reilly is a Helsinki based artist and is currently programme leader of MA in Ecology and Contemporary Performance at Theatre Academy of the University of the Arts Helsinki; her practice, both wilfully interdisciplinary and entirely undisciplined, stems from a visual art background; it employs performance, biotechnical practices and writing with which to consider speculative reconfigurations around The Body. But she is no longer sure if she even does that anymore. Her art practice arcs across several contexts from art, science and technology to performance, live art and movement work. She writes, teaches, mentors and collaborates with humans of various types and technologies and non-humans of numerous divergences including mosses, spiders, the sun, pigs, cell cultures, horses, micro-organisms, bicycles, rivers, landscapes, tundras, rocks, trees, shoes, food, books, air, moon and ravens.

Manuel Vason is an interdisciplinary artist interested to explore the correspondence between the art of photographing and the art of performing. Vason believes the space in between the action and the image is a fertile space of creative expansion. The collaborative nature of his practice shapes a unique, hybrid art form and generates new vocabularies. His collaborations to date have produced some of the most iconic images of performance and his work has been published and presented internationally. Vason was born in Padova, Italy in 1974 and moved to London in 1998. In 2003 he completed a Master degree in Fine Art at Central Saint Martins, University of the Arts, London. In 2015 he launched the Double Exposures book project at The Photographers Gallery and Tate Britain in London. Vason continues to develop a practice that integrates different media and forms of collaboration.



Image IV: Opening. Photo credits: Athanasios Tsingas and Evangelia Koumantsioti

JOSEPH NECHVATAL
France/USA

Cyclops (piano eye)

ABSTRACT

Description and explanation of the viral animation Cyclops (Piano Eye) created by Joseph Nechvatal in 2009 and exhibited in *Taboo-Transgression-Transcendence in Art & Science*.

KEYWORDS

artificial life, piano, cyclops, eye, virus, genetic programming

INTRODUCTION

Cyclops (Piano Eye) (2009) {<https://youtu.be/DV9AnL1MSaE>} is a viral animation that was created out of my Computer Virus Project 2.0. This work follows along the same lines as my previous viral works begun in 1992 where an unpredictable progressive virus operates on a degradation/transformation of an image (in this case a human eye). The animation contains a piano music montage created by myself, as well.

Technique

Using a C++ framework, I and my programmer/collaborator Stephane Sikora have brought my early computer virus project into the realm of artificial life (A-Life) (i.e. into a synthetic system that exhibits behaviors characteristic of natural living systems). With Computer Virus Project 2.0, elements of artificial life have been introduced in that viruses are modeled to be autonomous agents living in/off the image. The project simulates a population of active viruses functioning as an analogy of a viral biological system. Among the different techniques used here are models that result from embodied artificial intelligence and the paradigm of genetic programming.

Artistic Intentions

My intentions for *Cyclops (Piano Eye)* within *Taboo-Transgression-Transcendence in Art & Science* was that of establishing a counterpoint to pop nihilism so as to allow for our inner intensity to flourish. Today the meeting of art, science and information technology is one of the vital and pleasurable arenas in which interesting currents align. My endeavor with Cyclops was to give evidence of this pleasurable meeting.

Immersion Into Noise

Cyclops creates an elaborated ornamental scene that embodies primordial joyful frenzy and primordial pain. Cyclops identifies with the pain of the world and merges into the unification of the world. This approach relates to my book *Immersion Into Noise* (2011) where I have mapped out a broad-spectrum of aesthetic activity I call the art of noise by tracing its past eruptions where figure/ground merge and flip the common emphasis to some extent. *Immersion Into Noise* concludes with a look at the figural aspect of this aesthetic lodged within the ground of consciousness itself. In brief, noise art aesthetics is an unbound zone (where qualitative shifts of coordinates take place) in which it is possible to carry out art experiments that would be unachievable in a different place. What noise art aesthetics has to offer is the possibility to understand things in a different way, shifting boundaries, departing from established functions.

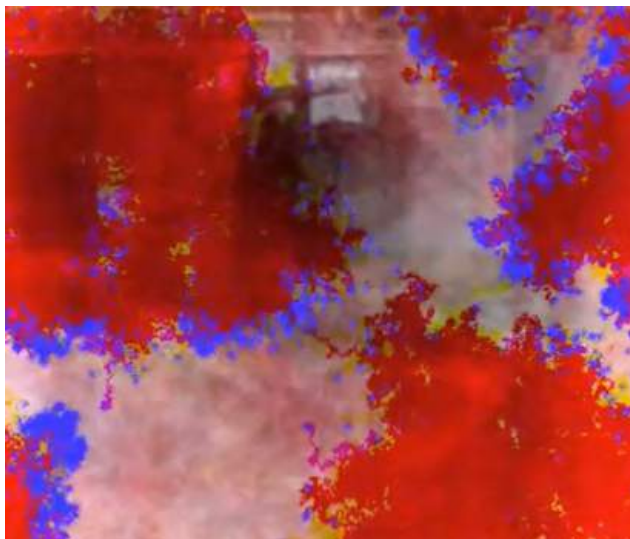


Image 1: Still from *Cyclops (Piano Eye)* (2009)

CONCLUSION

What is important in *Cyclops* is its intentional enigma. It needs to be obscure to the degree that its codes cannot be discerned. This phantasmagorical obscurity and mystery is increasingly desirable in a world that has become increasingly data-mined, mapped, quantified, specialized and identified in a straight-forward matter of fact way. This will for enigma is the basis for discovering and entering into an immersion into the art of noise. Its goal is to disrupt instrumental logic and contradict, counteract, and cancel out false reason and hollow feeling. Suffering and joy, like figure and ground, are here tied together in frenzy, neither one without the other. Thus *Cyclops* suggests and produces stress in us; one might even say an urgent anxiety of disintegration.

There are now many artists who see the symbolic and metaphorical dimension of a work as of little importance. I am not one of them. For me, the real worth of vigorous contemporary art is in its ability to deliver excessive sensually-embodied implications. For Cyclops I eagerly identified with Nietzsche's Dionysian attention to the frantic painful beauty of primal unity. The Dionysian embraces the frenzied chaotic nature of experience as all-important; not just on its own, but also as it is intimately connected with the Apollonian. The Dionysian magnifies us, but only so far as we realize that it emphasizes the harmony that can be found within one's chaotic experience. Such a thinking of frenzy through the prism of Dionysian aesthetics is at the core of Cyclops: tragedy that allows us to sense an underlying essence of primordial unity which revives our Dionysian nature. This is an almost indescribably pleasurable feeling to try to capture, but it was my goal for Cyclops.

REFERENCES

Book: Nechvatal, Joseph. *Immersion Into Noise*, Ann Arbor: Open Humanities Press (2011)

ABOUT THE AUTHOR

Since 1986 **Joseph Nechvatal** has worked with ubiquitous electronic visual information, computers and computer-robotics. His computer-robotic assisted paintings and computer software animations are shown regularly in galleries and museums throughout the world. From 1991-1993 he worked as artist-in-resident at the Louis Pasteur Atelier and the Saline Royale / Ledoux Foundation's computer lab in Arbois, France on The Computer Virus Project: an experiment with computer viruses as a creative stratagem. In 2002 he extended that artistic research into the field of viral artificial life through his collaboration with the programmer Stéphane Sikora. Dr. Nechvatal earned his Ph.D. in the philosophy of art and new technology at The Centre for Advanced Inquiry in the Interactive Arts (CAiiA) University of Wales College, Newport, UK. From 1999 to 2013, he taught at the School of Visual Arts in New York City (SVA). His book of essays *Towards an Immersive Intelligence: Essays on the Work of Art in the Age of Computer Technology and Virtual Reality* (1993-2006) was published by Edgewise Press in 2009. In 2011 his book *Immersion Into Noise* was published by the University of Michigan Library's Scholarly Publishing Office in conjunction with the Open Humanities Press. Web archive of all his current papers is at <https://www.scribd.com/jnechvatal> and <https://sva.academia.edu/JosephNechvatal>.

Email: joseph@nechvatal.net

Website: nechvatal.net



Image V: Opening. Photo credits: Athanasios Tsingas and Evangelia Koumantsioti

MARNE LUCAS aka CuntemporaryArtist
Artist, USA

Incident Energy Project- An Artist's Explorations of Thermal Imaging

ABSTRACT

As a visual artist I use military-grade, infrared imaging technology for its surreal beauty that is both arresting and sinister in appearance, but also to address contemporary issues of surveillance. The advancement of surveillance culture continues to change human interaction in creative and philosophical ways; a subtext posited is about the rapid advancement of this invasive technology and our (c)overt acceptance of the electronic villain/wizard into our lives. Contemporary art constructs are important ways to illustrate aesthetic beauty and also concerns about the impact of imaging technologies that track, record and analyze the public's movements and actions.

KEYWORDS

surveillance, infrared video, imaging technology, range phenomenology, incident energy, medical imaging, visual art, menopause, feminist art, video installation, erotic art

INTRODUCTION

Societies are watched by surveillance technology all the time. Security cameras watch us at work, in schools, and public spaces, our cell phones track our whereabouts, personal computers are laced with "cookies" to trace our visits within the internet. Tiny cameras spelunk inside the human body during medical procedures in video assisted laparoscopy. This practice of being watched and recorded can be interpreted as a reassuring presence in the wake of increasing terrorist or violent attacks, or, in the case of search and rescue of missing persons in the wilderness. But it is also a slippery slope as we accept surveillance as a norm while our everyday whereabouts, our physical identities are tracked, observed, recorded and stored for unknown future usage.

ART AND TECHNOLOGY

“...art oriented projects make concepts, practices and results of the surveillance more understandable to society, as they help us visualize and challenge them”. (Bouzas:2016).

I use infrared imaging cameras in the service of fine art as a new way of viewing the literal heat our bodies and landscapes, to visualize the invisible, while referencing invasive technology that is being used publicly and privately. Transporting the viewer into an “‘otherworld’ space in an intersection of art and technology, infrared cameras visualize the surreal beauty of heat-signatures radiating from the corporeal, offering a glimpse of our temporal coalescence of ancient stellar energy, and draws upon analogies about the universe: that we are truly beings of light.

The heat-signatures captured by infrared imaging shows how incident energy -the measure of heat striking an object- dissipates in both a physical (and visually magical) way, depicting the impermanence of energy. All objects above 0 degrees Kelvin emit thermal infrared energy and FLIR (forward-looking infrared device) thermal imagers can passively see objects regardless of the presence or lack of ambient light, depicting actual heat signatures expressed from objects and people. What is hot appears white and cooler or wet objects appear black, thus warm veins, cold extremities and breath are all visible, in real time, with no special effects. The visual appearance is quite arresting: objects, landscapes and people have seemingly black-and-white negative film qualities, but also possess a transparency and inner glow, while maintaining surface reflections.

The themes explored in my infrared films and photography are: intimacy and sexual union, as a surgical procedure in ‘The Operation’ (1995), a simple creation narrative expressed by modern dancers in ‘Incident Energy’ (2013), the depiction of the hormonal transition of menopause as one of transformation in ‘Haute Flash’, and in photographic ‘Bardo’ series is about transformation in dying and death. The common thread is the exploration of the human body within its landscape as viewed by heat-sensitive imaging technology to depict the literal corporeal light expressed, and by extension, our connection to the universe.

TRANSGRESSION

There is a transgressive element to my aesthetic choice to use somewhat sinister, military imaging technology in making experimental films and photographs to make artworks that focus on an illuminated, translucent beauty of humanity and our surroundings, while questioning the public’s acceptance of the electronic eye. I have used infrared binoculars, security cameras and hunting rifle scopes as the recording devices in solo projects and with collaborator Jacob Pander. Our limited access has been obtained in a mostly surreptitious manner, making for challenging circumstances in capturing our vision, adding to the transgression.



Image 1: 2013, one of five photos released of Boston bombing suspect in hiding, black and white infrared video still. Image courtesy Massachusetts State Police

A common use of military infrared cameras is for border or aerial surveillance. FLIR cameras were used to locate and track ships, tanks and planes at night during the first Gulf War [Persian Gulf Wars (August 2, 1990 – February 28, 1991) codenamed Operation Desert Shield and Operation Desert Storm.] (Wikipedia.org) These wars gained the nickname “Video Game Wars” because of the constant supply of air strike imagery in live news CNN broadcasts. More recently, the American public watching the news about a terrorist bombing during a Boston marathon in 2013 saw eerie black-and-white infrared images broadcast of a grey boat shape, with a white-hot glow of a warm body hidden below the tarp. The bombing suspect Dzhokhar Tsarnaev was found hiding in a boat in a residential area, by police helicopters equipped with FLIR cameras that flew overhead. Within the scope of this dramatic terrorist attack, the public became both familiarized and reassured by police use of infrared heat-sensitive imaging technology in apprehending the suspect. (mashable.com)

TABOO

The Operation, an award-winning, experimental, infrared short film made by filmmaker Jacob Pander and myself, was shot in 48 hours in 1994, on a minuscule budget. The Operation represents a merging of our fascination with the macabre beauty of the human body as viewed by imaging technology, with an exploration of erotic imagery informed by video pornography. By using infrared imaging devices as video cameras, the boundaries between physical, sexual and intellectual stimulation become blurred. Our original idea was to use X-ray technology but the effects of radiation on the body is prohibitively dangerous at the repeated exposures needed to shoot the film. We settled on using a military-

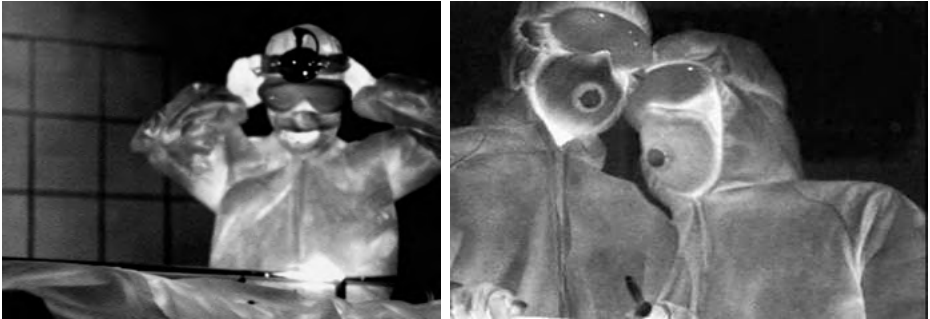
grade FLIR security camera to produce a similar effect in depicting a translucent and simultaneous interiority and exteriority, thus paving the way for a new way to view heat and light of the human body. Furthering the taboo of pornography, we appeared as talent in the film, I played the dominant “Surgeon” and Pander was the “Patient. This decision arose out necessity -it wasn’t something either of us thought we would do- but did so out of commitment to our vision. The stylistically eerie narrative implies that a menacing surgical practice is about to commence in an operating theater, but what happens is actually very intimate sex on a hospital gurney between the female surgeon and male patient. The film is not about nihilism, but rather about a healing sexual encounter as viewed by a surveillance camera and a team of surgical “Observers”.



Image 2: *'The Operation'* (1995) Jacob Pander and Marne Lucas, black and white infrared video, Trt 12:50, USA. Synopsis: In a cold tile operating room, a surgeon (Gina Velour) clad in a protective Ty-Vek suit, goggles and tight rubber gloves demonstrates her skills before a group of observers. They scrutinize the eerie coupling between the surgeon and patient (Otto Wrek), whose bodies merge like molten lava. Explicit radioactive sex draws the viewer into an erotic experience that probes beneath the boundary of skin. (Mature viewers, explicit content.) Images courtesy of the artists.

The Operation, an award-winning, experimental, infrared short film made by filmmaker Jacob Pander and myself, was shot in 48 hours in 1994, on a minuscule budget. The Operation represents a merging of our fascination with the macabre beauty of the human body as viewed by imaging technology, with an exploration of erotic imagery informed by video pornography. By using infrared imaging devices as video cameras, the boundaries between physical, sexual and intellectual stimulation become blurred. Our original idea was to use X-ray technology but the effects of radiation on the body is prohibitively dangerous at the repeated exposures needed to shoot the film. We settled on using a military-

grade FLIR security camera to produce a similar effect in depicting a translucent and simultaneous interiority and exteriority, thus paving the way for a new way to view heat and light of the human body. Furthering the taboo of pornography, we appeared as talent in the film, I played the dominant “Surgeon” and Pander was the “Patient. This decision arose out necessity -it wasn’t something either of us thought we would do- but did so out of commitment to our vision. The stylistically eerie narrative implies that a menacing surgical practice is about to commence in an operating theater, but what happens is actually very intimate sex on a hospital gurney between the female surgeon and male patient. The film is not about nihilism, but rather about a healing sexual encounter as viewed by a surveillance camera and a team of surgical “Observers”.



Images 3,4: Infrared video stills: the Surgeon, and below, the Observers in *The Operation* (1995). Courtesy of the artists.

Film historian Jack Sargeant wrote "...the film engages directly with the question of gender within the zone of medical examinations. The female genitals and reproductive organs, frequently the focus of attention in medicine and a zone regularly invaded by the cold steel of the gynecologist’s speculum remain hidden in the surgeon’s preliminary investigation of the film. Instead it is the penis which is the source of medical (and the audiences) fascination; pulled –by tongs- from under the sheets which cover the patient, it hovers, semi-erect, glowing white as hot blood is pumped into it – (and) it is the first actual signifier that the film is not actually just filmed in negative. Further, the film thus reverses the assumptions of the doctor/patient relationship". (Sargeant: 1998)

The “Observer” characters who watch from a surgical theater platform can be seen as a reference to the all-seeing eye of public surveillance cameras. They are also a play on the viewer, both the Observers and the viewer are watching the same sex act, so the film itself is a mirror, as both sets of viewers are watching artistic erotica together.



Images 5,6: Infrared video stills: the patient (Otto Wrek) pleases the surgeon (Gina Velour). Below: the female orgasm is represented by a montage of images of open-throated heavy breathing. *The Operation* (1995) courtesy of the artists.

In a related aesthetic of imaging technology merged with erotica, the renowned contemporary Belgian artist Wim Delvoye made a series of “SexRays” in 1998-early 2000’s using small amounts of Barium applied to the bodies of volunteers posing for explicit radiology X-rays. These images possess a similar, ghostly, inner view of the human body and delve below the skin to illuminate who and what we are, both physically and also in a spiritual sense. Delvoye says: “The big link they made content-wise is that they all ask the viewer: Where is the soul? Where is love?” (museemagazine.com)



Image 7: X-ray photograph of a couple from the SexRay series. (Courtesy of the artist) 2001, *Lick 1*, Wim Delvoye, cibachrome on aluminum, 100 x 125cm. <https://wimdelvoye.be/work/x-rays/x-rays/>

Delvoye also makes the point that one cannot easily make art with medical technology or medical spaces it is not viewed as acceptable as an appropriate art material, nor process or environment in which to make art. Hospitals and clinicians are not so willing to assist artists in making technology available for

creative endeavors. Delvoye's ethos of being intensely resourceful towards achieving a body of art that is both explicit and requiring specific technology, is similar to ours in the kinds of challenges faced. In shooting *The Operation* using military imaging technology, which was not available to the public, we further pushed against cultural norms by using a surgical operating theater (fabricated) as the space in which the taboo patient/surgeon sexual union takes place. As I explained to writer Jack Sargeant "The film was meant to be fetishistic, you think of operating rooms as pristine, sterile, and clean. They are sort of like churches, or religious, sacred places. The doctor touches the body and it is supposed to be non-sexual...These people are handling your mortality, and your body." (Sargeant: 1998)



Image 8: 2009, *Barbie*, CT scan Satre Stuelke, 'Radiology Art' series. Image courtesy of the artist.

Medical imaging technology is used for diagnostics that are devoid of emotion and beauty. We add our own emotions to the end results of such clinical outcomes. The artist and radiology technician, Satre Stuelk, MD, MFA makes CT (computed tomography) X-ray scans of domestic objects depicting the internal beauty of everyday items and aims to soften the peering view of medical imaging technology that patients experience in hospitals and clinics. (Stuelke: 2017) An artistic, social practice outreach, he makes the images available to hospitals and clinics at cost, to be displayed as aesthetically-pleasing art to sooth the viewer. This stylistic view of what is above and below the surface of familiar household objects is striking, and is in peer to the art works of Delvoye in its creative utilization of medical radiology equipment.

TRANSCENDENCE

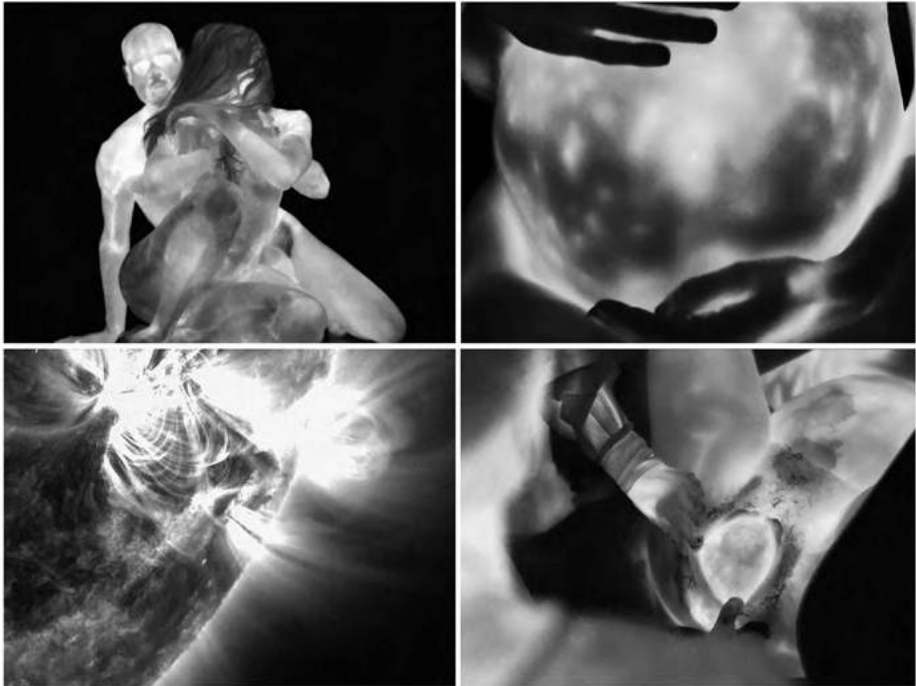


Image 9: 2017, infrared video still, *Haute Flash*, trt 6:20, Marne Lucas

A glass “Head” character represents hormones and the “Woman” is a gracefully aging, voluptuous goddess existing on a primordial beach; the heating and cooling effects on her body can be seen. Head washes ashore, and Woman experiences a menopausal transition upon touching it, she feels the emergence of a new power and becomes a transformed creature of newfound strength. Contrasting the stark, geological island landscape and ocean imagery of Maui, Hawai’i with primal movement, the lone female character appears as a translucent human in a realm where warm veins and cold or wet extremities are visible. Image courtesy of the artist.

Haute Flash is my experimental infrared short film about the hormonal transition of Menopause, the end of reproductive phase in women. Shot entirely with an infrared military-grade rifle scope, the crosshairs are visible throughout the film, referencing the targeted feeling of radically shifting hormones experienced throughout peri/menopause. I made the film in response to my own current journey through menopause and the physical, mental and spiritual issues associated with this shift in female biochemistry. I cast a middle-aged woman as the talent, who expresses this transformation from that of an earthly woman, into a goddess-like figure owning her new power. *Haute Flash* is an ode to the major shift in my perspective of what it means to be feminine and exist as woman among cultural ideas on what female power should look like as I age.

“The cosmos is within us. We are made of star stuff”—Carl Sagan, astronomer.



Images 10-13: 2013, ‘Incident Energy’ Jacob Pander and Marne Lucas, 4 channel infrared video, trt: 20:00, <https://vimeo.com/119734456>. Sun image courtesy of (NASA/SDO) science teams.

Incident Energy is a multi-channel, infrared video installation that Pander and I made expressing a creation drama that examines energy, the universe, love, birth, conflict, decay and death; as expressed through intelligent movement, human emotion and natural landscapes. Scenes were filmed in nature against snow-covered forests, empty beach landscapes, and in contemporary settings and dense urban crowds, juxtaposed with vast solar, lunar and interstellar imagery. The viewer senses the cyclical nature of energy, from the galaxy to humanity, revealing the fragility of existence, while combining the emotional theater of opera with eerie scientific observation. The main narrative “Creation” uses modern dancers portraying primitive humans to convey a timeless creation story. The other narrative “Birth” includes a full-term pregnant woman, the birth in a hospital, and later, breastfeeding her infant at 3 months of age.



Image 14: 2013, Installation view of channel 1 'Creation' narrative (background) and channel 2 'Birth' narrative. Dancers Douglas Allen and Mizu Desierto play "Primitive Humans" sharing food dug from the sand. Ch. 2 is a Birth narrative of a mother's pregnant belly, birth and later her infant nursing. Incident Energy, 4 channel infrared video, Disjecta Contemporary Fine Art, Portland, Oregon. USA. Image courtesy of the artists.

Image 15: (2013) Opening reception of Incident Energy video installation, Marne Lucas and Jacob Pander, Disjecta Contemporary Art Center, Portland Oregon, USA. A dance performance by choreographer Jim McGinn interacting with a pillar of ice on a pedestal, silhouetted against simultaneous live thermal video projections that echo his movements and detail the light of the body. This performance allowed the audience to see what an infrared camera detects in real time, with no special effects. Both the pillar of ice registers as black and his skin as he comes into contact with the ice. Near the end of the performance, McGinn smashed the ice with an axe. Images courtesy Marne Lucas.



Choreographer Jim McGinn was previously an open-water competitive swimmer. Years before, he was training to swim 21 miles across Southern California's Catalina Channel, but he never finished the swim as he succumbed

to hypothermia after eight hours. That experience inspired 'Float' a piece he was rehearsing to be performed with his dance company TopShakeDance. "Issues with fear and the real struggle with hypothermia would make me lose my mind, in a way, or just drift outside myself," says McGinn. (8). During the filming of 'Incident Energy' McGinn told my collaborator Pander and I that he also used this hypothermic experience to inform his character "Primitive Man" who crawls through snow towards his frozen demise. McGinn's intelligent movement portrayal of "Primitive Man" precisely captured the emotions of human struggle, decay and death.



Images 16,17: 2013, Choreographer Jim McGinn bravely crawling through winter snow as "Primitive Man" during filming on location on Mt. Hood, Oregon. Right: infrared video still of the same scene. Photo by Marne Lucas, video still: Jacob Pander and Marne Lucas.

"As above, so below, as within, so without, as the universe, so the soul..."-
Hermes Trismegistus

Bardo' is my ongoing end-of-life social practice project that explores creativity as a form of spiritual end-of-life care, illuminating the positive effects of art as mind + body are integrated; coupled with relics from those journeys. Working with hospice patients to express artistic endeavors that best represent their legacy, my aim to help the dying attain acceptance in the face of death. This project includes many mediums including sculpture, photography, and video inspired by the collaborators themselves, location or materials available. I am using infrared video stills in collaged photography to present the physical expiration of and spiritual transformation of life, and expand upon the idea that we are made of stellar material, and return to these origins.



Image 18: 2017, 'Bardo: Ouroboros, Skull', 16 x 20", archival pigment print. Digital collage of a brass plated Ouroboros sculpture and an infrared video still, both Marne Lucas.

From the art exhibition "Good Mourning Tis of Thee", curated by Alyssa Taylor Wendt and Sean Gaulager, Co-Lab Projects, Austin, Texas.

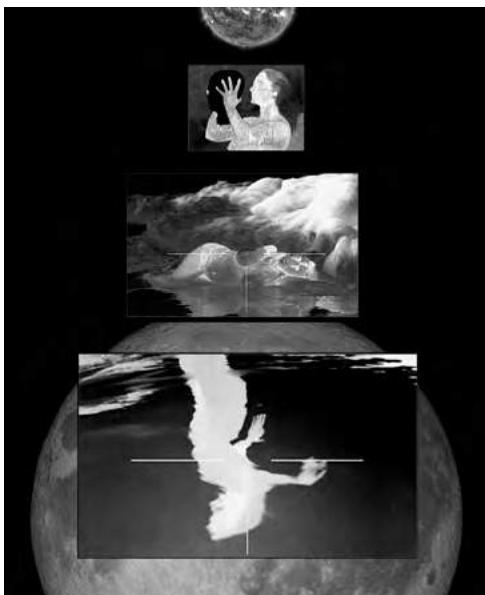


Image 19: 2017, 'Bardo: Life, Decay, Death', 20 x 16", archival pigment print, Marne Lucas. Infrared video stills depicting various states of life and death.

Courtesy of the artist and NASA/SDO.

CONCLUSION

Incident Energy Project as a body of work aims to offer a glimpse into visual worlds that are ever-present yet hidden from our perception, creating a sense of wonder at the visual beauty of radiating heat signatures occurring around and within us. My goal is to steer the sinister uses of infrared imaging technology for military, aerial or border surveillance towards a gentler purpose, to provide a new way of perceiving the Self.

REFERENCES

- Blanch, Andrea, "Naughty Boy: Interview with Wim Delvoye", *Musée Magazine*, April 25, 2016, <http://museemagazine.com/features/art-2/features/naughty-boy-interview-wim-delvoye-2>
- Bouzas, Vasileios, "The Discrete Charm of Surveillance", in Dalila Honorato and Andreas Gianakouloupoulos (ed.) *Taboo-Transgression-Transcendence in Art & Science 2016*, Corfu: Ionian University - Department of Audio & Visual Arts, 2017, https://avarts.ionio.gr/ttt/download.php?f=/years/2016/downloads/%CE%A4%CE%A4%CE%A4_2016_v3c.pdf

- Fitzpatrick, Alex, "New Aerial Images Show Boston Bombing Suspect In Boat" (Images courtesy Massachusetts State Police), *Mashable*, April 20, 2013, <https://mashable.com/2013/04/20/aerial-images-boston-bombing> (accessed September 25, 2017).
- Sargeant, Jack, "Hot Zones – The Operation", *Suture: The Arts Journal*, Vol. 1 (1998) pp. 55–74.
- Spencer, Aaron, "Float (TopShakeDance) Cuttin' a rug here, under the sea", *Willamette Week*, October 29, 2013, <http://www.wweek.com/portland/article-21457-i-float-i-topshakedance.html>.
- Stuelke, Satre, Official website (2017), <http://radiologyart.com/> (accessed September 25, 2017).
- Wikipedia, The Free Encyclopedia, s.v. "Gulf War," (accessed September 10, 2017), https://en.wikipedia.org/wiki/Gulf_War

ABOUT THE AUTHOR

Marne Lucas is a multidisciplinary artist based in New York, USA, using photography, video and installation for social justice related projects to present unique aesthetic or social philosophies. Central to her practice are investigations of nature, culture, and the body, working in conceptual overlaps: energy, the environment, beauty, identity, intimacy and mortality. Lucas uses infrared video (IR), a heat-sensitive imaging technology to reference surveillance culture and explore the fragility of human existence. Her recent film *Haute Flash* (2017) is about the transition of Menopause. Previous IR collaborations with Jacob Pander are *Incident Energy* (2013) and their award-winning film *The Operation* (1995) as both directors and performers in an explicit, surgical narrative. An internationally exhibiting artist, Lucas received RACC project grants, a 2016 Arts/Industry Kohler factory residency (Foundry, Pottery), Land Art Mongolia 360 Residency + Biennial, CentralTrak experimental film residency, and the Portland2010 Oregon Biennial.

Email: marne.lucas@gmail.com

Website: www.incidentenergyproject.com



Image VI: Opening. Photo credits:
Athanasios Tsingas and Evangelia Koumantsioti

VOLUNTEERS:

Alexandra Bourou
Angeliki Kosma
Angeliki Lasithiotaki
Athanasios Tsingas
Ali Kior Hasan
Alina Karakanta
Anastasia Spyroglou
Anna Karolidou
Anna Marava
Anna-Maria Freri
Afroditi Psatha
Valentini Stambouli
Vasiliki Nikiforidou
Vasiliki Toulika
Giorgos Papafilipou
Dimitra Delfi
Elena Kyriakidou
Eleni Gantouna
Eleftherios Margiolas
Eleftherios Hatzianastasiou
Evangelia Koumantsioti
Ioanna Asproudi
Ioannis Salafountidis

Katerina Barka
Eleni Kopsaheili
Kyprianos Chrysostomou
Konstantina Gavriilidou
Foteini Kotsi
Lydia Kasfiki
Malamati Stavridi
Manolis Stamatakis
Maria Vouhara
Maria Zahariadou
Maria Boulelaki
Maria Papaioannou
Maria Poriki
Nasia Katsiouni
Nikos Orologas
Dina Vaseiliadou
Panagiota Beleri
Polyhronis Sotiriadis
Stavroula Nouvaki
Tania Chiotaki
Tzoulia Saramiieva
Faethon Katseas
Christina Christou
Chrysa Oikonomidou

Taboo - Transgression - Transcendence in Art & Science 2017
Editing: Dalila Honorato & Andreas Giannakoulopoulos
Ionian University - Department of Audio & Visual Arts
ISBN: 978-960-7260-60-4