

The Polish Journal
of Aesthetics

The Polish Journal
of Aesthetics

52 (1/2019)
Jagiellonian University in Kraków

The Polish Journal of Aesthetics

Editor-in-Chief:

Leszek Sosnowski

Editorial Board:

Natalia Anna Michna (Deputy Editor), Dominika Czakon (Deputy Editor),
Anna Kuchta (Secretary), Klaudia Adamowicz, Marcin Lubecki,
Gabriela Matusiak, Adrian Mróz

Advisory Board:

Władysław Stróżewski, Tiziana Andino, Nigel Dower, Saulius Geniusas,
Jean Grondin, Carl Humphries, Ason Jaggar, Dalius Jonkus, Akiko Kasuya,
Carolyn Korsmeyer, Leo Luks, Diana Tietjens Meyers, Carla Milani Damião,
Mauro Perani, Kiyomitsu Yui

Contact:

Institute of Philosophy, Jagiellonian University
52 Grodzka Street, 31-004 Kraków, Poland
pjaestheticsuj@gmail.com, www.pjaesthetics.uj.edu.pl

Published by:

Institute of Philosophy, Jagiellonian University
52 Grodzka Street, 31-004 Kraków

Co-publisher:

Wydawnictwo Nowa Strona – Marcin Lubecki
22/43 Podgórze Street, 43-300 Bielsko-Biała

Editorial Layout and Typesetting:

Katarzyna Migdał, Marcin Lubecki

Cover Design:

Katarzyna Migdał

First Edition

© Copyright by Jagiellonian University

© Les Impressions Nouvelles, 1986

All rights reserved

e-ISSN 2544-8242

BEHAVIORAL AESTHETICS

techné
desire
savoir-faire

Edited by
Daniel Ross and Adrian Mróz

CONTENTS

DANIEL ROSS & ADRIAN MRÓZ	<i>Introduction</i>	9
ANAÏS NONY	<i>Preface: Racism and Culture in the Age of Techno-Aesthetic Supremacy</i>	13
	Articles	
DANIEL ROSS	<i>Mind Snatchers of the Anthropocene. Can Aspects Dawn within the Gulag Architectonic?</i>	21
DEBORA PAZETTO FERREIRA	<i>Artificial Dreams: Contemporary Intersections between Art and Technology</i>	41
DAVID CHARLES WRIGHT-CARR	<i>Embodied Cognitive Science, Aesthetics, and the Study of Visual Language</i>	57
FRANCIS MECHNER	<i>A Naturalistic and Behavioral Theory of Aesthetics</i>	73
ADRIAN MRÓZ	<i>Towards Behavioral Aesthetics</i>	95
	Translations	
JEAN GALARD	<i>An Art to the Bone</i>	113
JEAN GALARD	<i>The Poetics of Conduct</i>	117
	About the Contributors	127

Introduction

The image on the cover of this volume comes from a stock photo¹ tagged² as body art, which can be briefly described as the application of paints to the body used as a canvas for creating new captured images or forms of art. The photographer depicts two hands painting each other's surface. This immediately brings to mind the paradoxical circuit of Maurits Cornelis Escher's *Drawing Hands* from 1948, which is reminiscent of a strange loop as described by Douglas Hofstadter in *I am a Strange Loop* (2007). The selection of this photo is not purely accidental, however it is a matter of utilizing algorithmic serendipity by the editors. It has been chosen as a representation of the current "strange loops" manifest within the modern cultural industry, which includes databases of stock photos as raw material for re-manipulation and sale. Moreover, it is also a representation of what the ancient Greeks have described as *pharmakon* (anything applied to the body, especially if it altered consciousness and was tied with behavioral rituals). The *pharmakon* is not simply a matter of poison or remedy—as many following in the footsteps of Derrida have claimed. Given the "magical" heritage of practices of care, and the word-play between *circuits* and *loops*, the stock photo of two hands, each painting the other's skin, serves as a metaphor for *pharmaka*. It represents an organology of bodies like hands, which are not merely naked or bare. They are *in the process* of cov-

¹ The photographer's description, with original mis-spellings: "Adulthood and living together concept. How people take each others features of character and change their behaviour when they live with somebody. Painting and modern art. Paitting tools". Source: <https://www.shutterstock.com/image-photo/adulthood-living-together-consept-how-people-1167867316>.

² Other tags: „drawing; hand; two; action; art; artist; artistic; arts; body; body art; brush; character; coloring; concept; cooperation; craft; creation; creative; decorative; design; detail; drawing dream; expression; fairytale; features; female; friendship; hobby; holding; human; interaction; life story; male; modern; paintbrush; painter; painting; pattern; process; red; relationships; silver; skill; skin; symbiosis; symbols; together; tool; white; work." Source: <https://www.shutterstock.com/image-photo/adulthood-living-together-consept-how-people-1167867316>.

ering each other's sense functions with a layer of paint, which modifies how *we feel touch* as well as how others perceive *my hands*—and by extension through body art—the gestures and poses captured by modern photography, image manipulation software, and a place for organizing and redistributing retained instances of aesthetic sensitivity. In addition, both hands arranged in yin-yang fashion also use the *artificial organ* of the paintbrush stained with the colors of the Other. This represents an interdependence between hands and tools (technologies of paintbrushes and paint production as well as techniques of painting). This image also represents the interdependence between behavior, art, and aesthetics.

Behavioral aesthetics is a new domain within the philosophy of art. As it is with novelty, this implies a lack of established methods and theories, at least within academic circles focused on aesthetics. Yet it is not entirely unthought, since the practices of marketing are a commercial form of exploiting societies, bodies and consciousnesses for the pursuit of profit. Since art can be conceived as a pharmakon, this means that a critical philosophical theory is missing within the domains of marketing, which have become careless and destructive of every aspect and dimension of life and existence. However, such practices of carelessness or other examples like the commodification of user behavior by social media raise a need for a critical reflection and diffraction of aesthetics through a behavioral critique, including its ethics and politics. This volume gathers together various approaches to aesthetics through such a behavioral lens.

We have asked Anaïs Nony to prepare a short preface to this volume in order to open up venues to further question the relationship between behavior and aesthetics. In her preface, titled *Racism and Culture in the Age of Techno-Aesthetic Supremacy*, she directs our attention to current events and the role of technology in disseminating biases, such as racism.

The first article by Daniel Ross titled *Mind Snatchers of the Anthropocene* refers to what has been described by geologists as the Anthropocene epoch in terms of the apocalyptic event of climate change triggering mass extinction and intensifying atmospheric violence. This also refers to the dire technological influence and grave significance for all traces archived by the biosphere's natural fossil records. Ross's article addresses how to re-envision this nightmare, which requires a revolutionary geopolitics of the sensible passing through the works of Bernard Stiegler, Ludwig Wittgenstein and Peter Szendy, and a conversion of the noetic gaze akin to the aesthetic event of discovering a bistable percept.

Next, Debora Pazetto Ferreira applies a Flusserian perspective to various images created by Google Deep Dream in *Artificial Dreams: Contemporary Intersections. Between Art and Technology* and raises difficult political and theoretical problems tied to the workings of art and the dissolving boundaries between art, science and technology.

The following article by David Charles Wright-Carr addresses aesthetic experience and visual language naturalistically via the paradigm of embodied cognition as a critique of calculation-based cognitive science. The article *Embodied Cognitive Science, Aesthetics, and the Study of Visual Language* presents key terminology and the problem of sign-making within symbolic environments.

A continuation of the naturalistic approach to the philosophy of art signaled by the previous article can be found in Francis Mechner's article *A Naturalistic and Behavioral Theory of Aesthetics*. This approach probably comes closest to what researchers in related fields would imagine by the tag "behavioral aesthetics." Here aesthetics is epistemologically problematized through reaction.

Next, the article *Towards Behavioral Aesthetics* by Adrian Mróz presents new paths for moving the field of aesthetics into a new *behavioral* paradigm of art, and the resulting *aesthetic* workings, while drawing from ideas arising from *new materialism* and a performative reconceptualization of whatever is considered to be artistic.

Finally, this volume is concluded with two extracts from Jean Galard's *La beauté du geste*, which is an attempt to reimagine human behavior through aesthetics. His writing concerns the primacy of analyzing aesthetics through the metaphoric usage of everyday behavior reconsidered as a fine art. He shows foundations for judging behavior itself as beautiful or ugly, which is something that can be encountered in many Platonic dialogues, yet somehow lost in modern understanding of behavior in terms of neutrality or at best an ethical and political problem and not an aesthetic one, as if gestures are not applicable to axiological investigation and the philosophy of art.

Thus, we hope that this volume will paint the eyes and thoughts of readers with the key-strokes that have the potential to transform the philosophical understanding and common knowledge of art and aesthetics itself. These articles show in one way or another how behavioral aesthetics is at once a domain of *techne* (technics, technology, science and the arts); it is a domain of desire (from its infinitude and incalculability in aiming towards

aesthetic judgment to its calculated manipulation by cultural and algorithmic industries); and that of know-how, or *savoir-faire*. In gesturing towards the inextricability of art and behavior, what is implicitly and explicitly raised is the question of the functions and dysfunctions of aesthetics in the contemporary age, an age in which the biosphere is fundamentally threatened by a technosphere whose consumerist macroeconomic orientation is driven precisely by the power of digital and audiovisual technologies to circumvent the nexus between behavior and aesthetics.

Daniel Ross & Adrian Mróz

“The Polish Journal of Aesthetics” and Adrian Mróz would like to thank Les Impressions Nouvelles for granting the journal the right to reprint the two translated excerpts of *La beauté du geste* included in this volume. We would also like to thank Jean Galard for his agreement as well.

Anaïs Nony*

Racism and Culture in the Age of Techno-Aesthetic Supremacy

Preface

A society has race prejudice or it has not.
There are no degrees of prejudice.

Fanon 1988, 41

In other words, high time for the retrieval
of the space of the political.

Spillers 2006, 20

For the 2019 Edition of the Investec Cape Town Art Fair, Lebohang Motaung's *Formation* presents the viewer with a piece that used synthetic hair on canvas. Long single lines of hair and pencil traces give shape to female figures seen from the back, at an angle that offers only a glimpse of their faces. Three canvases are placed in a pyramidal shape and linked together via meters of hair twisted in braids that unify and tie these women up in a formation. The title of Motaung's piece recalls American singer Beyoncé's single *Formation*, which won the Grammy Award for best music video in 2016 and was performed in front of millions of spectators for the half time of the Super Bowl that year. For the show, Beyoncé wore a bandolier of bullets,

* University of the Western Cape in South Africa
Center for Humanities Research
Email: anony@fsu.edu

similar to Michael Jackson in his Dangerous World Tour, and her back-up dancers were dressed in black with berets and afros in homage to the revolutionary Black Panther Party of the 1960s. *Formation* references the Black Lives Matter (BLM) movement and hurricane Katrina, which killed nearly 2000 people in the poorest and most segregated neighborhoods of New Orleans in the United States in 2005. The video starts with a parental advisory for “explicit lyrics,” quickly followed by a voice-over asking “what happened, at the New Orleans,” while Beyoncé is seen on top of a sinking police car. Accused of being anti-police in her video and too political at the Super Bowl, Beyoncé forced the audience to see the event, paradigmatic of American culture, from a radically different perspective. The Super Bowl is the championship game of the National Football League (NFL), one of the most watched television broadcasts of the year with over 100 million viewers. It is also the time when new commercial advertisements are released, with an average cost of \$ 5.2 million for 30 seconds of air time. The Super Bowl is also statistically the worst day for domestic violence in the United States.

In this performance, Beyoncé blurred distinctions between the cultural object as entertainment and the embodied art object as a form of political action. The live spectacle turned into a cultural critique that positioned violence over racialized bodies at its center. It confronted white supremacy by disrupting the means through which this event could become, through her performance, a million-viewer platform to advocate for social change. As a living expression of white supremacy, the critiques of Beyoncé’s *Formation* as anti-police are symptomatic of American society’s refusal “to take anything very seriously,” as James Baldwin would say, or more importantly perhaps, the incapacity of the American people to “bear very much reality” (Baldwin 2010, 23). If the function of art was to disturb the status quo, as Coco Fusco and Guillermo Gómez-Peña’s satirical performance on Western concepts of the primitive Other brilliantly embodies, white supremacist mass culture in the United States, as exemplified by the Super Bowl, sustains a certain ignorance of the reality from which protest and critiques emerge. The fact that one event of mass culture can decide what is appropriate and what is not is a new form of dictatorship in the realm of freedom of expression. When American football star Colin Kaepernick took a knee during the national anthem in 2016, he did so in solidarity with the many black lives that are taken by police brutality in the US. His protests against racial injustice during the national anthem of NFL games sparked wide protest against the players for being “anti-American,” while little was said about the urgency of their political statements. It was okay for Kaepernick to be a black player

for the NFL but not a player advocating for black lives. After the Kaepernick case, players were not only advised not to take a knee, but the President of the United States advised the NFL to fire any players that were “disrespectful” during the national anthem. Taking a knee became an insult to white mass culture supremacy and the killing of black people by police just something to keep out of the field, out of the sport industry, out of any platform that links mass entertainment and multi-million-dollar companies. Kaepernick, much like Beyoncé, advocated for social change and in doing so disturbed the function of mass cultural events: their actions were perceived as “disrespectful,” as an affront, because techno-cultural supremacy is geared toward dictating where, how, and by whom reality can be addressed, exposed and challenged.

After her single *Formation* came out, Beyoncé and her life-long partner Jay-Z recorded *Apeshit*, the lead single of their studio album *Everything is love* from 2018. The video for *Apeshit* received eight nominations at the 2018 MTV music video awards and a Grammy nomination for best video. Set in the Louvre museum in France, the video uses the superposition of pop culture and what is still understood as “high culture” to address the very specific political nexus that such an encounter produces. The Louvre not only houses some of the most economically valuable works of art; it is also one of the most important examples of cultural appropriation. The museum maps out entire civilizations that France’s colonial empire subjugated for the sake of its own supremacist enlightenment. Tombs, stolen from Egypt, are placed in the lower level of the world’s largest art museum and former residence of French kings. In the video, Beyoncé reclaims a place of Afrointelligibility by paying tribute to figures that are usually left in the shadow of white portraits. These portraits, as the Guerilla Girls have pointed out, are usually ones made by white male painters. In their poster “Do woman have to be naked to get into the Met. Museum?,” the anonymous group of feminists and female artists hijacked the image of Jean-Auguste-Dominique Ingres’ *La Grande Odalisque*, a painting on display in the Louvre Museum. They appropriated the visual language of advertising to create thirty posters that expose both sexual and racial discrimination in the art world. Portraits in museums such as the Met and the Louvre, as the Guerilla Girls reveal, are about 95% made by white male painters, while 85% of nudes are female. In their poster campaign, the Guerilla Girls, like *Apeshit*, challenge the hierarchies of cultural values that shape the curatorial politics of these institutions. But in the case of Beyoncé, a new emphasis is made on Black beauty, on Black goddesses, on Black bodies, envisioned as works of art in their own rights by Black artists.

To return to Motaung's *Formation*, the artist, like Beyoncé, both reclaims an Afrocentric aesthetic that challenges the supremacist tendencies imposed by Western colonial values. In her work, Motaung embraces the past and makes visible a link with the future through the pyramidal structure of the triptych. The central piece stands much higher than the two other canvases even though the three frames are linked together by the longer braid of hair. If a person were actually wearing the braids, they would probably reach the floor. And yet, the braids are suspended in a formation above the ground, inviting the viewer to look at these anonymous figures through the arrangement of their linkage. Through these linking braids, artist and hair-stylist Lebohang Motaung reclaims the beauty of her practice by exposing the technique of braiding hair as a work of art in and of itself. By grounding technique and aesthetic as Afrintelligibility, Motaung's work challenges assumptions about beauty and blurs the distinction between the cultural object as aesthetics and the embodied art object as a form of political action. Afrocentrism, as Molefi Asante suggests in *Afrocentric Idea*, is about positioning African ideals "at the center of any analysis that involves African culture and behavior" (Asante 1987, 6).¹ In the age of mass cultural phenomena and technological supremacy, Afrocentrism is as much about drawing new paradigms from the past, such as locating African cultural heritage in the Kemel/Egyptian, as opposed to the Roman/Greek canon, as it is about projecting a path toward a future where mass culture can account for and create new reflections that engages societal changes. If white supremacy grounds its neo-colonial devices in Western mass entertainment, it is now time to unleash the potential of newly-forged political platforms where culture ignites critical awareness of urgent and needed social change.

A long-standing effort has been made by critical race theorists to bring awareness to the reciprocal operations of culture and racism. In *Toward the African Revolution*, Frantz Fanon interrogates racism as the "most visible" and "crudest element of a given structure," underlining the importance of studying the normative values that continue to dictate the ways in which cultures cultivate racism. The video of *Apeshit*, as much as Motaung's *Formation*, are forms of cultural production that subvert the doctrine of cultural hierarchy and seek to undo the colonial enterprise of deculturation. For Fanon, such enterprise points out the logical consequences of cultural oppression in terms of closure and fixation. He uses the term "mummification" to highlight the ways in which native cultures are forced to be present as past

¹ Cited by Spillers 2006, 9.

instead of becoming in the future. The imposed cultural values of a dominant system seek the appropriation of the native culture *as* past. In that moment the native is cast as the exotic other, a “thing” or “curiosity,” and not a structure in which new formations, new operations can be cultivated and cared for (Fanon 1988, 35). Exoticism has no dynamism, but rather embodies the fetishist tendencies that colonizing nations create to sustain their own systems of cultural dominance. On that theme, the 1992–1993 performance of Coco Fusco and Guillermo Gómez-Peña titled *The Couple in a Cage: Two Amerindians Visit the West* is insightful. The artists had planned to “live in a golden cage for three days” and present themselves as “undiscovered Amerindians from an island in the Gulf of Mexico that had somehow been overlooked by Europeans for five centuries” (Fusco 2011, 39). They called themselves “Guatinauis” from “Guatinau” and performed “‘traditional tasks,’ which ranged from sewing voodoo dolls and lifting weights to watching television and working on laptop computers” (Fusco 2011, 39). The performers had a donation box in front of the cage, and for a small fee, Coco Fusco “would dance (to rap music)” and “Guillermo would tell authentic Amerindian stories (in a nonsensical language)” (Fusco 2011, 39). Two “zoo guards” were also part of the performance, acting as interpreters, speaking to visitors, and taking the performers to the bathroom on leashes. The performance was shown internationally and was intentionally presented at institutions that have historically shaped the landscape of “colonial fantasies” (Fusco 2011, 44), such as Covent Gardens in London, the Smithsonian’s Museum of Natural History in Washington D.C., the Australian Museum of Natural History in Sydney, the Field Museum in Chicago, and the Fundación Banco Patricios in Buenos Aires, among other venues. In their performance, the cage becomes the metaphor for their condition, “linking the racism implicit in ethnographic paradigms of discovery with the exoticizing rhetoric of ‘world beat’ multiculturalism” (Fusco 2011, 39).

Fusco and Guillermo’s performance reenacts the setting of human zoos, which were instrumental in legitimizing Eurocentric aesthetic, cultural, and intellectual values. The performance highlights the fact that the history of human exhibitions is the history of both colonial and cultural empire. Since Christopher Columbus and the six human samples he brought back to King Ferdinand and Queen Isabella as living proof of the success of his discoveries, humans are the means through which more funding was granted to the colonial explorer, paving the way for the cultural and aesthetic category of the “exotic,” which shapes the imperial contours of Otherness. Throughout the year-long tour of their performance, Coco Fusco and Guillermo Gómez-

-Peña's cage was the "blank screen onto which audiences projected their fantasies of who and what" they were (Fusco 2011, 47). The critical importance of the performance was not so much about what they were doing in their cage but about how the audience reacted to the conditions in which they performed, conditions that unleashed a strong "colonial unconscious" from within the visitors and the institutions that agreed to host them. The performers had created a highly self-conscious work; they did not anticipate that members of the audience would actually take their work literally, sparking the imagination of so many "colonialist perverts."² While the original goal of the performance was to reveal the "construction of ethnic Otherness as essentially performative" (Fusco 2011, 44), the performers quickly shifted their attention to their audience's behaviors. Taken seriously, the setting of the cage gave credibility to stereotypes of "primitive peoples" that are alive in the colonial unconscious of many visitors. Reinforced in their assumptions of white supremacy, they looked at the cage as a means through which "the living expressions of colonial fantasies" (Fusco 2011, 44) could be embodied.

The work of Guillermo and Fusco's performance, like Beyoncé ongoing political engagement, calls for an awareness of the precarious and uncertain line between spectator and witness. In *Scenes of Subjection*, Saidiya V. Hartman draws on "the spectacular character of black suffering" in nineteenth-century America to address the "corporeal politics spanning the divide between slavery and freedom" (Hartman 1997, 3–9). In her book, Hartman accounts for forms of violence in representations of oppression such as public practices of slavery and other cultural strategies of domination. Her approach provides an opportunity to recognize the performative power of history outside of dominant documents, official archives, and other imposed accounts that shape the politics of representation. Hartman refuses to exploit the "shocking spectacle" (Hartman 1997, 4) of slavery, aiming instead to highlight the staging of black suffering as a performative tool that trans-

² Coco Fusco glosses the term "colonialist pervert" when she tells a story about "an internationally known French ethnographic filmmaker" who took her to the nearly abandoned house he had grown up in after she had previously arranged to meet in a public place, for safety purposes. The filmmaker had told her that he had work for her and they had to leave to go "meet with the producer for a reading of the script." When they arrived, he removed all his clothes except his underwear and started to mow his lawn. He told her he wished he could film her naked here and that she should take a basket and go "gather nuts and berries." As she realized that he was completely immersed in his fantasy world, she waited for him to finish and asked for a ride to the closest train station. He did take her, "but not without grabbing (her) and ripping (her) shirt as (she) got out of the car" (Fusco 2011, 59).

formed racist crime into spectacle and allowed the dominant order of white supremacy to be sustained beyond slavery. Together, Hartman's work and Fusco and Guillermo's performance reexamine the fine line between spectator and witness to better account for the cultural orchestration of violence in the staging of Otherness.

The technical implementation of cultural racism has reached a new level of domination through newly engendered forms of communication. Racism relies on the technical implementations of representational settings, from the reenactment of the power dynamics of chattel slavery to how images of minorities are structured and presented as "self-evident truths" in the cinema (Akomfrah 2015, 58). The relation between racism and culture should be investigated from the technological revolutions that shape the social fabric of society. The very substance of racism is ruled by the implementation of cultural hierarchies supported by technological means that produce visibility and reinforce discriminatory practices of invisibility. The supremacy of the mass culture industry that brought about the advancement of digital platforms of production has added a new layer of complexity to Fanon's critique of industrialization as that which imposes a "new attitude upon the occupant" (Fanon 1988, 35). For Fanon, the imbalance of power between occupant and occupied culture is located in the perfectibility of the means of production, which camouflages "the very techniques by which man is exploited, hence of the forms of racism" (Fanon 1988, 35). The occupying culture not only assimilates native techniques for the sake of its own knowledge advancement, as Gayatri Spivak highlights with her term "native informant," it also forces the Afro-Latin-Native cultures to become the assimilating whole where racist culture dumps its values. Cultural assimilation is thus a double-edged sword that sculpts the methods of a racist culture never far from reinventing itself through technologically imposed supremacy. As such, racism in the age of techno-aesthetic supremacy, a supremacy that relies on both technological devices and aesthetics values, is made both of cultural and economic elements that are sustained by ever evolving means of oppression. The increasing imbalances of cultural systems of values and the world-scale dominance of Western-centric cultural industries, is sustained by the central position that technique holds in subjugating some cultures to others in the name of scientific advancement and economic independence. The more perfect the means of technical production appears, the subtler the camouflage of inequalities that is performed. Racism thus becomes a question of modes of technical existence.

Acknowledgments

I acknowledge the Centre for Humanities Research (CHR) of the University of the Western Cape for the Andrew W. Mellon Postdoctoral fellowship award that facilitated the writing of the present article. All credit for DHET purposes for this article is attributed to the CHR at UWC. This work was also supported by the National Institute for the Humanities and Social Sciences.

I would like to thank Erika Weiberg for her helpful comments and careful edits on this piece.

Bibliography

1. Akomfrah John (2015), "Black Independent Filmmaking: A Statement by the Black Audio Film Collective", *Black Camera (New Series)*, 6 (2), pp. 58–60.
2. Baldwin James (2010), "Mass Culture and the Creative Artist: Some Personal Notes", [in:] *The Cross of Redemption. Uncollected Writings*, New York: Pantheon Books, pp. 23–26.
3. Asante Molefi (1987), *The Afrocentric Idea*, Philadelphia: Temple University Press.
4. Fanon Frantz (1988), *Toward the African Revolution: Political Essays*, trans. Haakon Chevalier, New York: Grove Press.
5. Fusco Coco (2011), "The other history of intercultural performance", [in:] Rebecca Schneider, Gabrielle Cody (eds.), *Re: Direction. A Theoretical and Practical Guide*, London: Routledge, pp. 37–63.
6. Hartman Saidiyah V. (1997), *Scenes of Subjection. Terror, Slavery, and Self-Making in Nineteenth-Century America*, Oxford: Oxford University Press.
7. Spillers Hortense J. (2006), "The Idea of Black Culture", *CR: The New Centennial Review*, 6 (3), pp. 7–28.
8. Spivak Gayatri (1999), *A Critique of Postcolonial Reason, Toward a History of the Vanishing Present*, Cambridge: Harvard University Press.

Daniel Ross*

Mind Snatchers of the Anthropocene. Can Aspects Dawn within the Gulag Architectonic?

Abstract

It could be said that the real challenge of the Anthropocene is to confront the question of a converted gaze, in a way that requires and exceeds Kant's notion of an extraterrestrial standpoint of standpoints. In a world where political points of view seem contained within impenetrable filter bubbles, how might Wittgenstein's account of aspect-blindness with respect to bistable percepts point us to a new understanding of the loss of disparation caused by what Rouvroy and Berns call algorithmic governmentality? Husserl's account of the melody as paradigmatic temporal object, which is fundamental to Stiegler's account of the controllability of perception, desire and behavior, could be revised in such a light, because the peculiar dimensionality of the visual image is still crucially at stake in any new geopolitics of the sensible to be found or invented in a world dominated by the ubiquitous digital screen.

Keywords

Anthropocene, Immanuel Kant, Ludwig Wittgenstein, Algorithmic Governmentality, Edmund Husserl, Bernard Stiegler, Peter Szendy

* Centre Pompidou in Paris, France
Institute of Research and Innovation
Email: djrossmail@gmail.com

Any question of a ‘revolution’ in the Anthropocene confronts two difficulties of vision: a simpler difficulty and a more complex difficulty. The simpler difficulty consists in imagining the ultimate cataclysm towards which the Anthropocene may well be hurtling: we can certainly understand that it “is possible that entropy will put an end to all life on earth” (Husserl 2011, 131), and that this possibility is currently being hastened in an extreme way. What’s more, there is undoubtedly a *will* to conceive this possibility, just as our unconscious imagination must at some level *want* the nightmares that present to our sleeping selves the negative prospects that must be conjured so as to find within them a means of avoidance, a buried wish functioning as a spur. Yet the difficulty remains of *really imagining* that such nightmares *must* concern us *right now*, when they are occurring at the microscopic level of gas molecule accumulations and the telescopic level of planetary systems.

The more complex difficulty, however, consists in *imagining a realizable exit* from this nightmare, through which to find the will towards a *reasonable belief* in such a revolution. *This* difficulty seems *so* complex, and the belief to support it *so* unsustainable, that it is perpetually tempting to simply luxuriate in prefabricated nightmares, to flee into denial, to tend one’s own garden, or to fall into despair or dread: such is contemporary nihilism.

Is a ‘conversion of the gaze’ possible, through which our very collective dread can function as just such a spur, effecting a shift from the plane of the ordinary to that of the extraordinary, in order, like a seer, to “see what is invisible” (Vernant 2006, 117)? If such a capability is not superhuman, it is at least “sur-human” in the way Bernard Stiegler has evoked, and that he relates to a “sur-realist” (Stiegler 2017b, 79) vision of the cosmos—a locality capable of harbouring highly improbable possibilities in which one can still manage to believe, the possibility of realizing such singular noetic improbabilities being the very definition of neganthropy.

What makes this kind of revolution so difficult to envisage is the unprecedented character of its spatial and temporal coordinates: on the one hand, it is absolutely urgent, while, on the other hand, it must be perpetual and undoubtedly requires vast amounts of time and patience to be addressed. Any new neganthropic leap must address these dimensions, which are ‘telescopic’ both temporally and spatially: as Immanuel Kant says in *The Conflict of the Faculties*, it must have “regard to the whole scope of all the peoples on earth,” a regard that reveals “the prospect of an immeasurable time” (Kant 1979, 161).

It is, then, a question of the *conditions of possibility* of such a conversion of the gaze, through which entropes could be converted to negentropes¹ capable of releasing a revolutionary will of immeasurable spatiotemporal extent. Such questions are implied in Edmund Husserl's reflections on the earth ark: if the world exists "in the ideality of infinity" (Husserl 2011, 117), beyond "what is experienced of the world *from this or that side*" (Husserl 2011, 119), and if, in the "*primordial* shape of its representation [that is, initially, in the beginning], the earth itself does not move" (Husserl 2011, 118), and if the earth, as our irreducible macrocosmic, terrestrial locality, is always *where we are* even if we are *out there*, travelling to her moon, nevertheless, Husserl argues, after Copernicus and the telescope, it *does* in a certain way *begin* to move, in a sense that *we* would argue comes to involve not just its cosmic displacement but its Anthropocenic mutation. But this alteration in the shape of the earth's representation does not follow *automatically* from the telescopic gaze, according to Husserl, but only from a *second* moment, from the *extra-terrestrial conversion* that the gaze permitted by such an invention makes possible:

Only when we think of our stars as secondary arks with their eventual humanities, etc., only when we figure ourselves as transplanted there among these humanities, perhaps flying there, is it otherwise (Husserl 2011, 127).

If addressing the question of an exit from the Anthropocene necessarily involves a conversion of the gaze, how might this also involve Husserl's 'secondary arks'?

The extra-terrestrial and the philosophicive

Peter Szendy, too, approaches the question of the conversion of the gaze in *Kant in the Land of the Extraterrestrials: Cosmopolitical Philosophicisms*. He notices that this is how the French Revolution functions for Kant in *The Conflict of the Faculties*: as an act of *publicity* capable of fostering "a wishful *participation* that borders closely on enthusiasm," or, in other words, an "aesthetic point of view" through which "a revolution's movement of worldwide expansion can be envisaged or seen in advance" (Szendy 2013, 96). Kant argues that, for those like himself who did not *actually participate* in the

¹ On the concepts of 'entropie' and 'negentropie,' alternative names, perhaps, for what Stiegler refers to as 'stereotypes' and 'traumatypes,' see: Ross (2019).

French revolution, *apprehending* the revolution via the aesthetic conditions of publicity may open up an even broader participation, one capable of extending the localized possibility of perpetual progress exposed by the French revolution to the macrocosm consisting of all the peoples of the earth.

That for Kant this worldwide extension of progress implies a cosmopolitanism resides in mankind's unsocial sociability, in the fact that, as he says in *Anthropology from a Pragmatic Point of View*, people "*cannot do without being together peacefully and yet cannot avoid constantly being objectionable to one another:*" living *together* requires a cosmopolitanism "that is constantly threatened by disunion but generally progresses toward a coalition" (Kant 2006, 236; Szendy 2013, 47). What would necessitate a cosmopolitics would thus be the perpetual problem of managing the tendencies and counter-tendencies involved in the relationships of care between the microcosms that we are and the macrocosms that we produce.

The problem is how to get *from* this 'intra-terrestrial' standpoint, which gropes in darkness to coalesce amidst the clash of micro- and macrocosms, to an extra-ordinary standpoint, an ideality of infinity that would make possible a *truly cosmic* cosmopolitics. Szendy shows how the extension of this perpetual problem to all the peoples of the earth seems to imply the need for a cosmic gaze capable of encompassing this proliferation of standpoints within its purview, and, indeed, Kant frequently invokes this extra-terrestrial gaze (e.g. Kant 2006, 237–38): a *wholly other telescopic gaze* of the extra-terrestrial is required, one intimately haunted by this infinitely faraway regard, if we earthlings hope to achieve a conversion through which to escape the local limits of our microcosmic preoccupations.

Kant argues that the incomparability of human beings lies in our lack experience of any *non-human* rational beings: "we have no knowledge of the *non-terrestrial* beings that would enable us to indicate their characteristic property and so to characterize this terrestrial being [that we are] among rational beings in general" (Kant 2006, 225; Szendy 2013, 47). This implies that the question of cosmopolitan revolution requires the aesthetic judgment of the beautiful, as a standpoint that can arise *only* from a process that is at once purely individual and yet inherently social: in short, it requires a process of psychic and collective individuation aiming, through a process of 'universalization,' at consistences. But it also requires the sublime, because, as what *exceeds* the limits of the capacities of our imagination, the sublime causes every standpoint to tremble: only through this unsettling of every perspective, effected by the experience of the unimaginable, would

it become possible to operate a 'pure reason' speculating in the direction of an immeasurable cosmology capable of authorizing an infinite cosmopolitanism.

Hence Szendy tries to sketch out a pathway "from the aesthetic to the political by way of a speculative cosmology," finding that it is "as if the *each-and-every-one* on the basis of which the judgment of taste is oriented could include humanity as such only when taking a cosmotheoretical detour through the *wholly other* that inhabits extraterrestrial globes" (Szendy 2013, 79). Insofar as this detour through the extra-terrestrial is necessary in order to imagine a cosmic cosmopolitanism capable of staving off the threat of disunion, of embracing the whole earth, Szendy refers to the imperative of cosmopolitical *philosofiction*. How might this cosmopolitical filosofiction marry or fail to marry with Stiegler's sur-realist cosmology composing micro- and macrocosmic scales from the quantum to the astrophysical? What Szendy and Stiegler undoubtedly share is the thought that this irreducible fictive element implies that cosmopolitics must be *essentially* aesthetic—*cosmetic*. Thus Szendy concludes that, today, any revolution must be enacted on a "terrain where a war is being waged whose stakes are a veritable *geopolitics of the sensible*" (Szendy 2013, 79).

The Gaze of the Clone

The terrain on which this cosmogeopolitics of the sensible is being conducted is the mnemotechnical milieu that, today, amounts to the technosphere of what Heidegger called *Gestell*. But it is also each of the individual microcosms that are the psychic apparatuses that each of us form in our inextricable entanglement with the complex socio-technical bodies that we produce. But these complex 'exorganisms' *also produce us*: the possibility that our globalized technical systems might anticipate and post-produce our very psychic microcosm to such an extent as to *automate the will itself* thereby threatens to make this geopolitical war of the sensible unwinnable.

As Peter Sloterdijk has pointed out, this automation of the will has, seemingly inevitably, led to a consumerism in which "what spirals out of control" is the elimination of all final causes: "an end use devoid of ulterior motives" (Sloterdijk 2013, 209). Our descent into this vortex created by the automation of will has now crossed a threshold after which we can indeed speak of an age of 'post-truth'—the nihilistic symptom of a loss of the will to *care* for the *difference* that knowledge or truth *makes*.

The primordial possibility of such an age, however, ultimately derives from the fictive element involved in the way that the microcosms that we ourselves are apprehend the world, from the fact that every cosmopolitics involves a cosmetics—as Szendy says, a “touch-up of the sensible” (Szendy 2013, 150). It is this fictive, cosmetic element that makes ‘post-truth’ possible, because it is both the condition that makes *truth* possible in the first place *and* what makes possible the conditioning of the apprehension of the world. If truth emerges from the convergence of different and singular microcosms, then the automated will threatens to so synchronize experience as to eliminate difference and hence threaten the very possibility of veridical processes, leading to *in*-difference to the notion of truth but equally to violent assertion of the *hyper*-difference of each-and-every-one’s own *idiotic* ‘truth.’

This is for Szendy what dawns on viewers of the 1956 film, *Invasion of the Body Snatchers*, where one beholds a biopower of mechanical reproducibility, a hyper-synchronized process of “metamorphosis without change” (Szendy 2013, 83), a biotechnological, pheromonal anthill effected through a dual movement that snatches bodies and creates a ‘sort of copy.’ But what this mimetic contagion really concerns is the snatching of *minds*: eliminating difference and establishing the reign of the ‘they,’ a transformed and reticulated race of each-and-every-one. For Szendy, for whom film is “above all an affair of point of view,” and “telescopic” in the sense of being “stretched toward” a distance “beyond points of view,” “however close it may be” (Szendy 2013, 129), *Invasion of the Body Snatchers* reveals the invaders who do not just come from outside, but inhabit and condition our own point of view: the film allows *our* “indifference to be seen” via the indifferent gaze of the clone, “as if the director’s lens were desperately trying to grasp the ungraspable difference between difference and indifference, the indistinct distinction that cannot be seen but that instead *looks out at us, concerns us* [*nous regarde*]” (Szendy 2013, 84).

The Two-movie Reality

For Stiegler, Husserl’s account of the melodic temporal object implies this fictive element in our apprehension of the world—the fact that secondary retention forms the selection criteria for the anticipation and post-production involved in primary retention and protention, which implies that ‘immediate’ perception involves an *irreducible element of imagination*. Furthermore, tertiary retention introduces *controllability* into the play of pri-

mary and secondary retention and protention, opening up, through the exactitude of mnemotechnics, the processes of adoption and interpretation that lie at the root of politics, law and rational knowledge as the material transcendence (so to speak) of the mere *aspects* provided by individual viewpoints, but where the very same potentials for control also make possible the dissolution of such processes.

The melody is exemplary not just because it is a *temporal* object in the sense that, *like* consciousness, it exists only in the duration of its flowing through consciousness: in addition, the experience of the *aural* temporal object *negates* the question of standpoint. In principle, it does not matter where one is standing or how one is 'physically oriented' or how one may be 'directional' (in the sense of Heidegger 2010, §23) in relation to received aural data. Husserl's example of the melody works *best* if *the listener's eyes are closed*. Bracketing the question of viewpoint is the very way of seeing that what determines the singularity of bearing aural witness are different *horizons of expectation*, rather than varying spatial coordinates, and that these differential expectations derive from the singularity of one's own past.

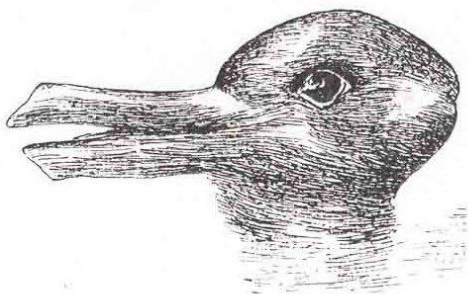
Stiegler addresses this, for example, in *Aimer, s'aimer, nous aimer*: if different witnesses provide different testimonies about the events of an accident, it is, despite being first and foremost something they have witnessed in the sense of being something they have *seen*, *less* to do with their locations on 'this or that side' (as Husserl puts it) of the incident in question, and *more* to do with their different 'performances' of the act of witnessing (Stiegler 2009, 61–62). When we watch a film, this account of what *counts* in the experience of the industrial temporal object likewise has to *assume* that it is reasonable to *discount* the possibility that experiential differences are due in any fundamental way to *where* in the theatre one is seated, or to *what part* of the screen our gaze is directed at.

This assumption that the question of viewpoint can be neutralized may well be generally reasonable. In relation to the 'conversion of the gaze,' the question of the *conversion* is probably more important than that of the *gaze*. Nevertheless, given that the subject of these conversions are all those psychic individuals who are each *localized microcosms*, there may be something left to say about what *difference* it makes to this account if we choose not to take aural perception as paradigmatic. Is what counts in the extra-terrestrial gaze simply the fact that it observes from a viewpoint sufficiently broad as to be capable of taking in the multiplicity of terrestrial viewpoints in their multitudinous aspects? Or does such a gaze in fact see something *else*, something other, a genuine shift in the character of insight brought about by training its

telescopes *onto the terrestrial here but as if from the extra-terrestrial 'out there'?* Would such a potential for extra-terrestrial *ex-sight* consist, then, in Heidegger's claim that "Da-sein is initially never here, but over there" (Heidegger 2010, 107, German pagination; see: Stiegler 2017a)?

The threat of disunion contained in unsocial sociability is for Kant the condition of possibility and necessity of cosmopolitanism. But in the age of post-truth, the automated, performative fictioning that surrounds every political narrative means that it becomes a pure condition of impossibility: two utterly divergent audiences (where the condition of being an audience tends to eliminate the condition of being a citizen) perceive the very same mediatized political narratives, but from what seem diametrically and rigidly incompatible viewpoints. The fading away of every veridical process would then lead less to opaque fog² of truth than to its ossification, where each perspective proves absolutely irreconcilable with all the others: one commentator has described this as the advent of a 'two-movie reality', a situation in which *two movies play on one screen*.

This two-movie reality should be understood *firstly* as a *reduction to only two movies*, a fossilized *state of the union* where the same givens lead to rigid, brittle perceptual oppositions, and so to the materialization of the threat of *absolute disunion*, that is, uncivil war. What follows is thus a reflection on the specificity of *visual* temporal objects, via Wittgenstein's notion of 'aspects.' If, as has been suggested, the cosmopolitical question of the geopolitics of the sensible today concerns the conditions of possibility of a 'new perspectivism,' then we must ask: is or is not a perspective the same thing as a point of view?



² Husserl wonders what difference it would have made to our cosmological conceptions had the earth's atmosphere been foggy rather than transparent and the stars therefore invisible (Husserl 2011, 129).

The Duck-rabbit

The duck-rabbit, which Wittgenstein calls a 'picture-object' (Wittgenstein 1968, 194), is an example of a so-called 'bistable percept.' It is not, strictly speaking, a temporal object: it does not exist as a durational flow in the way a melody does. Yet there *is* something temporal about the way this image is apprehended, in the sense that the mutual exclusivity of the duck and the rabbit is *necessarily* experienced across the span of *more than one moment*: hence Wittgenstein distinguishes the 'continuous seeing' of an aspect from the 'dawning' of an aspect (Wittgenstein 1968, 194). *What is it* that changes when an aspect dawns, what kind of *movement* does this involve, and *where* is this change located?

What the bistable percept picture-object makes plain is the possibility that the irreversible dawning of a second aspect (the duck or the rabbit) may be "the expression of a *new* perception and at the same time of the perception's being unchanged" (Wittgenstein 1968, 196). The *external stimulus* has not changed—the perceptual given remains identical *across the temporal divide of a shift in perception*—yet Wittgenstein does not conclude that perception would be *subjective*:

And above all do *not* say "After all my visual impression isn't the *drawing*; it is *this*—which I can't shew anyone."—Of course it is not the drawing, but neither is it anything of the same category, which I carry within myself.

The concept of the 'inner picture' is misleading, for this concept uses the '*outer* picture' as a model (Wittgenstein 1968, 196).

There is no 'inner picture' that we might hope to divorce from the tertiary retention: the picture-object is found in some place that we can locate neither internally nor externally. As Stiegler insists:

The image in general does not exist. What is called the mental image and what I shall call the image-object (which is always inscribed in a *history*, and in a *technical* history) are two faces of a single phenomenon. They can no more be separated than the signified and the signifier which defined, in the past, the two faces of the linguistic sign (Stiegler 2002, 147).

Wittgenstein somewhat imprecisely (or overly precisely) describes the dawning of an aspect as "half visual experience, half thought." To the extent that it *is* something produced in me, it must be "a sort of copy, something that in its turn can be looked at [...]; almost something like a *materialization*"

(Wittgenstein 1968, 199). And because we produce this *copy* of a tertiary retention, and because we can look at it, that is, *reiterate* it, are we not already *interpreting* the picture-object?

But, he then asks, “how is it possible to *see* an object according to an *interpretation*?” (Wittgenstein 1968, 200). What *more* is involved in carrying out such an interpretation? If the dawning of the duck or the rabbit can happen in a flash, nevertheless, as he then notes, there are styles of painting that immediately convey meaning to some people but not to others (not to him). He concludes: “I think custom and upbringing have a hand in this” (Wittgenstein 1968, 200). The duck or rabbit dawns due to knowledge acquired of the form of these animals, but, more generally, due to inscription in a practice of familiarization with a *way* of gazing. It is, in other words, overdetermined by the circuits of transindividuation through which we learn the capability that, alone, *allows* aspects to dawn.

Wittgenstein’s “description of what is seen” (Wittgenstein 1968, 200) thus largely amounts to an account of phenomenological intentionality, the intentionality involved in the dawning of aspects as ‘seeing as:’ we can see this picture-object *as a duck* or *as a rabbit*; we can see it *as* ‘like *this*’ or ‘like *that*.’ The relationship of such an account to the melodic temporal object is made even clearer when Wittgenstein himself raises the example of a musical theme, which, on different occasions, as he says, we can *hear as* ‘a march’ or *as* ‘a dance’ (Wittgenstein 1968, 206).

The duck-rabbit image has also been used by Jeffrey Alan Gray to indicate the ‘unconscious intentionality’ involved in the production of perceptual experience: that aspects “spring into consciousness fully formed” shows that this production involves an intentional mechanism operating behind the back of consciousness (Gray 2004, 40–46). This notion of unconscious intentionality, which is nothing other than an account of primary retention, is for Gray intended to bridge the gap between the neurobiological level and the conscious level, but without Gray recognizing that the selection criteria must be supplied by secondary retention, nor that what opens this gap in the first place is tertiary retention. He does not convey the sense that this apprehension of the image is necessarily inscribed in a history, and a *technical* history. Perhaps Wittgenstein is open to the same criticism, yet it is also true that the latter’s account of the intentionality involved in seeing *as* or hearing *as* is an ability that

[...] would only be said of someone *capable* of making certain applications [...]. The substratum of this experience is a mastery of a technique (Wittgenstein 1968, 208).

From this it follows that the dawning aspect, the duck *or* the rabbit, is not just something that is *in* the bistable picture-object: it is “not a property of the object, but an internal relation between it and other objects” (Wittgenstein 1968, 212), which we must *learn* to apprehend. Wittgenstein goes so far as to say: “And I can see it in various aspects according to the fiction I surround it with” (Wittgenstein 1968, 210).

Here, however, we encounter a difficulty. Wittgenstein claims that we *see* according to an *interpretation*, but, surrounding the object with fictive elements, through which we seem to *immediately see* the object *as* duck or rabbit, he wonders if we really *interpret* what we see differently, or whether, on the contrary, we “really see something different each time” (Wittgenstein 1968, 212)? He is inclined towards the latter: the dawning of an aspect *really is* seeing something different, and this is *different* from *interpreting* what we see differently.

Wittgenstein’s reluctance to describe this as interpretation stems from the fact that the difference it involves seems not to reach the threshold of actual noesis. “Having an image” is not interpreting, which is *already thinking*. To see an aspect involves only the power of the imagination, *even if*, as he *also* thinks, it is, indeed, “subject to the will” (Wittgenstein 1968, 213). But even if this dawning does indeed involve an image whose aspect we can *change at will*, it is *also*, in its *initial* occurrence, a change that, a dawning that “produces a surprise” (Wittgenstein 1968, 199). But for Wittgenstein this sur-prehension is not capable of causing the trembling of every comprehension, *even if this is precisely how the duck-rabbit drawing—which is a picture-object, a quasi- or pseudo-temporal object, an image-object and (therefore) a technical object—functions for his own comprehension*.

Aspect-blindness

By taking the bistable percept as a paradigmatic picture-object, just as Husserl took the melody as a paradigmatic temporal object, Wittgenstein succeeds in finding a case of *identical repetition*, as occurs in repeated listening to sound recordings. Wittgenstein’s example is a case of the post-production of primary retention applied to visual perception, but one that is, or at least seems to be, *independent of the question of viewpoint*, while nevertheless being *dependent on the localized conditions of learned capabilities*. For Stiegler, the account of tertiary retention as introducing pharmacological controllability into the play between primary and secondary retention and protention is crucial to any account of the disorders of knowledge and desire

afflicting the Anthropocene. But what difference does Wittgenstein's account of 'noticing aspects' of the bistable percept make to how this cosmopolitical scene plays out?

Having noted that seeing aspects involves imaginative will more than interpretative will, even if it remains dependent on the *learned capability* of seeing something *as* something, Wittgenstein wonders if there "could be human beings lacking in the capacity to see something *as* something," a potential problem he identifies with the name, 'aspect-blindness' (Wittgenstein 1968, 213). One might think that, with this notion of aspect-blindness, Wittgenstein is referring to the kind of visual agnosia that can occur as a result of brain injury. But given that his account of aspectual perception inherently involves learned if unconscious intentionality, what is at stake here is, in fact, the loss of the *transindividuated knowledge that enables someone* to see something *as* something, or, in other words, the possibility of a kind of perceptual proletarianization.

Furthermore, Wittgenstein's concern with aspect-blindness is not, in fact, limited to sense perception. He immediately extends the scope of the question of aspects, and hence of aspect-*blindness*, when he makes a direct connection between "seeing an aspect" and "experiencing the meaning of a word" (Wittgenstein 1968, 214). And this, in turn, is framed in terms of a difference between the *knowledge* involved in the *capacity* to read and the 'information' contained in the words written on the page:

"When I read a poem or narrative with feeling, surely something goes on in me which does not go on when I merely skim the lines for information."—What processes am I alluding to?—The sentences have a different *ring* (Wittgenstein 1968, 214; see also: Stiegler 2017b).

Wittgenstein thus *extends* his account from a kind of visual blindness to a kind of linguistic blindness, itself capable of being generalized to *logos* as the symbolic, the logical, the sensational and the exclamatory character of noetic *différance* in general. Wittgenstein himself, in the passage where he describes the *fiction* with which the viewer surrounds the picture-object, points out that these perceptual questions are not simply physiological, for, here, "the physiological is a symbol for the logical" (Wittgenstein 1968, 210). Even if Wittgenstein does not intend to use the concept of aspect-blindness to diagnose an epoch, this concept nevertheless anticipates, for example, Kaplan's account of 'linguistic capitalism', that is, linguistic proletarianization (Kaplan 2011, 2014).

The virtue of this ‘concept of an aspect’ that is ‘akin to the concept of an image’ (Wittgenstein 1968, 213), then, lies in the way it telescopes its way beyond the visual and the linguistic, to a kind of noetic generality. The dawning of a new aspect exposes the capacity for surprise, showing how a perceptual act that sees the image with a wholly other gaze can make every standpoint tremble, a telescopic, extra-terrestrial gaze with the potential to illuminate the philosophic conditions of the two-movie reality. Is what Wittgenstein is describing by way of the bistable percept not, in this sense, a kind of *general* perceptual *stereoscopy*, a multidimensionality of apprehension, a *dimensionality* that alone makes possible, for example, the experience of a poem’s ‘ring?’ This would be to bring Wittgenstein’s ‘description of what is seen’ into the orbit of Simondon’s account of ‘disparation,’ for which:

To bring about a coherence that incorporates [the separate images of the left eye and the right eye], it is necessary that they become the foundation of a world perceived within an axiomatic in which disparation [...] becomes, precisely, the index of a new dimension (Simondon 1995, 206; quoted in: Stiegler 2016, 128).

As Stiegler has shown, what Rouvroy and Berns (2013) call ‘algorithmic governmentality’ is, above all, the “automatic and computational liquidation of disparation” (Stiegler 2016, 130), which means: the dissolution of all those forms of what Wittgenstein calls ‘custom and upbringing’, or, more precisely, the localized circuits and processes of transindividuation *enabling* disparation, that is, making it possible to notice, as if from an infinitely far-away location, the stereoscopic depth and thickness of aspects, beyond ‘this or that side’, and where there *can be no* ‘horizons of expectation’ without this ‘index of a new dimension.’ Szendy’s ‘telescopic’ implicitly raises the question of the stereoscopic.

The ‘coherence’ of Simondon’s stereoscopic disparation is a matter of how the left and right retinal images compose, whereas for Wittgenstein the mutual exclusivity of the bistable percept shows the *impossibility* of conjoining, in a single ‘moment’ of vision, the two dimensions or aspects of the picture-object’s meaning. Yet this impossibility of overcoming the disunion of the duck and the rabbit does not mean that the two do not co-exist at some point, even if they do so in an ideality occurring only at infinity—*just as* the conjunction of the image perceived by the left eye and the right eye should be, *geometrically speaking*, strictly impossible, meaning that disparation is irreducibly fictive. Sur-prehending the bistable percept as *both-duck-and-rabbit* is, precisely, a question of striving to see, extra-terrestrially, caught

halfway between knowledge and non-knowledge, what is strictly in-visible *from here*, even if we may *feel* sure it is right there, like the figure in the carpet.

As Wittgenstein asserts, in a kind of reversal of Simondon that ends up making the same point, what is 'natural to us' is three-dimensional representation, whereas "special practice and training are needed for two-dimensional representation" (Wittgenstein 1968, 198): in terms of the representational gaze, then, the *reduction* to two dimensions is, in a strange way, *also* the index of a new dimensionality, one that has a long history. Perhaps in this way, too, the reduction to a two-movie reality might, in making plain the absolute failure of vision and imagination effected by the performative automation of the will, contain the potential to be transformed into a cure for our present-day overwhelming aspect-blindness. In any case, at stake in both Simondon's disparation and Wittgenstein's aspect-blindness is a strange kind of step beyond the 'technically possible,' but what Wittgenstein makes clearer, surprisingly perhaps, is that this irreducibly involves practice, training and technique, that is, circuits of transindividuation.

Wittgenstein exemplifies the step beyond information by referring to the 'feeling' with which we apprehend poetry's 'ring'. In addressing the question of the relationship of aspect-blindness to meaning, he asks whether there can really be any kind of 'expert judgment' through which the "genuineness of expressions of feeling' can be adjudicated, and he answers, again rather imprecisely, that 'correcter prognoses will generally issue from the judgments of those with better knowledge" (Wittgenstein 1968, 227). But he immediately gives the kind of knowledge involved, here, it's properly Epimethean character:

Can one learn this knowledge? Yes; some can. Not, however, by taking a course in it, but through '*experience*' (Wittgenstein 1968, 227).

We have the capacity to learn how to discern what is genuine, to *interpret* it on the basis of the knowledge that alone supplies the criteria for such interpretation. Wittgenstein argues that this is no longer a matter of technique, but what he means by this demands careful reading, that is, interpretation:

What one acquires here is not a technique; one learns correct judgments. There are also rules, but they do not form a system and only experienced people can apply them right. Unlike calculating-rules (Wittgenstein 1968, 227).

The technical laws involved in any system involving knowledge never eliminate, and in fact demand, the necessity of judgment, that is, just interpretation. Aspect-blindness involves the forgetting of the criteria of interpretative judgment, the elimination of knowledge as the index of a dimensionality that opens the horizons of expectation which, in turn, grant the possibility of a judgment, *with rules, but beyond facts, not without calculation, but exceeding every calculation*. At stake is the possibility of being surprised by noticing another meaning in one and the same object, *without changing anything* in the object, which, in turn, opens the possibility of changing the rules, even if it is for a game we can never master, and so of materializing a new world.

Wittgenstein expresses this possibility in terms, naturally, of language-games: in the *game* of experiencing a word, we speak not only of meaning, but of *meaning it*, that is, of the *difference* such meaning makes. For Wittgenstein, this is a question of adoption, of ‘taking over’ a meaning from one language-game into another. He writes:

Call it a dream. It does not change anything (Wittgenstein 1968, 216).

In this *dream* of learning and adopting a way of judging the “*genuineness* of expressions of feeling,” a dream that does not change anything, just as for Heidegger the extraordinariness of *authentic* existence is nothing other than a ‘modified grasp’ of the ordinariness of everydayness (Heidegger 2010, 179, German pagination), an almost nothing that nevertheless changes everything, we can locate the whole problem of *repotentializing disparation* (Stiegler 2016, 134), that is, of transforming the aspect-blindness of our ‘two-movie reality’ into a new cosmopolitics of relief, by surrounding it with a fiction capable of fostering *the will required for any possible, improbable, exit from the Anthropocene*.

Conclusion

Hence dawns a sense of how to marry Wittgenstein’s account of the ability to notice aspects with Szendy’s account of the need for a telescopic gaze opening a speculative cosmology on the terrain of a war conducted for a geopolitics of the sensible. Stiegler shows that Husserl erred in excluding tertiary retention from the play of primary and secondary retention, a mistake Husserl partially rectified with his account of the origin of geometry in the

techniques of polishing and writing. The import of this revision, for Stiegler, is that the 'large now' of time-consciousness, by which there is no primary perception of the 'present moment' without an extension from the preceding moment and towards the succeeding moment, becomes the 'very large now' of geometry itself, which exists and can exist only in a transmission of the *knowledge* of geometry in an intergenerational *we*, a transmission that is itself possible only on the basis of a technical history. What Wittgenstein's account of the bistable percept suggests is that there is a kind of 'large there,' an irreducible spatial enlargement that is not a matter of measurable quantities but of openings onto other dimensions of ex-sight, themselves technically conditioned and transmitted through what Wittgenstein refers to as custom and upbringing. Does what Szendy is gesturing towards not amount to a kind of 'very large there,' or, perhaps, to a 'very large *over there*' or '*out there*' whose condition of possibility would be the impossibility of *limiting* this character of ex-sight to noticing just this or that aspect of this or that image?

If, today, the starting point of thinking is not awe or astonishment but dread, then among its most recent manifestations, in a vicious circle of symptom and cause, is undoubtedly the constellation of phenomena summarized by the 'surprise' election of Donald Trump and the sense of having definitively entered an age of so-called 'post-truth.' In this constellation we see, feel and dread the depths of that war identified by Szendy as being conducted on the terrain of a geopolitics of the sensible and requiring a speculative cosmology: it is an aesthetic question firstly because Trump's election was the expression of a feeling, a feeling that can be understood only as a kind of suffering, and a suffering whose source can be understood only as an extreme form of proletarianization—the hyper-proletarianization characteristic of the digital age.

Some might object that this is *no longer* a matter of the 'geopolitics of the sensible,' as Szendy claims, but rather, as Benjamin Bratton claims, the 'geopolitics of the cloud,' and that the crucial cosmological fact is that 'the stack' is the 'mechanism of a disruptive cosmopolitics' leading to the 'catastrophic homogenization' of a 'Megamachine' (Bratton 2014). No doubt this is a false alternative. What we are witnessing today is undoubtedly the takeover of many functions by very high-powered, data-intensive computation, whose unfettered character leads Bratton to invoke Carl Schmitt for his own cosmopolitics, in the name of a 'nomos of the cloud' that, as Stiegler has pointed out, neglects the fact that Schmitt's nomos is firstly and foremost a matter of

the division of land, and so tied to locality and to the earth, an earth that, if it moves, always moves along with the neganthropotechnical beings that we ourselves are (Stiegler 2018, ch. 8).

But even if the geopolitics of the cloud is an entirely legitimate question, even if it means finding ourselves subsisting in a *gulag architectonic* (of data,) imprisoning each 'user' within an archipelago of segmented, particularized cells of their own prefabricated will, it bears remembering that this computational overtaking of functions continues to operate through 'terminals' that will for a long time continue to be *screens*. If these screens within the gulag architectonic can at times function as windows, if they frequently convey text, and if they always operate with data, they nevertheless *also* continue to make use of the synthetic power of the visual image. And if anything, this is now more the case than ever, leading Hossein Derakhshan to argue that with Facebook, for example, we are witnessing a shift from a '*books-internet*' toward a '*television-internet*' (2015). In the becoming-television of the internet, the network or the digital does not replace the audiovisual: as the platform overtakes functions, it *absorbs* the audiovisual. The 'fuel' powering the algorithmic governmentality of platform capitalism may be the data provided by users in the form of digital traces, but the means of solicitation and the products of this pheromonal system are, more than ever, 'picture-objects.'

Does this ubiquity and indeed domination of the visual image legitimate the notion that we require a cosmopolitanism focused on the multiplicity of standpoints? The risk entailed by such a cosmopolitanism is of producing a kind of static perspective founded on a geometry that consists in simply measuring the distances between one point of view and another (according to a calculus of resentment), and which threatens to end with a bad perspectivism of calculable (hence algorithmicizable) differences of interest. It is against the false choice between the geometry of nationalisms and a homogenous internationalism that Szendy draws attention to the horizon of another dimension invoked by Marcel Mauss when he referred to the 'international' (Szendy 2013, 139–140). The twenty-first century translation of this bad perspectivism, as the geopolitics of the macrocosms of the nation-state becomes that of the macrocosms of platform capitalism, is the rise of 'filter bubbles' that ossify into a two-movie reality progressively eliminating the dawning of aspects—until these fragile bubbles burst.

If we can indeed diagnose those who voted for Trump as afflicted with a kind of suffering, and so as expressing a genuine feeling, however ungenue the details of this expression, correcter prognoses depend on seeing that

this was not just, not *only*, a matter of the expression of economic immiseration or the corresponding rise of an anti-systemic, anti-cosmopolitan, insular, nativist point of view, protesting against the rise of the Megamachine. In large measure, the undeniable tendency towards economic poverty is combined with and compounded by processes of immiseration at once symbolic, affective and noetic. What was expressed by this literally *dreadful* election was, in this sense, and more than anything, a desperate *absence* of point of view, a becoming-automaton that is *also* a suffering in which point of view is suspended, because to have a point of view implies an orientation, a reason, a motive or a *rationality*. In the two-movie reality, however, the real itself becomes irrational, without reason, if not without qualities, leading to a quiet or not-so-quiet desperation that begins to *want* the apocalypse, to want to *see* it—and to see it *screened*. In the age of ‘post-truth’, when the real becomes absolutely irrational, that is, a *very bad fiction*, then, as Stiegler has argued, we must transform the very notion of truth so that it can no longer be based on a relation to being, or even to becoming [*devenir*], but only to the future [*avenir*], which is to say, a new, rational (neganthropropic) macro-economy (Stiegler 2017a).

If the possibility of escaping the Anthropocene is ‘revolutionary’, what infinitely complicates the question is how to motivate a turn in a world *without culture and so without cosmos*, and how to foster this revolution before, during and after the catastrophe(s), and after the deluge (of data). If in the age of platforms this is still a question of images, it is not just a question of the geometry of spatial standpoints: somehow the image must occupy space and exist in time—it must, in its fictional multi-dimensionality, *move*, even if but a little. And if no apprehension of space occurs in any way other than as an apprehension of space *in time*, opening through the temporal dimension an ex-sight of the possibility of experiencing a surprise capable of causing every comprehension to tremble, then, again, this can only be a question of the image in time, the image that moves, that is, that changes, even if it does not change—a figure in the carpet amounting to a noetic autostereogram.

Only in this way can the question of Wittgenstein’s aspect-blindness be articulated with Szendy’s extra-terrestrial gaze, which is not the same as Kant’s, precisely because the question of points of view is no longer, for Szendy, either *universal* or *transcendental* or *theological*, and because it remains *within* the localized sur-reality of the neganthropic struggle of micro-cosmological and macrocosmological points of view operating not just from different *positions* but on different *scales* of a ‘very large out there’ with a technical history. Hence we argue that the question of a conversion to and

of an extra-terrestrial gaze, the question of a new revolutionary perspectivism becoming visible only at the limit, necessarily involves the question of the *a-transcendental*.

Bibliography

1. Bratton Benjamin (2014), "The Black Stack", *e-flux*, 53, [online] <http://www.e-flux.com/journal/53/59883/the-black-stack/> [accessed: 25.03.2019].
2. Derakhshan Hossein (2015), "The Web We Have to Save", *Matter*, [online] <https://medium.com/matter/the-web-we-have-to-save-2eb1fe15a426> [accessed: 25.03.2019].
3. Gray Jeffrey Alan (2004), *Consciousness: Creeping Up on the Hard Problem*, Oxford and New York: Oxford University Press.
4. Heidegger Martin (2010), *Being and Time*, trans. Joan Stambaugh, Albany: State University of New York Press.
5. Husserl Edmund (2011), "Foundational Investigations of the Phenomenological Origin of the Spatiality of Nature: The Originary Ark, the Earth, Does Not Move", trans. Fred Kersten, revised by Leonard Lawlor, [in:] Maurice Merleau-Ponty, *Husserl at the Limits of Phenomenology: Including Texts by Edmund Husserl*, eds Leonard Lawlor and Bettina Bergo, Chicago: Northwestern University Press.
6. Kant Immanuel (1979), *The Conflict of the Faculties*, trans. Mary J. Gregor, New York: Abaris.
7. Kant Immanuel (2006), *Anthropology from a Pragmatic Point of View*, trans. Robert B. Loudon, Cambridge: Cambridge University Press.
8. Kaplan Frédéric (2011), "Vers le capitalisme linguistique. Quand les mots valent de l'or", *Le Monde diplomatique*, [online] <http://www.monde-diplomatique.fr/2011/11/KAPLAN/46925> [accessed: 25.03.2019].
9. Kaplan Frédéric (2014), "Linguistic Capitalism and Algorithmic Mediation", *Representations*, 27, pp. 57–63.
10. Ross Daniel (2019), "Moving Images of the Anthropocene: Rethinking Cinema Beyond Anthropology", *Screening the Past*, 44 [forthcoming].
11. Rouvroy Antoinette, Berns Thomas (2013), "Gouvernementalité algorithmique et perspectives d'émancipation", *Réseaux*, 177, pp. 163–196.
12. Simondon Gilbert (1995), *L'Individu et sa genèse physico-biologique*, Grenoble: Jérôme Millon.
13. Sloterdijk Peter (2013), *In the World Interior of Capital*, trans. Wieland Hoban, Cambridge: Polity.
14. Stiegler Bernard (1996), "Être-là-bas: phénoménologie et orientation", *Alter*, 4, pp. 263–277.
15. Stiegler Bernard (2002), "The Discrete Image", [in:] Jacques Derrida and Bernard Stiegler, *Echographies of Television: Filmed Interviews*, trans. Jennifer Bajorek, Cambridge: Polity.
16. Stiegler Bernard (2009), *Acting Out*, trans. David Barison, Daniel Ross and Patrick Crogan, Stanford: Stanford University Press.

-
17. Stiegler Bernard (2016), *Automatic Society*, Volume 1: *The Future of Work*, trans. Daniel Ross, Cambridge: Polity.
 18. Stiegler Bernard (2017a), "Au delà de l'effroi", unpublished.
 19. Stiegler Bernard (2017b), "The New Conflict of the Faculties and Functions: Quasi-Causality and Serendipity in the Anthropocene", trans. Daniel Ross, *Qui Parle*, 26, pp. 79–99.
 20. Stiegler Bernard (2018), *The Neganthropocene*, trans. Daniel Ross, London: Open Humanities Press.
 21. Szendy Peter (2013), *Kant in the Land of Extraterrestrials: Cosmopolitical Philosophies*, trans. Will Bishop, New York: Fordham University Press.
 22. Vernant Jean-Pierre (2006), *Myth and Thought Among the Greeks*, trans. Janet Lloyd with Jeff Fort, New York: Zone Books.
 23. Wittgenstein Ludwig (1968), *Philosophical Investigations*, trans. G. E. M. Anscombe, Oxford: Basil Blackwell.

Debora Pazetto Ferreira*

Artificial Dreams: Contemporary Intersections Between Art and Technology

Abstract

This paper approaches the intersectional field between art and technology from a Flusserian perspective applied to an interesting example: images generated through the program Google Deep Dream. These digital images that look like surrealist paintings are made through a distortion in Google's artificial neural networks. I argue that these images problematize philosophical dualisms, like those between human intelligence and artificial intelligence, authorship and anonymity, individuality and collectivity, domination and deviation, art and technology.

Keywords

Art, Technology, Post-history, Artificial Intelligence, Authorship

And the results from manipulating this world, that surround us in the form of instruments, machines, gadgets, media, and institutions, are for us, for the same reason, a fantastic world of dream and nightmare

Vilém Flusser

To understand contemporary art's conditions of existence—that is, its various forms of production, circulation, exhibition, and reception—it is highly essential to frame in-depth research on the relationship between art and technology. This assumption is at the core of the present paper. It is decisive to understand in philosophical terms how technologies incorporate artistic

* Federal Center of Technological Education
Email: deborapazetto@gmail.com

elements and techniques. It is equally relevant to comprehend the artistic appropriation of varied technologies in order to promote a deviation of its designed, preceding functions. This is the case, for instance, for generative art, digital art, bio art, net art, and works of art that use robotics, medicine, augmented reality, virtual reality, immersion technologies and so on. That is, works of art that use cutting-edge technologies, nonetheless, deviate the original functional goal according to which those technologies should work. Thus, to investigate the transpositions of artistic experiences to virtual environments it's a critical necessity. This is so for both cases of transposition, that is, when the works are designed for cyberspace and when they are developed for museums and virtual galleries.¹ The fact that people nowadays have more access to works of art through images, videos, and texts on the internet than through traditional art institutions cannot be considered insignificant (Beiguelmann, Magalhães 2014)—at least not from a philosophical point of view. Moreover, even inside museums and galleries, the audience's interaction with the works has increasingly become inseparable from technological devices such as audio guides, cameras, and smartphones. Regarding circulation and exhibition, it is critical to lend an ear to the fact that the great artistic circuits have been increasingly ruled by the financial mindset of the transnational technological market.²

Thus, there are many possible ways of approaching the relationships between art and technology, and each one of them deserves a thorough study. This paper concentrates on one of them, which is what I call here as the intersectional field between art and technology, that is, a certain kind of phenomena, in which art and technology are so intertwined, that it is difficult to decide whether we are facing a work of art or some technological develop-

¹ Created just six years ago, Google Cultural Institute, for example, brings together collections from more than a thousand museums and art galleries all over the world. Through its Street View tool, it makes visible on the Internet great architectural works around the world.

² The art market does not escape the techniques and technologies of expansion and oligopolistic concentration of capital value. In partnership with banks, museums like Guggenheim and Louvre began to expand their names as brands, opening branches from Bilbao to Abu Dhabi. It is undeniable that the production, circulation, exhibition, and commercialization of art today are mostly capitalized by an international and superabundant scheme. This scheme exponentially increases the number of artists, museums, galleries, biennials, and exhibitions, as well as the prices of works of contemporary art, which increased 85% between 2002 and 2008 (Lipovetsky, Serroy 2015, 56–59). Thus, it is noticeable that this art market scenario erases the distinctions between art, marketing, financial investment, and business management.

ment. My working hypothesis is that these phenomena reveal the dissolution of the distinctive separation between the domains of art, science and technology. Thus, it is also part of my hypothesis that such distinctive separation no longer has the theoretical and practical weight that it had a few decades ago.

In a conference from 1982, the philosopher Vilém Flusser argued that, in Greek Antiquity, there was a prolific dialectic between *poiesis*, *episteme*, and *techné*. The referred dialectics had collapsed in Modernity, he stated, because the Greek concept of *techné* was split into two parts. One part was “objectified” in the service of science and accredited to be the only kind of rigorous knowledge (*episteme*). The other part was “subjectivized” as the construction of aesthetic forms without any epistemological value (*poiesis*.) “The so-called ‘modern art’ is, thus, obliterated from the flow of progress, and although idealistically glorified, it was effectively ejected from daily life and cloistered in a ghetto” (Flusser 1982). By ghetto, Flusser refers to museums, theaters and art galleries, since they are specialized and isolated spaces, towards which people must direct themselves in order to enjoy art. Therefore, *techné* was transformed, in the scientific context, into technology, and it was deprived of its aesthetic values, its ethical aspects, and thus, also of its political characteristics. On the other hand, *techné* was transformed, in the artistic context, into a set of works deprived of knowledge and disengaged from daily life.

Flusser saw as problematic this scission inside the Greek concept of *techné*. He argued that post-history makes possible the overcoming of this scission, given that technical images have the potential to work as a common denominator between scientific knowledge and aesthetics (Flusser 2011).³

³ Flusser develops these theses about the division between art and science in a period in which his philosophy focused in the development of advanced capitalisms and, more specifically, in the inexorable authority of technologies in this context, which he called post-history. Flusser always analyzes culture according to the predominant media in each period. Thus, he calls Prehistory the period that traditional images, such as painting, were the main form of mediation between humans and the world. Being two-dimensional, these images are a freezing of temporality and an abstraction of three-dimensional space. When writing was invented, it becomes the dominant media, and we enter into History. Writing is linear, one-dimensional. Therefore it has one more degree of abstraction compared to traditional images, which makes historical thinking linear and progressive. According to Flusser, in the twentieth century we entered a new period, the Post-history, in which the predominant media is no longer writing but technical-images. These images, like photography, video and digital images, owe their existence to technical apparatuses. Flusser defines them as third-degree

Well, the phenomena situated in the intersectional area between art and technology show how insufficient it is to ground theoretical analyses on such scission. Here, I intend to approach this topic using a particularly exciting example: images generated through the program Google Deep Dream.⁴ These technical-images that look like surrealist paintings are made through a distortion in the use of Google's artificial neural network mechanism of image recognition, in a way that they hold both artistic and scientific characteristics.

Artificial neural networks (in its most recent development: Deep Learning) are a system of hardware and software inspired by the human brain's neural network. They are not an algorithm. They are, rather, a framework with which different types of machine learning algorithms can work together and learn, by considering training datasets, how to process complex information and perform tasks without being programmed with task-specific rules.⁵ Currently, Google's artificial neural networks for image recognition are trained to recognize something by being fed with millions of images of the same thing, kept in a gigantic database. For instance, in order to teach the artificial neural network how to recognize a fork, it is necessary to feed the neural network's database with millions of images of a fork. In this way, it is expected that the neural network would make a sort of eidetic reduction. In other words, it would extract the characteristics and elements that are common (and recognizable) in all of these millions of images of forks—like having a stem and three or four curved prongs—and ignore incidental features—like, say, the way it is positioned or any element in the background. If this process succeeds, then, the artificial neural network will be capable of recognizing an image of a fork (Mordvintsev *et al.* 2015). Thus, at hand, what we have here is a mechanism that determines the content of an image by way of an analysis of its shapes and colors: a process that goes from its form to its concept.

abstractions: being made of dots (pixels, bites, *quanta*,) they are a zero-dimensional media abstracted from one-dimensional writing (scientific theories used to create the technical apparatuses), but they can recreate digitally all the lost dimensions (Flusser 2010, 2011).

⁴ For some examples of images generated by the Google Deep Dream program, see: https://photos.google.com/share/AF1QipPX0SCl7OzWilt9LnuQliattX4OUCj_8EP65_cTVnBmS1jnYgsGQAieQUc1VQWdgQ?key=aVBxWjhwSzg2RjJWLWRuVFBBZEN1d205bUdEMnhB.

⁵ A more specialized description of artificial neural networks can be found in Ger-ven, Bothe (2017).

Images known as Google Deep Dream were created as a way of testing if artificial neural networks were correctly capturing the “essence” of a given thing. It is possible to insert an image full of random noise and adjust the neural network to detect a specific concept that is absent in the same image. So, for instance, if the neural network were adjusted to recognize “fork,” it would make attempts to visualize the concept of “fork” and, thus, generate an image of a fork. It is also possible to insert one specific image and deepen the process of random identification in a layer of neurons, until it can produce contents that were not present in the initial image (Mordvintsev *et al.* 2015). It is important to note that the neural network focuses on general features in lower layers of neurons, and on details in higher layers of neurons. This process resembles the imaginative act of seeing images in clouds. In the same way that our brain tends to visually project images that one thinks one has recognized in the clouds, the neural network literally creates an unexpected myriad of figures inside the original images. Such phenomena had generated an aesthetic that became known as Inceptionism.

Facing these images, people tend to raise a common question: are these images apt to be considered works of art? In general, when the artistic character of Google Deep Dream images is denied, the rejection is massively based on the idea of authorship. Popular concepts of art, as well as most occidental philosophical concepts, remain intrinsically tied to the concept of “artist.” The common idea of art generally depends on the identity of a creative artist, that is, of an individual capable of intentionally expressing their feelings and thoughts through the material and techniques of the work of art. However, it is well known that authorship started to be relevant during Renaissance and it was theoretically consolidated only in the 18th century, with the concept of the creative genius and, later, with the theory of Expressive Art (Shiner 2003). Nevertheless, authorship continues to be a central concept for art, even in contemporaneous philosophical definitions.⁶

In contrast, Flusser criticized the emphasis on the artist as a myth, a romantic divination that steals the show from what is important when the subject at hand is art: the introduction of new information into the world and its collective appropriation in various forms. Flusser’s notion of art—

⁶ For example, in Amie Thomasson’s ontology of art, all works of art are considered dependent on the mental states of a particular author (Thomasson, 2004); Morris Weitz, while rejecting a definition of art, recognizes that we typically describe works of art as things made by humans with ingenuity and imagination (Weitz 1956); Arthur Danto’s definition of art depends on the concept of authorship insofar as the interpretation of works refers to the intentions of the artist (Danto 2010), and so on.

which is not intended to be a definition of art—is extremely political. For political, he understood a sphere of coexistence, of collective knowledge, of co-valorization, ultimately, of intersubjective experiences that give meaning(s) to life (Flusser 1982). In other words, he focused on the social amplitude of art, not on the institutional, academic and commercial aspects of art. On the contrary, for him, spaces such as museums, galleries, universities and the art market, named by him as ghetto, depoliticize art and make it elitist. In sum, the creative act is what matters for Flusser, “the artistic gesture that does not limit itself to the labeled domain of art. On the contrary, such a magic gesture also happens in other spheres: in science, techniques, economy, and philosophy. In every one of these domains, there are those intoxicated by art, that is, those who generate new information” (Flusser 2011, 160). Therefore, for him, art could only be thought as a public sphere, since he saw it as a potency to amplify reality and create new alternatives for culture (new information), as something that emerges from the collective process of appropriation, fruition, and comprehension of artists proposals.⁷

The perspective in which “the artist does not watch over or manage the growth [of the work], they simply makes a beginning possible, and according to Flusser, they should thereafter fade into the background” (Finger 2012, 2) seems to be more appropriate for a philosophical thinking of art in today’s world. In the first place, because the art market has completely captured the romantic idea of the creative genius—the artist’s name plays the same role that a brand or a designer label plays in the fashion industry. Thus, authorship became, for the most part, a mechanism in the service of art commodification. Second, because recently many interesting works are being created through collaborative exercises of art collectives, which, in many ways, use anonymity as a poetic choice. Especially in alternative circuits of art, the identification of an individual or a defined authorship is no longer seen as essential—as ontological characteristic of art—together with its satellites concepts, such as genius, expression, intention, style. Like these collective or anonymous forms of art production, the images created through Google Deep Dream exceed an artist’s signature. These images have collective authorship, which includes artists, technicians, programmers, engineers and users that collaborate with the building of Internet images database and, yet,

⁷ Flusser’s philosophy of art and creativity is extensive and controversial, a fertile ground for raising problems and for discussions with the history of aesthetics. Since this is not the purpose of this paper, I count on the vast material already published for further development on these topics (for example: Finger 2010; Pazetto 2014).

the Artificial Intelligence itself. If these “artificial dreams” become accepted as art by our culture, then, it must be acknowledged that they problematize the concept of the artist as a creative genius.

Even if Flusser has not written about art made by Artificial Intelligence, it is possible to use his reflections on art and aesthetics to highlight some artistic aspects of Google Deep Dream images. Flusser understood the contemporary times as a period in which apparatuses (machines, devices, technical-images) dominate the manipulation, storage, and transmission of information. In other words, what he called as post-history is a period in which apparatuses program human capacity to learn, experiment, elaborate and communicate the world (Flusser 2011). Flusser’s argument is based on the thesis that machines, devices, technical-images—which range from the microchip to the macro administrative, governmental, financial and economic apparatuses—condition human beings to follow their programming, given that the type of information they produce is previously inscribed in their program. This statement may have seemed excessive at that time, before the age of social media and smartphones. However, nowadays, it shows itself in a transparent way: our work, our sociability, our eating, our friendship, sexuality, self-image, recreation, our spatial-temporal localization, and even our ways of doing politics (or not doing it) are programmed by gadgets, devices, mobile apps, websites, and social media. In this post-historical context, Flusser understood art as a creative potency. He saw it as a force of resistance against the overwhelming technical programming of humanity.

He thought that human beings are in an intersection in the post-history. On one side, human beings can become operators: the kind of people that function in accordance with the technological apparatus, obeying its programmed rules. On the other side, they can become artists: people capable of understanding and using technologies in order to create new forms of perception, new forms of society, experience, affection, techniques, thoughts, political organization and so on. As a collective creative potency, the artistic gesture can assimilate the most advanced techniques and technologies without subordinating to the dominating function that the latter plays economically, socially and politically. Thus, art is a cleft through which humankind could escape its own overwhelming programming and functionalization. Like hackers, artists can deeply comprehend current devices and techniques in order to subvert its original functions. Similar to Flusser’s contrast between artists and operators, there is a contrast between hackers and engineers that appears in the text *Fuck Off Google*. While engineers are sad and servile figures, that “would capture everything that functions, in such a way

that everything functions better in service to the system, the hacker asks himself ‘How does that work?’ in order to find its flaws, but also to invent other uses, to experiment” (Invisible Committee 2014). In this sense, operators are slaves of technology as they regard apparatuses simply as black boxes, which they operate as innocent users. The same applies to engineers. Although they can understand and manipulate certain apparatuses, the capitalist system of technological production is for them a black box, which they work with as innocent operators (Invisible Committee 2014). In an opposite relation, artists or hackers understand how the devices work so that the technology “no longer appears as an environment, but as a world arranged in a certain way and one that we can shape” (Invisible Committee 2014).

Flusser believes that post-historical artists are like hackers that can appropriate techniques and technologies without being captured by its tendency to programming. “Art appeals to technology in accordance to its own finality, which is essentially anti-technological. [...] It creates machines that produce nothing and devices that do not work” (Flusser 1971). This way, power, methods, programs, and scientific and technological devices are reduced to an absurd—they become a play. Here one could remember artists like Eduardo Kac, Orlan, and Stelarc, who played with genetic engineering, medicine, and robotics to subvert its original functions. Flusser began to shape his concepts of “play” and “player” in *Phenomenology of the Brazilian*, in which he characterized play as a system composed of connected elements according to certain rules (Flusser 1998). He outlined three kinds of playing strategies: 1) we can play with the goal of winning, but constantly running the risk of being defeated; 2) we can play more prudently, minimizing both the risks of defeat and victory; and 3) we can play for subverting the rules of the play. In the latter case, the player can be considered an artist, or a hacker; someone who acquires critical distance from the play itself and perceives it as something that can be reinvented (Flusser 1998). The ability to play is crucial in post-history. When there comes a time when human life follows rules programmed by the apparatus, acts of invention are acts of resistance; a kind of subversive political-artistic engagement: “Human commitment is therefore no longer dedicated to the elaboration of programs but to the *deviation* from programs” (Flusser 1986, 330, emphasis added).

Thus, Google Deep Dream images could be understood as artistic not only because they are aesthetically appealing, but, mostly, because they emerge from the Artificial Intelligence creative/imaginative process in collaboration with human intelligence. In this sense, the alliance between these intelli-

gences—human and artificial—behaves like a player who can reinvent the play and modify its rules. The images are called “deep dreams” because—since they are not a result of direct programming, but of Deep Learning—they revealed entirely unexpected and previously inaccessible forms that amazed even the engineers and programmers of neural networks (Mordvinsev *et al.* 2015). Like works of art made by humans, these images are generated by the neural network through already assimilated content, although these contents are articulated in a new way, in a unique and recognizable style. Above all, these impressive and surreal images can be considered artistic because they work as a *deviation* from the Internet’s most current programming trend: mass surveillance directed to hyper-consumerism and political control.

It is important to consider that a significant part of Internet technological progress—such as neural networks, Big Data, and Artificial Intelligence—are in the service of what Flusser called, in the 1970s, as “gigantic deadly apparatus” or “military, multi-millionaire organizations” (1971). Currently, this means that these technologies are driven by billionaire investments in mass surveillance. It is not a secret that all the information, images, and user interactions are collected, monitored, stored and categorized in profiles by companies like Google, Facebook, Apple, Amazon, and YouTube, which sell all these pieces of information to other companies for targeted advertising. It is already common sense to acknowledge that Internet filter bubbles are shaping how its users understand the world and are largely responsible for their intellectual isolation. In addition, of course, Intelligence agencies also monitor these data as a strategy of social control and geopolitical power: “Now it is being done by everyone, and by nearly every state, because of the commercialization of mass surveillance” (Assange *et al.* 2012). The emotional and ideological characteristics that individuals reveal in networks, organized in a multitude of profiles by mechanisms of automatic data processing, can be used to influence the result of government elections, as it happened in the 2018 Brazilian presidential elections (the far-right president-elect is being investigated for abuse of economic power and misuse of digital communication.) Well, research on neural networks of image recognition is financed by “military, multi-millionaire organizations” (a market estimated to grow from USD 15.55 Billion in 2016 to USD 38.92 Billion by 2021), with major applications in face recognition, security, surveillance, visual geolocation, gesture recognition, and code recognition. At this point, we should learn from the hackers: “Where control and transparency reign, where the subjects’ behavior is anticipated in real time through the algorithmic processing of a mass of

available data about them, there's no more need to trust them or for them to trust. It's sufficient that they be sufficiently monitored" (Invisible Committee 2014).

My point is that when the neural networks' image recognition functions are used not to track user's information but to play with confused and hallucinogenic images, then what we have is a deviation from the standard programming that gears the Internet. By way of anomalous agglomeration of image data, this kind of subversion of profiling strategies, even though small, signalizes what Flusser defended as a political-artistic engagement: a deviation from programs or at least a deviation from the program's intended use.⁸ Google Deep Dream images proliferate a shuffle of categories in the networks—which is supplied by images of an eyed pizza, or a Donald Trump looking like a dog, or a pig-snail, or a woman with bird's head, or tower-soldiers and so on. This muddle goes in the opposite direction from mass surveillance strategies of identifying, categorizing and profiling as its ways of realizing social control, aggressive marketing, and media manipulation with political purposes. In this sense, Google Deep Dream images remind us of Donna Haraway's description of a cyborg: a hybrid being that messes around with traditional categories, such as organism and machine, fiction and reality, nature and culture, material and non-material. "The stakes in the border war have been the territories of production, reproduction, and imagination. This chapter is an argument for pleasure in the confusion of boundaries and for responsibility in their construction" (Haraway 1991, 150). Haraway sees the cyborg as a mythological figure capable of opening gaps in predominant ways of thinking, feeling and acting according to the oppressive categories and boundaries of technological society. For that reason, like Flusser, Haraway believed that the artistic gesture of creating new images and narratives could fight through language and for language against the totalitarian programs and apparatus of technological culture.

⁸ It is important to notice that I am not claiming that there is an intentional subversive engagement by programmers and much less by neural networks. However, according to Flusser's understanding of art and authorship, the authors' intention matters far less than the social appropriation of the work of art. The point is that the collaboration of human and artificial intelligences—this collective being the locus of the creative gesture that generates Google Deep Dream images—perform a deviation from a program: mass surveillance and their profiling strategies. This kind of deviation, of course, may well be intentionally appropriated by other layers of society in a very subversive manner.

One form of assuming responsibility for the construction of boundaries is to analyze phenomena such as Google Deep Dream images in ways that are not technophobic nor technophilic, as Flusser did. From his account on the post-historical association between scientific knowledge and aesthetics, it is possible to affirm that in Google Deep Dream images “science and technology can become a play, that is, art” (Flusser 1971). In this play, image categories are mixed up, and philosophical boundaries are called to be reinvented, like those between human intelligence and artificial intelligence, between authorship and anonymity, between individuality and collectivity, between domination and deviation, between art and technology.

This is enough to address my working hypothesis: that the images in question are artistic according to Flusser’s notion of art as a deviation from programs, and that they belong to an intersectional domain between artistic and techno-scientific knowledge that reveals an increasing indistinction between these areas. Maybe this is not enough to prove that all Google Deep Dream images are works of art, what, of course, would depend on a definition of art (which Flusser, among other philosophers, such as Adorno or Weitz, considers an impossible task.) What we can prove is that some of these images have already entered the “art world” (which, according to other philosophers, such as Danto or Dickie, is enough to define them as works of art.)⁹ A few Google Deep Dream images were sold for thousands of dollars in an art exhibition named “Deep Dream—the neural network art,” held in a San Francisco’s gallery.¹⁰ In the exhibition, all images were made using artificial neural networks. Nonetheless, they were signed by the authors that managed the processes of selecting the input images, manipulating the neurons layers, picking up the training base for the neural network and some other adjustments. These authors name themselves as art-engineers, programmers, designers, hackers, “code artists,” researchers, scientists and so on. In this case, specifying an assured authorship—different from many anonymous similar images that are abundant on the Internet—seems to be a marketing strategy of art galleries, based on the relevance of the artist name in the current art world, besides associating these images with sophis-

⁹ Although Danto states that his theory does not conform to Dickie’s Institutional Theory of Art, the insertion of works into the art world remains a necessary condition in his definition of art, even in his later books. For further discussion on this topic: Pazetto 2018, 93–108.

¹⁰ Information on this exhibition is available on the event’s official website: <https://grayarea.org/event/deepdream-the-art-of-neural-networks/>

ticated frames and “limited edition” propaganda. Nevertheless, as I have stated previously, the notion of authorship in these Google Deep Dream images is very diffused.

Even though all images in the exhibition were somehow interesting, I conclude this paper highlighting the arguments presented above by analyzing the work “All watched over by machines of loving grace,” signed by the Turkish artist Memo Akten, and sold by eight thousand dollars.¹¹ The neural network was given an input image, a photo that shows the Government Communication Headquarters—GCHQ, a national security military force and intelligence agency, responsible for providing information to the government (apropos, one of the agencies denounced by Edward Snowden.) The photograph was taken by a Google Maps satellite, another technology of surveillance.¹² There is a prominent religious reference in the work’s title: the idea that an omnipresent, omnipotent and omniscient God that watches over us. The omnipresent, omnipotent watcher is, however, a control technology made by humankind, which contemporary version can be recognized in mass surveillance technologies. Indeed, it is the artist’s merit to choose as a theme the ironic specularity of these three technologies of surveillance—GCHQ, Google Maps satellites, and Google neural networks. This kind of choice surely justifies Akten’s participation in the work’s authorship. However, from an aesthetic point of view, the work is fascinating because it looks like a huge eye amid an organic-mechanic labyrinth of eyes. This peculiar transformation of the input image was not something generated by Akten. Thereby, this work of art is constituted by an automatic satellite image, by the neural network stylized image distortion, by Memo Akten choices and ideas, by collective Internet database of images, by the work of engineers that made the neural networks and so on. In other words, the authorship, in this case, goes through all these creative chains of actors, programs and devices.

Google Deep Dream images are one of many examples that reveal the blurred, dissolving distinction between the domains of art, science and technology, which today doesn’t have the theoretical and practical weight it had

¹¹ Images of the work, as well as a description offered by the author, can be accessed on his homepage: <http://www.memo.tv/all-watched-over-by-machines-of-loving-grace-deepdream-edition/>

¹² At this point, again, we should learn from the hackers: “An enterprise that maps the planet Earth, sending its teams into every street of every one of its towns, cannot have purely commercial aims. One never maps a territory that one doesn’t contemplate appropriating” (Invisible Committee 2014).

for decades. For many techno-scientist-artists, this distinction is merely institutional and currently obsolete. However, regarding Flusser's theory, there is still a distinction worth noting, namely, between programming and deviation from programs—a distinction that could also be referred to by other terms such as repetition and creativity, cultural industry and art, engineer and hacker, operator and artist.

Why are images sold in the art exhibition “Deep Dream—the art of neural network” more easily accepted as art than those images ordinarily made by Internet users, applying the same procedure? I believe this acceptance is based on the legitimizing character of the institutional space—that is also a theoretical, social and marketing space—called by some philosophers as “art world.” However, in Flusser's perspective, belonging to the art world does not guarantee most relevant artistic features, like intersubjective comprehension of the work, amplification of reality, subversion of dehumanizing apparatus, deviation from dominant programs. For this reason, I argued that Google Deep Dream images are artistic not only because they are entering into the art world, but, mainly, because they are a deviation from the Internet's most current programming trends (mass surveillance strategies of identifying, categorizing and profiling). In other words, because they are a creative and collective play that mix up stiff categories, both in networks and in philosophy.

Nevertheless, it is essential to acknowledge that, to deviate from the market and economic programming, is becoming increasingly difficult. One reason is that the market assimilates all forms of deviation, resistance or invention. For instance, the art exhibition mentioned above was sponsored by Research at Google. The same exhibition reveals the well-known capitalist method of absorbing art's subversive potency and putting it at the service of large corporations. The same kind of corporations, like Google, that are hugely criticized by the very work it sponsors, like the case with Memo Akten's work. Therefore, I finish this paper citing an anonymous hacker, who criticizes the capitalist incorporation of the hacker movement: “Managers are urged to facilitate free initiative, to encourage innovative projects, *creativity*, genius, even *deviance*—‘the company of the future must protect the *deviant*, for it's the deviant who will innovate and who is capable of creating rationality in the unknown’, they say” (Invisible Committee 2014. Emphasis added). The all-embracing capitalist apparatus finds ways of reprogramming in its favor even the most creative and subversive gestures. It allows us to make works of art and innovations, only if it is at the market's service. It allows us to play with technologies, provided we do not put at risk the main

capitalist programs, that is, mass surveillance, consumerism, cultural industry, financial system, and all forms of colonization. This is a political and theoretical problem, and it does not have an easy solution. However, it gives us a clue as to which programs we should dedicate our capacity of artistic, scientific, technological and political deviation.

Translation by Mariana Lage

Bibliography

1. Akten Memo (2015), "All watched over by machines of loving grace: Deepdream edition", [online] <http://www.memo.tv/all-watched-over-by-machines-of-loving-grace-deepdream-edition/> [accessed: 20.01.2018].
2. Assange Julian *et al.* (2012). *Cyberpunks: Freedom and the Future of the Internet*, New York and London: OR Books.
3. Beiguelman Giselle, Magalhães Ana Gonçalves (2014), *Futuros possíveis: arte, museus e arquivos digitais*, São Paulo: Edusp.
4. Danto Arthur (2010), *A Transfiguração do lugar comum*, tradução de Vera Pereira, São Paulo: Cosac Naify.
5. Finger Anke (2010), "On Creativity: Blue Dogs With Red Spots", *Flusserstudies*, 10, pp. 1–6.
6. Flusser Vilém (1982), "Criação científica e artística", Conference in Maison de la Culture, Chalon s/ Saone. Manuscript available in Flusser Archiv, Berlin.
7. Flusser Vilém (1986), "The Photograph as Post-Industrial Object", *Leonardo*, 19, pp. 329–332.
8. Flusser Vilém (1971), "O Espírito do Tempo nas Artes Plásticas", *O Estado de São Paulo*, SL.
9. Flusser Vilém (2010), *Filosofia da caixa preta: ensaios para uma futura filosofia da fotografia*, São Paulo: Annablume.
10. Flusser Vilém (1998), *Fenomenologia do Brasileiro*, Rio de Janeiro: Eduerj.
11. Flusser Vilém (2011), *Pós-História: vinte instantâneos e um modo de usar*, São Paulo: Annablume.
12. van Gerven Marcel, Bohte Sander (2017) "Editorial: Artificial Neural Networks as Models of Neural Information Processing", *Front. Comput. Neurosci.*, [online]. <https://www.frontiersin.org/articles/10.3389/fncom.2017.00114/full> [accessed: 1.12.2018].
13. Haraway Donna (1991), *Simians, Cyborgs and Women: The Reinvention of Nature*, New York: Routledge.
14. Invisible Committee (2014), "To Our Friends", [online] <https://theanarchistlibrary.org/library/the-invisible-committee-to-our-friends#toc1> [accessed: 12.12.2018].
15. Lipovetsky Gilles, Serroy Jean (2015), *A estetização do mundo: viver na era do capitalismo artista*, trans. E. Brandão, São Paulo: Companhia das Letras.

-
17. Mordvintsev Alexandre *et al.* (2015), "Inceptionism: Going Deeper into Neural Networks", [online] <https://research.googleblog.com/2015/06/inceptionism-going-deeper-into-neural.html> [accessed: 15.01.2018].
 18. Pazetto Debora (2014), "O papel da arte na filosofia de Vilém Flusser", [in:] *Imagem, imaginação, fantasia: 20 anos sem Vilém Flusser*, Belo Horizonte: Relicário Edições.
 19. Pazetto Debora (2018), "The Problem of Interpretation of Artworks in Arthur Danto", *Kriterion*, Vol. 59, No. 139, pp. 93–108.
 20. Thomasson Amie L. (2004), "The ontology of Art", *The Blackwell Guide to Aesthetics*, ed. Peter Kivy, Oxford: Blackwell.
 21. Shiner Larry (2003), *The invention of art: a cultural history*, Chicago: University of Chicago Press.
 22. Weitz Morris (1956), "The role of theory in aesthetics", *The Journal of Aesthetics and Art Criticism*, XV, pp. 27–35.

David Charles Wright-Carr*

Embodied Cognitive Science, Aesthetics, and the Study of Visual Language¹

Abstract

The paradigm of embodied cognition provides a perspective for rethinking the nature of experience, intersubjectivity, and the interaction of the human animal with its physical and sociocultural environments. Embodied cognitive science can be a productive framework for the study of aesthetic experience and visual communication, enabling us to transcend the cognitivist paradigm of the twentieth century, understood here as the view that cognition is the rule-based manipulation of symbolic representations in a disembodied and decontextualized mind. Summaries of key concepts of embodied cognition are provided, with suggestions for their use in the exploration of aesthetics and visual language.

Keywords

Cognition, Embodiment, Aesthetic Experience, Visual Language

The embodied perspective

Embodied cognition arises from the interaction of a living being with its environment. This view provides a fresh perspective for the study of the experiences of human and nonhuman agents. The defining work is a book, *The Embodied Mind*, by biologist Francisco Varela, philosopher Evan Thomp-

* University of Guanajuato, Mexico
Email: dcwright@ugto.mx

¹ This text is a revised version of the paper “Embodied cognitive science as a perspective for the study of non-Western visual communication,” presented in the conference *Sign and Symbol in Comparative Perspective*, Warsaw, 19–21 June 2017. An expanded version was published in Castilian (Wright-Carr 2018). I thank the reviewers for the *Polish Journal of Aesthetics* for their thoughtful suggestions, which served to clarify and refine the ideas presented here.

son, and psychologist Eleanor Rosch, first published in 1991 (Varela *et al.* 1993). Another influential text is *Philosophy in the Flesh*, by linguist George Lakoff and philosopher Mark Johnson (1999). A large body of literature has been produced that discusses, refines, and at times confuses the field of embodied cognitive science. As in any emerging paradigm, there are internal contradictions that have yet to be worked out.² Today there is a loose consensus regarding core concepts.

Antecedents may be found in the work of psychologist William James (1910); in the writings of phenomenologists Edmund Husserl (2001) and Maurice Merleau-Ponty (1962), from the first half of the 20th century; in the publications of biologists Jakob von Uexküll (1957, 1982), from the same period, and Humberto Maturana (1980), a generation later. Varela, mentioned above, was a student of Maturana and co-authored publications with him (Maturana, Varela 1980, 1998). James Gibson's ecological psychology (1986), developed during the second half of the 20th century, may be seen as a precursor to the embodied perspective.³ In the field of aesthetic theory and visual communication, John Dewey (2005) and Rudolf Arnheim (1969) emphasized the importance of sensory experience and visual thinking in cognition; both concepts anticipate the embodied perspective (Johnson 2007, 228). A common thread in this body of work is a rejection of the cognitivist-computationalist paradigm, dominant in the second half of the twentieth century, with its model of the disembodied, rule-based manipulation of internal representations of an external world. Embodied cognitive science constitutes a paradigm shift, challenging established theories in a range of disciplines (Chemero 2011, 47–66; Johnson 2007, 112–118).

In the remainder of this section, key concepts of the embodied perspective are introduced, with suggestions as to how they may advance our understanding of aesthetics and visual language.

Cognition refers here to a bodily agent generating meaning through its interaction with the environment. Making sense of the environment through bodily experience is something living organisms do. It is our evolutionary heritage. Cognition, operating on conscious and nonconscious levels,

² See: Chemero 2011; Colombetti 2017; Di Paolo 2009; Gallagher 2015; Shapiro 2011; Sheets-Johnstone 2015.

³ Varela, Thompson, and Rosch (1993, 202–205) point out the differences between their view of embodied cognition and Gibson's ecological approach. Chemero (2011) reconciles Gibsonian ecological psychology with the concept of enactivism developed by Varela *et al.*

emerges from networks that evolved for perceptually-oriented action and action-oriented perception, providing solutions to challenges presented by the environment. Cognitive sense-making is embodied and embedded in the world. This view of mind provides a biological structure for understanding human experience, including the use of imaginative processes, in which meaning is linked to sensorimotor experience, as well as the conceptual tools we use in visual, verbal, musical, and mathematical perception, action, and thought.⁴

Perception is often thought of as the reception of stimuli by way of sight, hearing, touch, smell, and taste. There is more. A significant aspect of our experience is interoception, the nonconscious and conscious experience of the interior of the body, fundamental for the maintenance of homeostasis, a state of equilibrium with the environment (Craig 2003). Another aspect of our sense of being in the world is proprioception, the awareness of bodily position and movement through tactile sensation, the feel of gravity, and kinaesthesia, the sense of movement.⁵

For Lakoff and Johnson, mental images and tropes like metaphor and metonymy are central to the emergence of conceptual categories. These processes are grounded in the bodily experience of the world.⁶ While much of the published work in conceptual metaphor theory focuses on language, the conceptual structure they provide may be put to use in the study of visual language, ranging from the iconic expression of thought, through idea-based semasiography, to glottography linked to verbal language (Sampson 2015). Since these classes of visual communication may express thought in different ways, and most systems combine elements from two or three classes, a unified approach can avoid the fragmentation of a visual 'text' into 'iconography' and 'writing', providing solutions to current discussions among experts in ancient systems of visual language (Wright-Carr 2017).

The concept of *embodiment* rejects mind-body dualism, heir to ancient and medieval notions of 'soul' and 'body.'⁷ Living organisms, from cells to hu-

⁴ See: Johnson 2007, 113; Lakoff, Johnson 1999, 77–78; O'Regan 2011, 127–136; Varela *et al.* 1993, 99–100.

⁵ See: Damasio 2000, 52–53; Sheets-Johnstone 2004; M. Sheets-Johnstone 2011.

⁶ See: Johnson 1990; Lakoff 1990; Lakoff, Johnson 1981, 1999. In Johnson's later work (2007, 23–38), he focuses more on visual expressions of thought.

⁷ Ryle (1951, 23, 26–27, 62, 65, 159, 282, 287) relates the concept of 'soul' to that of 'mind', referring to the Cartesian separation of mind and body as "the dogma of the Ghost in the Machine" (Ryle 1951, 22, *passim*). For a critique of mind-body dualism and the separation of rationality from emotion, see: Damasio 2005. Lakoff and John-

mans, are seen as autopoietic systems, capable of sustaining and reproducing themselves, interacting with a larger and more complex environment (Maturana, Varela 1980). The nature of an organism's cognition is enabled and constrained by its bodily constitution, the result of its evolutionary heritage.⁸ In the case of humans, the environment includes a complex sociocultural dimension, the patterns of symbolic meaning that we collectively weave (Johnson 2007, 135–154; Varela *et al.* 1993, 178–179). Lakoff and Johnson (1999, 17) explain:

The evidence from cognitive science shows that classical faculty psychology is wrong. There is no fully autonomous faculty of reason separate from and independent of bodily capacities such as perception and movement. The evidence supports, instead, an evolutionary view, in which reason uses and grows out of such bodily capacities. The result is a radically different view of what reason is and therefore of what a human being is.

This way of thinking about the emergence of meaning differs from traditional semiotics, particularly the influential ideas of Charles Sanders Pierce which, as Maxine Sheets-Johnstone (2004, 106) has pointed out, emphasize categories of reference or representation “according to law-like, ordered semiotic relationships” in a system that “in large measure passes over an experiencing subject.” An embodied approach to visual communication in human and nonhuman animals offers a fresh perspective for comprehending the making of meaning.

To understand visual signs we must understand vision, not only the signs. Visual perception is an illusion (Noë 2002). Like other aspects of experience, it is determined and constrained by our biology. The visual system works together with the motor system. Like cognition, vision is embodied (O'Regan, Noë 2001). Enactivism postulates the unity of action and perception (Noë 2006). A deeper understanding of the implications of vision science for the study of aesthetics and visual language should be actively pursued.⁹

son (1999, 423, 563, 564) explain that “Christianity's split of the self into soul and body is carried directly over into the Kantian picture as a split between our rational and bodily natures,” stating that “Whether you call it mind or Soul, anything that both thinks and is free-floating is a myth. It cannot exist.”

⁸ See: Johnson 2007, 113–134; Maturana, Varela 1998, 75–80; Varela *et al.* 1993, 151–152.

⁹ See: Gallese 2005, 2015, 2016; Hodgson 2000, 2006.

Enaction is a key concept in embodiment theory. Varela, Thompson, and Rosch originally used this term to refer to “the capacity of a complex system to enact a world” though the interaction, or “structural coupling,” of an agent with its environment. Enactive cognition is an emergent phenomenon, a bringing forth of meaning through the combined experience of action and perception (Varela *et al.* 1993, 151; Noë 2006).

A biological view of cognition, perception, and action opens new horizons for the study of culture, including shared systems of signs. Tim Ingold (2011a; 2011b) explores the possibilities of a biology-based anthropology, reconciling the ecological and sociocultural contexts of human agents as living organisms and as members of society. He criticizes the dichotomy of drawing and writing, and the way in which the former is undervalued and the latter is overvalued. He disagrees with the view of drawing and writing as the projection of ideas onto a surface, seeing these actions as processes of making:

[...] in practice, making is less a matter of projection than one of gathering, more analogous, perhaps, to sewing or weaving than to shooting arrows at a target. As they make things, practitioners bind their own pathways or lines of becoming into the texture of the world. It is a question not of imposing form on matter [...], but of intervening in the fields of force and flows of material wherein the forms of things arise and are sustained. Thus the creativity of making lies in the practice itself, in an improvisatory movement that works things out as it goes along. Against the background of this latter view of making, the practices of drawing and writing take on a quite different significance (Ingold 2011a, 178).

The division of visual communication into categories, such as ‘art’ and ‘writing,’ reflects the dominance of the written text in the Modern era. The study of visual language in non-Western cultures often suffers from the conceptual limitations of this dichotomy. Visual signs that resemble our alphabetic script are classified as ‘writing,’ while signs that don’t fit easily into this culturally-defined category are labelled ‘art,’ ‘iconography,’ or ‘semasiography.’ These categories limit our comprehension of visual language by separating into distinct classes what was originally seen as—and continues to function as—a unified system of communication (Wright 2017).

Embedded cognition means that an agent’s mind is situated in its environment. Cognition depends on the environment and on the cognizing agent’s relationship to it, including perceived values or threats. An organism is at-

tuned to its world in terms of the practical affordances offered by the environment. The agent's activity determines the boundaries of its environment and its attentionally selected contents (Ward, Stapleton 2012).

The concept of affordances was developed by Gibson. These are opportunities that have the potential to aid an agent in the realization of its goals. Affordances are determined by the bodily constitution and the present state of an organism. Animals make sense of their environment in terms of the potential it offers for meaningful interaction, including feeding, finding refuge or comfort, and mating (Gibson 1986).

Neuroscientific research in monkeys and humans shows how visual perception is cognitively bound to motor simulation: objects that afford being grasped are mapped onto the corresponding region of the cortical motor system. Gallese (2015, 130) explains: "The functionality of the motor system literally carves out a pragmatic *Umwelt*, dynamically surrounding our body. The profile of peripersonal space is not arbitrary: it maps and delimits a perceptual space expressing—and being constituted by—the motor potentialities of the body parts it surrounds."¹⁰

The embedded nature of our cognitive processes, and the ways in which objects are experienced in relation to our bodies, highlights the expressive potential of format and scale in visual language. The representation of a deity can be sculpted from a large block of stone and placed in a monumental context, or it can be presented at an intimate scale, carved into a bit of stone that fits in one hand, or painted on the surface of a portable manuscript. An orthodox semiotic or iconographic interpretation of each of these objects would yield identical results, if their relation to the body is not considered. The creators of these objects had at least an intuitive sense of the significance of the potential interplay between their creations and the observers' bodies.

The notion of *Extended cognition* invites us to reconsider the boundaries between mind, brain, body, and environment. What is the locus of the mind? The brain? The brain plus the rest of the body? The brain, the rest of the body, and artificial extensions of the body? The brain, the rest of the body, its extensions, and the environmental context? Merleau-Ponty (1962, 143) offers an example of cognitive extension:

¹⁰ On the concept of *umwelt*, the bodily-constrained worldview of an organism, see: von Uexküll 1957.

The blind man's stick has ceased to be an object for him, and is no longer perceived for itself; its point has become an area of sensitivity, extending the scope and active radius of touch, and providing a parallel to sight. In the exploration of things, the length of the stick does not enter expressly as a middle term: the blind man is rather aware of it through the position of objects than of the position of objects through it. The position of things is immediately given through the extent of the reach which carries him to it, which comprises besides the arm's own reach the stick's range of action. If I want to get used to a stick, I try it by touching a few things with it, and eventually I have it 'well in hand', I can see what things are 'within reach' or out of reach of my stick.

The brain makes up the bulk of the nervous system, but it is part of that larger system, which occupies and interacts with the rest of the organism. The body is not a discreet entity. It ingests, contains and expels solids, liquids, and gasses, without which cognition—and life itself—would be unsustainable. The body is host to myriad life forms with nonhuman DNA, inextricably intertwined with other life forms (Di Paolo 2009). Human and nonhuman animals extend their capacities for coupling with their environments by using objects to expand their potential for action, perception, and communication.¹¹

We take cognitive extension to extremes through tools and technology. Visual language is a cognitive tool, often marked on material surfaces, enabling us to create meaning outside our bodies. The objects we create serve as extensions of our consciousness. Images permit their creators to transcend the limits of mental imagery, engaging in complex, multi-layered cognitive processes (Loughlin 2013). New interfaces connecting humans and machines are providing unprecedented ways of extending our cognitive horizons. Thinking about tools in terms of cognitive extension can provide novel approaches to research problems in aesthetics and visual communication.¹²

The affective dimension is essential to the embodied paradigm. Affect shapes cognition. It is regulated by neurotransmitters and hormones in response to the structural coupling of an organism with its environment (Gallagher 2015, 100–101). A valued object or agent attracts; a threatening object or agent repels (Gibson 1986, 18–19; Colombetti 2017).¹³ The cognizing

¹¹ See: Clark 2011; Colombetti 2017; Thompson, Stapleton 2009, 28; Ward, Stapleton 2012, 102–103.

¹² Nannicelli (2019) recognizes the utility of the extended mind thesis in aesthetic studies, while expressing caution about its limits.

¹³ For a history of ideas about emotions in the West, including Thomas Hobbes' "voluntary motions; commonly called the passions," see: Rosenwein (2016). The latter quote is from chapter 6 of the *Leviathan* (see: Rosenwein 2016, 289).

agent makes sense of its environment in terms of affordances. Our affective perspective is essential for successful interaction with the environment (Kiverstein, Miller 2015). Affect—including emotions, feelings and moods—motivates and demotivates perception and action.¹⁴ Fundamental processes of emotive cognition underlie the abstract cognition that is the hallmark of our species (Thompson, Stapleton 2009, 26).

Aesthetic experience is inherently affective. Through it we feel aspects of our environment with an intensity that contrasts with ordinary experience. Aesthetic emotions and feelings emerge from our interaction with the environment, or from communication by means of any of several sensorimotor modalities, or through multimodal intersubjectivity. Traditionally, the aesthetic dimension of visual language has been left to philosophers and art historians. Efforts to integrate the affective and aesthetic dimensions into a broader understanding of human experience (Lindblom 2015), including the discipline called neuroaesthetics (Zeki 1999), have focused on the modern category of ‘art’, while this is only one way to conceptualize the making and experience of visual signs. Ingold (2011b, 12) explains: “we have to cease thinking of painting and carving as modalities of the production of art, and view art instead as a historically specific objectification of painting and carving.” The field of evolutionary aesthetics, or bioaesthetics, provides a platform for defining essential properties of aesthetic experience, moving beyond philosophical perspectives that are caught up in disembodied views of human experience.¹⁵

Mind-body dualism tends to sublimate supposedly ‘high-order,’ abstract mental processes, relegating emotions to an inferior, bodily-based role. Recent research shows that the affective dimension is an inseparable part of human cognition. It follows that we need to develop more effective methods for uncovering the affective and aesthetic aspects of visual communication, adapting them to specific modes of signification. Comprehending the transmission of emotions and feelings in visual language should have a place in our research agenda. The concept of empathy is fundamental.¹⁶

Socially situated cognition depends on the communication of ideas and emotions through visual, auditory, tactile, and other modes of interaction. The dynamic mind-body-environment system is distributed among the

¹⁴ See: Damasio 2000; LeDoux 1996; Colombetti 2017.

¹⁵ See: Deacon 2006; Hodgson 2000, 2006; Westphal-Fitch, Fitch 2018.

¹⁶ See: Brinck 2017; Gallese 2001; Gangopadhyay 2014.

members of a society, providing a matrix for the making of meaning (De Jaegher, Di Paolo 2007; Lindblom 2015). In a biologically grounded view of semiotics, signs do not encode meaning; they elicit context-dependent understandings (Kravchenko 2007). Concepts should not be considered as static abstract representations, rather as the consequence of interactions within a network of agents in an environment (Semin *et al.* 2012).

An embodied approach to the study of visual language implies a transdisciplinary view of the sociocultural context of the signs in a given system. Iconic, semasiographic, and glottographic signs do not possess implicit semantic values. Like cognition, they are emergent features of the complex interactions of a group of human agents in an environment, and these systems change through time and space.

The phrase **embodied simulation** was proposed by Gallese after the discovery of mirror neurons in monkeys. This concept explains how visual and auditory stimuli evoke the activation of motor areas in an agent's brain, resulting in the mental simulation of movement. Objects in space are experienced in relation to the body. Experience involves the affordances offered by the environment for the attainment of the agent's objectives. Perceptual experience triggers a plan for action. When monkeys and humans observe other agents like themselves, the actions of the other are experienced by the observer through a process of simulation, being mapped onto the motor system in the brain of the observer. We feel the actions of others as if they were our own. Embodied simulation is at the heart of intersubjective understanding, emotions, and empathy. Gallese shows that the automatic process of action simulation is different from the deliberate act of mental imagery, in which an agent imagines perceiving or doing something, and that this difference can be observed in studies using brain-imaging techniques.¹⁷

The concept of embodied simulation permits a deeper understanding of human communication, including verbal and visual languages and aesthetic intersubjectivity (Lindblom 2015). Gallese has shown that viewing handwritten alphabetic texts, Chinese writing, abstract paintings, and meaningless scribbles activates, in the brain of an observer, motor systems for the control of the hand (Gallese 2016, 243).¹⁸ We feel the visual stimuli in our bodies, heightening our aesthetic response.

¹⁷ See: Gallese 2001, 2005, 2015, 2016.

¹⁸ See also: Sbriscia-Fioretti *et al.* 2013.

Embodied Cognition as a Framework for Research in Aesthetic Theory and Practice

To test the possibilities of the embodied paradigm in understanding the aesthetic potency of non-Western visual language, I have used its concepts to inquire into the ubiquitous reptilian iconography in pre-Hispanic Mesoamerica. The results were presented in 2016, in the international conference *A Body of Knowledge—Embodied Cognition and the Arts* (Wright-Carr 2018b). In this study, I describe the foundations of enactive and evolutionary aesthetics, explaining that the fear of snakes in humans is the result of 60 million years of the coevolution of primates and serpents. The prevalence of reptilian imagery in ancient Mesoamerican sculpture and painting is testimony to the exploitation of ophidian forms to produce unusually intense emotional responses in viewers. The aesthetic potency of these images transcends the gulf separating ancient Mesoamericans from contemporary societies, as it can still be felt today. These findings indicate that the embodied perspective can provide a deeper understanding of the creation and reception of images.

Several years of academic practice, leading seminars and directing projects with graduate and undergraduate students in the arts, have shown that the embodied perspective can be productively employed in art education. Students acquire a deeper understanding of themselves and their relation to their environments, finding new avenues for the intersubjective expression of experience. Two examples will have to suffice here.¹⁹ In one project, inspired by research into reptilian iconography in Mesoamerica, Stephanie Constantino-Vega worked in a herpetarium, handling serpents, extracting essences in sketches, and using these experiences and visual notes to create drawings and paintings. In addition to the artworks, the preliminary results of this study have been accepted for publication in an academic journal (Constantino-Vega, Wright 2019). Another project using embodied aesthetic theory was undertaken by Daniela Ramírez-González, who worked with native artisans in Brazil and Mexico to learn techniques of weaving and binding plant fibres. She then selected plants from her immediate environment and manipulated them to create ephemeral urban installations based on feminine anatomy. These artworks generated a symbolic dialogue between the artist and the population of Guanajuato, a historic mining city in the mountains of central Mexico (Ramírez-González 2017; Ramírez-González, Wright-Carr 2019).

¹⁹ Additional projects and publications are mentioned in Wright 2018a, 82–83.

Final Reflections

The embodied perspective is naturalistic. It distances itself from much of the Western philosophical tradition, particularly that in which human experience is treated as essentially different from other forms of life. An enactive view of visual communication avoids the pitfalls of traditional dichotomies—human and animal, mind and body, reason and emotion, art and writing—so that we can evaluate visual language on its own terms.

The creation of visual language involves perception and action, as human agents bodily interact with their material and symbolic environments. This aspect of sign-making is often overlooked or undervalued. Its study can add a vital dimension to our understanding of sense-making with visual signs. When we consider the embeddedness of cognition, we look at the context of signs, their makers, and their observers. The concept of extended cognition invites us to reconsider the role of visual signs, not merely as reflections or projections of mental representations, but as extensions of the mind beyond the limits of the body. The interactions between mind, body, tools, and surfaces acquire a greater relevance.

The affective dimension of cognition, including the aesthetic responses that often accompany the experience of visual language, is part of the embodied perspective. Affect is an inseparable ingredient of conscious and non-conscious processes and is a vital ingredient in aesthetic experience. Omitting the study of the emotions expressed and experienced in visual language will limit our understanding of how these systems of signs are experienced in the embodied minds of the people that contemplate them.

Visual communication, like verbal language, aids in the distribution of cognition among the members of a society. The idea of a dynamic system, integrating the minds of its members in an environment, provides a conceptual structure for the study of visual language and its role in this system. Embodied simulation theory helps explain the neural processes involved in the visual communication of cognitive processes.

The embodied paradigm provides a framework for broadening our understanding of visual communication by considering its role in a complex system, in which agents use signs to make sense of themselves and their environments, and to communicate this sense to others. It compels us to look deeply into our nature: the evolutionary heritage genetically encoded in our bodies, vision and other modes of perception, the unity of perception and action, the use of visual signs in the sharing of ideas and experience, and the role of affect and aesthetics in human experience.

Bibliography

1. Arnheim Rudolf (1969), *Visual Thinking*, Berkeley, Los Angeles, & London: University of California Press.
2. Brinck Ingar (2017), "Empathy, Engagement, Entrainment: The Interaction Dynamics of Aesthetic Experience", *Cognitive Processing*, 19 (2), pp. 201–213.
3. Chemero Anthony (2011), *Radical Embodied Cognitive Science*, Cambridge & London: The MIT Press.
4. Clark Andy (2011), *Supersizing the Mind. Embodiment, Action, and Cognitive Extension*, Oxford & New York: Oxford University Press.
5. Colombetti Giovanna (2017), "Enactive Affectivity, Extended", *Topoi: An International Journal of Philosophy*, 36 (3), pp. 445–455.
6. Constantino-Vega Stephanie, & Wright-Carr David Charles (2019), "Reptiles Cós-micos y Experiencias Estéticas: Una Exploración Pictórica", *El Ornitorrinco Tachado*, 9 [in press].
7. Craig Arthur D. (2013), "Interoception: The Sense of the Physiological Condition of the Body", *Current Opinion in Neurobiology*, 13 (4), pp. 500–505.
8. Damasio Antonio R. (2000), *The Feeling of What Happens. Body and Emotion in the Making of Consciousness*, New York: Harcourt.
9. Damasio Antonio R. (2005), *Descartes' Error. Emotion, Reason, and the Human Brain*, London: Penguin Books.
10. De Jaegher Hanne, Di Paolo Ezequiel Alejandro (2007), "Participatory Sense-Making. An Enactive Approach to Social Cognition", *Phenomenology and the Cognitive Sciences*, 6 (4), pp. 485–507.
11. Deacon Terrence W. (2006), "The Aesthetic Faculty", [in:] Mark Turner (ed.), *The Artful Mind. Cognitive Science and the Riddle of Human Creativity*, Oxford & New York: Oxford University Press, pp. 21–53.
12. Dewey John (2005), *Art as Experience*, New York: Penguin Group.
13. Di Paolo Ezequiel Alejandro (2009), "Extended Life", *Topoi: An International Journal of Philosophy*, 28 (1), pp. 9–21.
14. Gallagher Shaun (2015), "Invasion of the Body Snatchers: How Embodied Cognition is Being Disembodied", *The Philosophers' Magazine*, 68, pp. 96–102.
15. Gallese Vittorio (2001), "The 'Shared Manifold' Hypothesis. From Mirror Neurons to Empathy", *Journal of Consciousness Studies*, 8 (5/7), pp. 33–50.
16. Gallese Vittorio (2005), "Embodied Simulation: From Neurons to Phenomenal Experience", *Phenomenology and the Cognitive Sciences*, 4 (4), pp. 23–48.
17. Gallese Vittorio (2015), "The Multimodal Nature of Visual Perception: Facts and Speculations, the Kanizsa Lecture 2015", *Gestalt Theory*, 38 (2/3), pp. 127–140.
18. Gallese Vittorio (2016), "Bodily Framing", [in:] Caroline A. Jones, David Mather, Rebecca Uchill (eds.), *Experience: Culture, Cognition and the Common Sense*, Cambridge & London: The MIT Press, pp. 236–247.
19. Gangopadhyay Nivedita (2014), "Introduction: Embodiment and Empathy, Current Debates in Social Cognition", *Topoi: An International Journal of Philosophy*, 33 (1), pp. 117–127.

20. Gibson James J. (1986), *The Ecological Approach to Visual Perception*, New York & Hove: Psychology Press.
21. Hodgson Derek (2000), "Art, Perception and Information Processing: An Evolutionary Perspective", *Rock Art Research*, 17 (1), pp. 3–34.
22. Hodgson Derek (2006), "Understanding the Origins of Paleart: The Neurovisual Resonance Theory and Brain Functioning", *PaleoAnthropology*, pp. 54–67.
23. Husserl Edmund (2001), *Phantasy, Image Consciousness, and Memory (1898–1925)*, trans. John B. Brough, Dordrecht: Springer.
24. Ingold Tim (2011a), *Being Alive. Essays on Movement, Knowledge and Description*, London & New York: Routledge.
25. Ingold Tim (2011b), *The Perception of the Environment. Essays on Livelihood, Dwelling, and Skill*, 2nd ed., London & New York: Routledge.
26. James William (1910), *The Principles of Psychology*, 2 vols., New York: Henry Holt & Company.
27. Johnson Mark (1990), *The Body in the Mind. The Bodily Basis of Meaning, Imagination, and Reason*, Chicago & London: The University of Chicago Press.
28. Johnson Mark (2007), *The Meaning of the Body. Aesthetics of Human Understanding*, Chicago & London: The University of Chicago Press.
29. Kiverstein Julian, Miller Mark (2015), "The Embodied Brain: Towards a Radical Embodied Cognitive Neuroscience", *Frontiers in Human Neuroscience*, 9, article 237, [online] <http://journal.frontiersin.org/article/10.3389/fnhum.2015.00237/full> [accessed: 8.08.2016].
30. Kravchenko Alexander V. (2007), "Essential Properties of Language, or Why Language Is Not a Code", *Language Sciences*, 29 (5), pp. 650–671.
31. Lakoff George (1990), *Women, Fire, and Dangerous Things. What Categories Reveal about the Mind*, Chicago: The University Of Chicago Press.
32. Lakoff George, Johnson Mark (1981), *Metaphors We Live By*, 2nd ed., Chicago: The University of Chicago Press.
33. Lakoff George, Johnson Mark (1999), *Philosophy in the Flesh. The Embodied Mind and Its Challenge to Western Thought*, New York: Basic Books.
34. LeDoux Josphe (1996), *The Emotional Brain. The Mysterious Underpinnings of Emotional Life*, New York: Simon & Schuster.
35. Lindblom Jessica (2015), "Meaning-Making as a Socially Distributed and Embodied Practice", [in:] Alfonsina Scarinzi (ed.), *Aesthetics and the Embodied Mind: Beyond Art Theory and the Cartesian Mind-Body Dichotomy*, Dordrecht, Heidelberg, New York & London: Springer, pp. 2–19.
36. Loughlin Victor (2013), "Sketch This: Extended Mind and Consciousness Extension", *Phenomenology and the Cognitive Sciences*, 12 (1), pp. 41–50.
37. Maturana Humberto R. (1980), "Biology of Cognition (1970)", [in:] Humberto R. Maturana & Francisco J. Varela (eds.), *Autopoiesis and Cognition: The Realization of the Living*, Dordrecht, Boston & London: D. Reidel Publishing Company, pp. 5–58.
38. Maturana Humberto R., Varela Francisco J. (1980), "Autopoiesis. The Organization of the Living. 1973", [in:] Humberto R. Maturana & Francisco J. Varela (eds.), *Autopoiesis and Cognition: The Realization of the Living*, Dordrecht, Boston & London: D. Reidel Publishing Company, pp. 59–123.

39. Maturana Humberto R., Varela Francisco J. (1998), *The Tree of Knowledge. The Biological Roots of Understanding*, trans. Robert Paolucci, Boston & London: Shambhala.
40. Merleau-Ponty Maurice (1962), *Phenomenology of Perception*, trans. Colin Smith, London & Henley: Routledge & Kegan Paul.
41. Nannicelli Ted (2019), "Aesthetics and the Limits of the Extended Mind", *The British Journal of Aesthetics*, ayy048, [online] <https://doi.org/10.1093/aesthj/ayy048> [accessed: 26.01.2019].
42. Noë Alva (2002), "Is the Visual World a Grand Illusion?", *Journal of Consciousness Studies*, 9 (5/6), pp. 1–12.
43. Noë Alva (2006), *Action in Perception*, Cambridge & London: The MIT Press.
44. O'Regan J. Kevin (2011), *Why Red Doesn't Sound Like a Bell. Understanding the Feel of Consciousness*, Oxford & New York: Oxford University Press.
45. O'Regan J. Kevin, Noë Alva (2001), "A Sensorimotor Account of Vision and Visual Consciousness", *Behavioral and Brain Sciences*, 24 (5), pp. 939–1031.
46. Ramírez-González Daniela (2017), *Palhia, Fitoformas Infuorescentes. Trabajo de Titulación en la Modalidad de Ejecución de Obra para Obtener el Título de Licenciada en Artes Plásticas*, Guanajuato: University of Guanajuato.
47. Ramírez-González Daniela, Wright-Carr David Charles (2019), "Cuerpo y Ambiente. Una Exploración Estética Interactiva" [manuscript submitted for publication].
48. Rosenwein Barbara H. (2016), *Generations of Feeling. A History of Emotions, 600–1700*, Cambridge: Cambridge University Press.
49. Ryle Gilbert (1951), *The Concept of Mind*, reprint of the 1949 ed., London: Hutchinson's University Library.
50. Sampson Geoffrey (2015), *Writing Systems*, 2nd ed., Sheffield & Bristol: Equinox Publishing.
51. Sbriscia-Fistretti Beatrice, Berchio Cristina, Freedberg David, Gallese Vittorio, Umiltà Maria Alessandra (2013), "ERP Modulation during Observation of Abstract Paintings by Franz Kline", *Plos One*, 8 (10), [online] <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0075241> [accessed: 30.01.2015].
52. Semin Gün R., Garrido Margarida V., Palma Tomás A. (2012), "Socially Situated Cognition: Recasting Social Cognition as an Emergent Phenomenon", [in:] Susan T. Fiske & C. Neil Macrae (eds.), *The Sage Handbook of Social Cognition*, London: Sage Publications, pp. 138–164.
53. Shapiro Lawrence (2011), *Embodied Cognition*, London & New York: Routledge.
54. Sheets-Johnstone Maxine (2004), "On Bacteria, Corporeal Representation, Neandertals, and Martha Graham: Steps toward an Evolutionary Semantics", [in:] Morana Alač & Patrizia Violi (eds.), *In the Beginning. Origins of Semiosis*, Bologna: Horizons Unlimited & Brepols Turnhout, pp. 105–136.
55. Sheets-Johnstone Maxine (2011), *The Primacy of Movement. Expanded Second Edition*, Amsterdam & Philadelphia: John Benjamins Publishing Company.
56. Sheets-Johnstone Maxine (2015), "Embodiment on Trial: A Phenomenological Investigation", *Continental Philosophy Review*, 48 (1), pp. 23–39.
57. Thompson Evan, Stapleton Mog (2009), "Making Sense of Sense-Making: Reflections on Enactive and Extended Mind Theories", *Topoi: An International Journal of Philosophy*, 28 (1), pp. 23–30.

58. Varela Francisco J., Thompson Evan, Rosch Eleanor (1993), *The Embodied Mind. Cognitive Science and Human Experience*, Cambridge & London: The MIT Press.
59. von Uexküll Jakob (1957), "A Stroll Through the Worlds of Animals and Men. A Picture Book of Invisible Worlds [...] (1934)", [in:] idem, *Instinctive Behavior. The Development of a Modern Concept*, trans. & ed. Claire H. Schiller, New York: International Universities Press, pp. 5–80.
60. von Uexküll Jakob (1982), "The Theory of Meaning", *Semiotica*, 42 (1), pp. 25–82.
61. Ward Dave, Stapleton Mog (2012), "Es Are Good. Cognition as Enacted, Embodied, Embedded, Affective and Extended", [in:] Fabio Paglieri (ed.), *Consciousness in Interaction: The Role of Natural and Social Context in Shaping Consciousness*, Amsterdam & Philadelphia: John Benjamin Publishing Company, pp. 89–104.
62. Westphal-Fitch Gesche, Fitch, W. Tecumseh (2018), "Bioaesthetics: The Evolution of Aesthetic Cognition in Humans and Other Animals", *Progress in Brain Research*, 237, pp. 3–24.
63. Wright-Carr David Charles (2017), "Signs of Resistance: Iconography and Semasiography in Otomi Architectural Decoration and Manuscripts of the Early Colonial Period", *Visible Language*, 51 (1), pp. 58–87.
64. Wright-Carr David Charles (2018a), "La Ciencia Cognitiva Corporeizada: Una Perspectiva para el Estudio de los Lenguajes Visuales", *Entreciencias. Diálogos en la Sociedad del Conocimiento*, 6 (16), pp. 73–88, [online] <http://dx.doi.org/10.22201/enesl.20078064e.2018.16.63364> [accessed: 23.09.2018].
65. Wright-Carr David Charles (2018b), "Sacred Reptiles and Native Worldview: Enactive Aesthetics in Ancient Mesoamerica", *Proceedings of A Body of Knowledge—Embodied Cognition and the Arts Conference*, eScholarship, California Digital Library, Oakland: University of California, [online] <https://escholarship.org/uc/item/7548b88w> [accessed: 21.01.2019].
66. Zeki Semir (1999), *Inner Vision. An Exploration of Art and the Brain*, Oxford & New York: Oxford University Press.

Francis Mechner*

A Naturalistic and Behavioral Theory of Aesthetics

Abstract

Aesthetic reactions occur when cognitive and affective elements interact, in diverse arts. Affective elements result from past Pavlovian conditioning events and other sources. Compounding raises these effects to the level of aesthetic reactions. Properties of domains in which aesthetic reactions occur are identified. Cognitive ability is selected phylogenetically by the discernment of beauty. Aesthetic reactions help maintain competencies like language, conceptualization, and abstract thinking.

Keywords

Aesthetics Theory, Behavioral Aesthetics, Pavlovian Conditioning, Operant Behavior, Beauty in the Arts

1. How the Topic is Addressed

1.1. The Empirical-Naturalistic Approach

To some, a behavioral and biological approach to the study of aesthetic reaction may seem strange, but to a behavioral and biological scientist, it is the only possible approach. The goal, after all, is to gain an understanding of a natural phenomenon—of something that is *consistently observed and reported independently by different observers* who agree that the phenomenon is real. Real, in this context, means that independent observers will make the same observation, and make it in more than one way so as to make sure it's not illusory. The value of any scientific account depends on the extent to which it meets this standard.

* The Mechner Foundation and Columbia University
Email: fmechner@panix.com

A useful first step is to partition the task into component questions:

1. What is the natural phenomenon being studied and our basis for believing it exists?
2. Where, when, and under what conditions do reactions termed “aesthetic” occur?
3. How do aesthetic reactions form?
4. How are aesthetic reactions primed or potentiated?
5. How do they change as a function of number of exposures?
6. How did it come about that humans exhibit aesthetic reactions and sensibilities?
7. What is their domain and their relation to the perception of beauty?
8. Did aesthetic sensibilities perform a useful function during our biological evolution?

Three previous articles (Mechner 2018a, 2018b, 2019) were directed at these questions. I adopted an essentially empirical, naturalistic approach that defers hypotheses or theories until sufficient data are on hand—a strategy for the exploration of uncharted territory that I learned in the Columbia University Psychology Department of the 1950s.¹

1.2. Private Sensations and Events

This general approach, variously characterized as “logical or empirical positivism,” (Bridgeman 1927, Carnap 1928/1967, Hempel 1952) or “naturalistic,” presents special challenges when applied to sensations that are inherently private or “subjective,” like pain, hunger, thirst, nausea, sorrow, joy, and so forth. What makes such sensations “real” nonetheless is that independent observers can agree that they occur. Since aesthetic sensations and

¹ Columbia’s Psychology Department, was, at that time, one of the spawning grounds for naturalistic approaches to the study of behavior. I arrived there from a youth dominated by art, music, literature, and burning questions about the nature of aesthetic sensibilities. My Columbia professors Fred Keller, W. N. Schoenfeld, Ernest Nagel, and Lofti Zadeh then steered me in the direction implied by this article’s title.

In 2017, *The Psychological Record* and its Guest Editor Marcus J. Marr organized a special issue featuring commentaries by nine prominent behavioral scientists regarding my original 2018a article “A behavioral and biological analysis of aesthetics” and my reply to those commentaries.

reactions are members of that set, it is worth reviewing the general process by which private or subjective sensations come to be observable and thus qualify as “real” and therefore suitable for scientific investigation.

How can I know that you have a private sensation, such as a certain pain? Here is how. You observed that when I pricked my finger with a pin, I said “ouch.” When *you* then pricked your finger with a pin, you imitated what I had said in that circumstance and also said, “ouch.” When I subsequently hear you say “ouch” in the context of a pinprick, I am *observing* your pain (without actually feeling it). I “*explain*” your pain by pointing to the pinprick. Physiologists may amplify this explanation with a reductionist approach that identifies such mechanisms as pain receptors in the skin, and neural pathways to brain structures that are activated.

This same epistemological paradigm is applicable to all instances in which we observe private sensations of others, including aesthetic reactions. The first level of evidence consists of another individual’s verbal utterance or other overt reaction that occurs in conjunction with certain observed and specifiable circumstances (the counterpart of the pinprick.) Physiologists may be able to observe correlated physiological events (e.g., dehydration when thirst is reported, pupillary dilation when pleasure or excitement is reported, or autonomic nervous system activity when fear is reported.) Neuroscientists have begun to use fMRI technology to identify neural correlates of other physiological events and verbal reports.

1.3. The Broad Conceptualization of Behavior

Behavior is any activity of an organism—a conceptualization that is broader than some others. It includes the activities of the body’s muscles and systems—nervous, vascular, endocrine, etc.—and such interactions with the environment as perceiving, reacting, avoiding, escaping, discriminating, or generalizing.²

² This conceptualization encompasses such cognitive behavioral events as learning, conceptualizing, categorizing, choosing, visualizing, and complex skills like calculating, reading, and writing. It also encompasses more complex behaviors based on more elaborately derived relations such as analyzing, imagining, deceiving, seducing, envying, competing, and so forth. All of these behaviors, no matter how complex, can be defined operationally and analyzed in terms of simpler behaviors and specifiable events that comprise the contingencies that define them (Mechner 2010, 2011).

Some of these behaviors are readily observable by others when they occur, while those that are purely neural and occur only covertly (privately,) are not, and may be described as “thinking” or “feeling.” But all of these behaviors are observable and measurable, at least in principle if not with existing technology. Direct observability, being purely a matter of current technology, does not enter into the definition of behavior.

It is useful to divide the behavior of vertebrates into two broad categories: (1) **operant** or “instrumental” behavior, which operates on the organism’s environment; and, (2) **respondent** behavior (like digestion, reflexes, vascular function,) which is elicited by certain **stimuli**. Instances of operant behavior may be referred to as **operants** and of respondent behavior as **respondents**.

Respondents are generally subject to Pavlovian conditioning; when a stimulus that normally elicits certain respondents is paired with a previously neutral stimulus, the previously neutral stimulus may come to elicit similar respondents and is then termed a **conditioned stimulus**.

Both operant and respondent behavior can be either overt and readily observable, or entirely neural. Behavior that is entirely neural, though difficult to observe, can still be operant. The chess player’s thinking behavior is operant because it will have an effect on the environment when the move is made. All operants have an initial neural component, which is only sometimes followed by muscle contractions. Affective reactions may include overt or covert respondents (Lane & Nadel 2000). When strong, they may include overt operants, such as exclamations.

Reinforcement: Operants sometimes have consequences whose effect is to increase the frequency, rate, or probability of future occurrences of similar operants. Such consequences are termed **reinforcement**, and events that **reinforce** behavior may be termed **reinforcers**. Reinforcement thus maintains the operant behavior that generates it, but a reinforcer’s effectiveness depends strongly on the delay with which it follows the behavior—the longer the delay, the smaller the effect.

Operants, whether simple or complex, change with successive occurrences, becoming ever more stereotyped, rapid, and automatized, less susceptible to modification by consequences, and ever less dependent on reinforcement for their maintenance.

1.4. Mind, Cognitive Behavior, Emotion, and Affect

The fuzzy concept of mind may be defined, as per Aristotle, as “a set of powers and potentialities” (Bennett & Hacker 2003, 53, 62–63), corresponding to the concept of the behavioral repertoire. Mind is rarely invoked in the study of behavior because it is so encompassing, just as the concept of life is rarely invoked by biologists.

Behavior may be termed “cognitive” when it involves the manipulation of concepts and their relations or the use of language, like the behaviors mentioned in Footnote 2, though all such behaviors are analyzable and decomposable into simpler and more directly measurable behaviors. The perception of relations in music or other arts is also often referred to as cognitive when the relations are sufficiently complex (e.g., Hargreaves & North 1997).

As has often been pointed out (e.g., Barrett 2017, Berlyne 1971, Mechner 2018b) the concept of emotion is too fuzzy to be useful in a scientific analysis, carries too many undesired connotations, and is categorized in too many different ways. For present purposes, the term affect is more useful.

1.5. The Aesthetic Reaction

We can now address Question 1 above—the natural phenomenon we are studying and our basis for believing it exists. One of our targets is the aesthetic reaction’s counterpart of the pinprick—the combination of objectively described stimuli and circumstances that can evoke aesthetic reactions. When an aesthetic reaction is strong enough to result in observable operant behavior, the counterpart of the overt “ouch” may be some combination of a smile, a gasp, or an oral statement such as “beautiful!” “wow!” “amazing!” “awesome!” “surprising,” “magnificent!” or “moving,” uttered in the context of perceiving certain stimuli in certain situations and circumstances.

Aesthetic reactions occur in the course of daily living when we see or hear something that we consider beautiful or moving, like a colorful flower garden as we walk along. Vladimir Konečni called weak or private aesthetic reactions “aesthetic mini-episodes imbedded in the stream of daily life” (Konečni 2015).³ The reaction may be covert, and we may not even be aware of it, even when the reaction has a low-level affective component.

³ For more detail regarding the nature of the aesthetic reaction, see: Mechner (2018a) Sections 1.3–1.4.

Our belief that aesthetic reactions exist at all is based largely on consistent and universal verbal reports of private events generally described as “pleasurable” and “involuntary.” The reaction is generally reinforcing, but not reinforcing like eating when hungry or drinking when thirsty. Rather, it is of a distinctive type that is independent of the satisfaction of “drives” (Rolls 2005).

1.6. Essential Defining Components of the Aesthetic Reaction

The defining behavioral components of the aesthetic reaction are covert, private, and therefore not readily observable. Some of them are covert cognitive operant behavior (e.g., perceiving conceptual relationships like incongruity, analogy, differences, similarities, “surprisingness,” parsimony, etc.) and some are *affective* (e.g., moving associations and recollections, positive affect produced by reinforcing effects, reactions to emotionally charged stimuli, etc.) As will be seen, *the affective reactions are normally elicited by the cognitive components* functioning as conditioned stimuli. But for these interactions to produce even covert aesthetic reactions, they must be amplified by interactive effects like compounding and synergy, as will be explained.

The aesthetic reaction’s strength is a function of many potentiating variables in addition to the properties of the stimulus. Potentiation results from the level of attention the stimulus receives, the level of arousal (as defined by Berlyne (1971)), the reacting individual’s physiological and mental state, learning, priming, and socio-cultural history, and the socio-cultural context of the situation. Defined in this way, the reality of aesthetic reactions is supported by their consistency and universality across cultures and eras, much like the universality of pain or thirst. Neuroscientists, using fMRI technology, have begun to identify the neurological structures and pathways of the neural activity correlated with these types of reports and observations (e.g., Salimpoor, Benovoy, Larcher, Dagher, Zatorre 2011), though that methodology is still being refined (Mechner 2018b, Section 5.2). But neuroscience technology may be pointing to ways to observe individuals reacting aesthetically.⁴

⁴ A neuroscience methodology that attempts such an approach, and its related methodological issues, is described and discussed in: Mechner 2018b, Part 5.

2. The Formation of Aesthetic Reactions

2.1. The Process

Figure 1 offers a schematic overview of how aesthetic reactions form. Cognitive and affective events come together, and when they do, they interact transformatively.

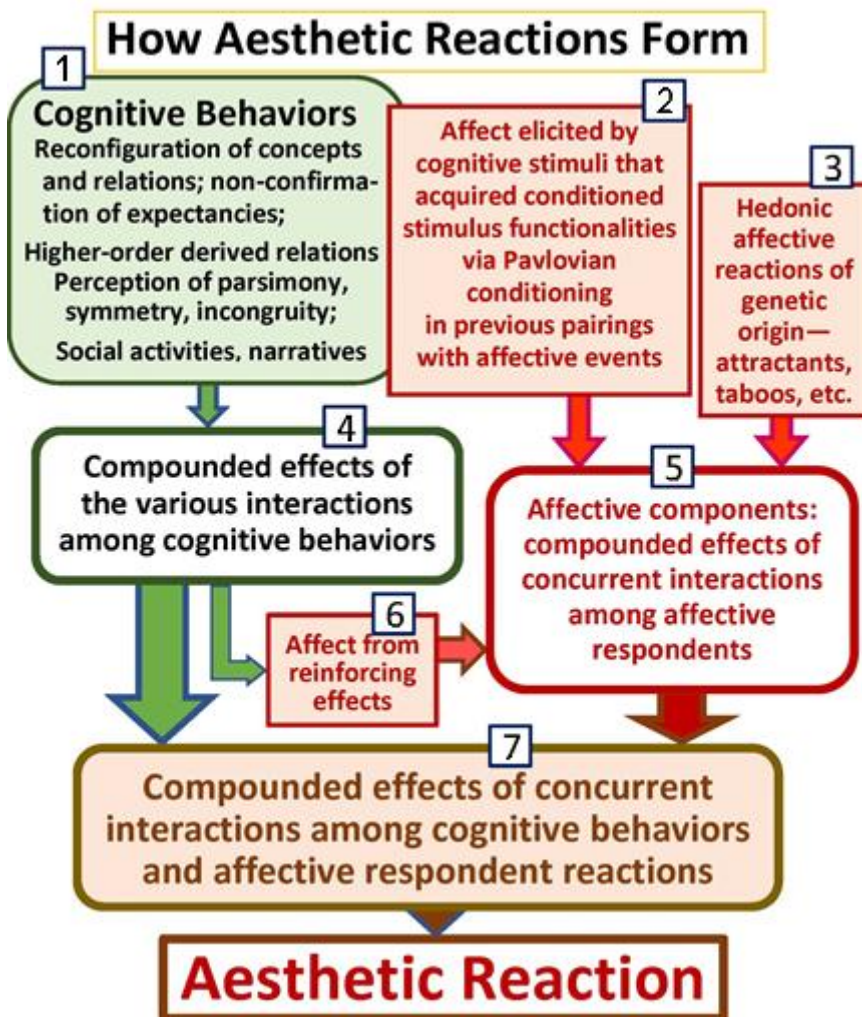


Figure 1 (Adapted from Mechner 2019)

Boxes 4 and 5 jointly create the compounded effects represented by Box 7, which in turn gives rise to the affective reaction. The sources of the affective components represented by Box 5 are contributed by Boxes 2, 3, and 6. Box 4 represents the effects of the various possible cognitive behavioral interactions, some of which are listed in Box 1.

Note that the term compounding appears in Boxes 4, 5, and 7 to emphasize the essential fact that the augmentation by compounding is itself transformative. These compounding effects enable the total reaction to reach the threshold for the unique affective and reinforcing qualities of an aesthetic effect.

2.2. Interactions in the Synergetic Brew

A key element of the theory is that aesthetic reactions are produced by *synergetic interactions* among cognitive and affective reactions. The term “synergetics” was introduced by the German physicist Herman Haken (1978) and the American engineering theorist Buckminster Fuller (1975) to describe interactions that are not merely synergistic (as when the total is greater than the sum of its parts,) but *transformative*, where the result is *different in kind* from the interacting elements. Nature is replete with synergetic interactions, examples being chemical reactions, protein synthesis, or fertilization.

I have been using the term *synergetic brew* to refer to simultaneously present synergetically interacting elements (Mechner 2018a, Part 1).⁵ These are the elements listed in Box 1—concepts, their relations, perceptions, recollections, situations, sensory stimuli and mental events (Mechner 2018a, Sec. 10.1). One can think of the synergetic brew as a cauldron filled with diverse elements that interact to create novel, surprising, arousing, emotionalizing, reinforcing, and transformative effects.

2.3. Cognitive and Instructional Effects

Cognitive learning generally involves reconfigurations of the concept repertoire. The term “concept,” as used here, refers to a class or category within which the behavior generalizes, while that class is discriminated from other classes (Keller & Schoenfeld 1950). All concepts, even the most abstract ones and the relations among them, can be described in terms of discriminations

⁵ Artur Koestler’s “bisociation” concept has some similarities with the synergetics concept, but Koestler applied it to “the creative act,” not to aesthetics (Koestler 1964).

and generalizations. Categories of relations include equivalence (Fields & Arntzen 2018); and relational frames that deal with derived and higher-order relations (Barnes-Holmes, Finn, McEnteggart, Barnes-Holmes 2018; Hayes, Barnes-Holmes, Roche 2001). Examples from the verbal domain are syntax, induction, metaphor, analogy, parable, incongruity, and other devices of poetry, literature, or logic. Mechner 2018a, Part 2, and Sections 8 and 9 discuss concept manipulation devices used in the verbal arts, music, visual arts, mathematics, games, science, and other disciplines.

For most higher species, learning is key to survival and procreation, as it enables adaptation to the environment by increasing the ability to predict and influence it (Mechner 2018a, Section 4.1). Learning acquired its reinforcing effect as individuals susceptible to reinforcement by learning experiences survived and reproduced more successfully than individuals who lacked this susceptibility (Mechner 2018b, Section 4.3). That is also how curiosity, novelty, play, and exploratory behavior may have become widespread in the animal kingdom (Mechner 2018a, Part 3). The film medium may owe some of its unique reinforcing power to its provision of fast-paced learning experiences (Mechner 2018a, Sec.1.7, 9.2). All of the processes listed in Box 1 have some instructional effect via either concept manipulation, non-confirmation of expectancies, narratives, repetition, refreshment, maintenance, parsimony, symmetry, humor, the quality of artifacts, or certain social behavior.

2.4. Devices that Reconfigure the Concept Repertoire

Section 7.4 of Mechner 2018a discusses 16 types of concept manipulation devices that poets, writers, musicians, artists, film makers, humorists, and other creators of aesthetic effects employ to create synergetic brews that have reinforcing properties. Among these devices are parsimony (economy of means), symmetry (system properties unaffected by transformations) (Marr 2013; Petitjean 2007), and in the case of humor, incongruity. Parts 8 and 9 of Mechner 2018a describe how those devices and combinations of them create aesthetic effects. Here are some examples:

2.4.1. Parsimony, Economy of Means

The property of parsimony refers to the achievement of much with little—economy of means or effort. Instances of aesthetics effects due to parsimony are plentiful in mathematics and the sciences. (See also: Mechner 2018a, Sections 9.6, 9.7).

2.4.2. Incongruity

When concepts from obviously different domains are juxtaposed, as in all humor, the effect may be called whimsical, ironic, or incongruous. For a more detailed analysis of humor, see Mechner 2018a, Sections 7.4, 9.5.

2.4.3. Social Activities and Narratives

Many human activities evolved by being selected for the degree to which they contribute to survival and procreation (Mechner 2018b, Part 4). Their results are reinforcing *to the degree that they are performed effectively and well*. Examples of such reinforcers are *the quality* of artifacts like tools, vehicles, domiciles, or weapons; of collections; of social interactions; of acts of love; and of victories over rivals or enemies. Narratives in particular— anecdotes, humor, and little stories (Hineline 2018; 2005), create synergetic interactions that can act as reinforcers.

2.5. Expectancies and Surprises

The transformative nature of the synergetic interactions often resides in unanticipated, surprising, noteworthy, distinctive, or arousing events, as when expectancies are violated (e.g., when a familiar-looking food has an unexpected taste), or when outliers, anomalies, novel events, or accidental occurrences are perceived. In the arts, expectancies are often set up within the work itself, as for instance, in melodic, harmonic, and rhythmic progressions of music (Mechner 2018a, Section 8.4; North and Hargreaves 2017). Violations as well as confirmations of expectancies can result in learning. For a more detailed analysis of expectancies, see: Mechner 2018b, Sections 6.1–6.2.

2.6. Related Prior Work of Others

The present theory has elements in common with the work of Daniel Berlyne who founded “neo-experimental aesthetics” in the mid-1900s. In his book *Aesthetics and Psychobiology* and other writings, he assigned a central role to “arousal,” which resembles the traditional concepts of drive and motivation. He said that arousal increases the impact of such stimulus attributes as “novelty, surprisingness, complexity, ambiguity, incongruity, and puzz-

liness" when these are "collated."⁶ Martindale and Moore (1988) and others later proposed "prototypicality" (degree of conformity to a template, schema, or idealized version) as a further potential element.

Berlyne conceptualized the aesthetic response mainly in terms of "hedonic impact," "liking," and "preference," and related it to exploratory behavior, curiosity, and "expectations." (Berlyne 1960, 1971).⁷ This conceptualization differs from the present one. When defined as in Sections 1.4-1.5 above, *reacting aesthetically is not the same as "liking" or "preferring."* One may "like" cats, jazz, one's work, a certain person, getting up early, or a work or genre, without reacting aesthetically. When a work evokes an aesthetic reaction, usually only a part of the work evokes it, rarely the work as a whole. For instance, the aesthetic reaction to a song may be evoked only by a particular passage, voice, melody, modulation, rhythm, lyrics, or idiosyncratic association. The various possible meanings of liking and preferring depend on context.

Berlyne was prescient in his anticipation of the importance of the then-dawning neuroscience for the investigation of aesthetic reactions, before the advent of MRI and fMRI, or the identification of the roles and interrelated functions of the amygdala, nucleus accumbens, septal areas, and hippocampus.

3. Affective Components of the Aesthetic Reaction

3.1. Sources of Affective Respondents

Part of the reason why the cognitive effects produced by synergetic interactions are often reinforcing is that learning is generally reinforcing, as explained in 2.3 above. Box 6, "Reinforcing Effects," refers to the affective contributions of the total reinforcing effects of interactions described in Box 1. In general, reinforcing events often elicit respondent reactions, especially when they are large (e.g., physiological effects like pupillary contraction,

⁶ Vladimir Konečni, a former student of Berlyne's and contributor to the field in his own right, explained that Berlyne applied the term "collative" to the interactions of such stimuli and with stimuli experienced in the past.

⁷ But the "Wundt Curve" that Berlyne cites, and the "butterfly" curve in the context of hedonic effects, does not contribute to his theory. It describes not only the effects of hedonic value but also an infinite number of other biological and physical phenomena that have maxima with drop-offs at the extremes.

vascular effects, and neural effects like dopamine and norepinephrine release (Rehfeldt & Hayes 1998). But the affective contributions of such reinforcing effects are rarely sufficient to meet the entire affect requirement of an aesthetic reaction.

3.2. Other Sources of Affect

The affective reactions represented by Box 2 are created by earlier Pavlovian conditioning episodes in which some cognitive behavior coincided fortuitously with a positively affective situation (e.g., a loving parent reading to a child, a significant ritual, a memorable reunion, story-telling, warm shared experiences, and so forth). From time to time, such affective events happen to coincide with certain cognitive events. When they do, the cognitive event may acquire a conditioned stimulus functionality, with the affective situation corresponding to Pavlov's "unconditioned stimulus." The cognitive event may then, on subsequent occasions, elicit the affective reaction without the presence of the original affective circumstance. The two thick arrows leading to the Aesthetic Reaction box at the bottom of Fig. 1 represent the synergetic fusion of the cognitive and affective effects.

A third potential source of affect (Box 3) represents pre-existing affective components like depictions of violence, emotion, sex, loud sounds, hugeness, certain facial expressions, religious themes, or voice effects. Such affect-evoking stimuli are widely used in film, visual arts, music, dance, improvisation, oratory, theater, poetry, literature, architecture, and videogames. Other primal sources of affect are loss of loved ones and various types of parent-child interactions. Sophocles' *Oedipus Rex* invokes the affect-linked taboos of incest and patricide when events reveal that the man Oedipus had slain was his father and the woman with whom he had been sleeping was his mother. The tragic aspect, given its instructional value, does not override the aesthetic impact. The incest taboo can also be used to create comical effects via incongruity, as in Mozart's *The Marriage of Figaro*, when Figaro escapes his obligation to marry Marcelina by the incongruous revelation that he is her long-lost son.

3.3. The Strength and Longevity of Aesthetic Reactions

The *sheer number* of compounding synergetic and synergistic effects may take the total effect to a threshold beyond which the reaction becomes aesthetic. Parts 8 and 9 of Mechner 2018a present instances of compounding where the magnitude of the effect is a function of the number of interacting

elements. Each of the boxes in Fig. 1 lists synergetic and synergistic interaction effects that can be at play simultaneously. The magnitude of the total impact increases in compounding fashion according to the number of interacting elements. This effect is seen in the evolution of film over the past century. The medium's immersive and aesthetic power kept growing as elements were incrementally added to the brew, starting with mere motion, then sound, plot, sophisticated acting, color, wide screens, and 3D, for ever greater impact (Mechner 2018a, Sections 1.7 and 9.2). As the number of such elements increased additively, the impact increased in a compounding or transformative manner. A similar effect is seen in videogames and opera.⁸ In the performing arts, the impact may be compounded by the progressive addition of emotional elements and physical presence. In music, compounding effects can result from the addition of instruments. In the visual arts, from the sheer number of interacting elements like color, composition, size, conceptual associations for the subject, and affective elements. In games like chess or Go, the beauty of an effective move is a function of the number of contributing elements like parsimony (economy of materiel used), uniqueness (no other move works), difficulty, and thematic simplicity (Margulies 1977, Mechner 2018a, Section 9.8). The compounded effect of the dozens of the synergistic and synergetic interactions identified in the chart create the cusp that we describe as an aesthetic reaction.

3.4. Long-Term Retention of Aesthetic Impact

The reason affective reactions are often long-lived may be the biologically important function they served during evolution: recall of affective reactions to odors that signal dangers or opportunities, or to voices of friends or foes (Mechner 2018a, Part 3). It is commonly observed that a piece of music, a poem, or a work of art often evokes an aesthetic reaction even after a thousand exposures (Mechner 2018a, Sections 4.4–4.6; 2018b, Part 7), (though later reactions differ from initial ones). One factor that drives those changes is the interval between successive exposures: the longer the interval, the stronger the reaction to the next exposure. Pavlov named and described this phenomenon as “spontaneous recovery,”—the recovery of the response to the conditioned stimulus as a function of time since the last elicitation (Pav-

⁸ Richard Wagner used the term *Gesamtkunstwerk* for a work of art that brings several media together.

lov 1927). One may be moved more strongly by a song (or poem or work of art) after it has not been heard or seen for a time. The longevity of many aesthetic reactions may thus be due in part to their inclusion of affective reactions.

4. Biological Relationships Between Beauty and Aesthetics

4.1. The Epistemology of Perception and Beauty

Without a perceiving individual there is no beauty, just as there is no color without a retina that responds to certain bands of the energy frequency spectrum, and no sound without a cochlea that responds differentially to vibrations. Like other perceptions, “beauty” is not a property of stimuli, notwithstanding the common illusion that it is. Our perceptions of colors, for instance, are due solely to human retinal physiology (other species that have other retinal physiologies respond to different wavelengths and thus “see” different colors.) The same principle applies to more complex stimuli. Our perceptual apparatus and learning history influences what we believe is out there. Narratives, too, are perceived idiosyncratically. Different readers respond in terms of their personal histories and concept repertoires, the point made by Rosenblatt (1978) concerning reactions to poetry and literature. And when people listen to each other speak, “misunderstandings” are common. All perceptions are a function of the biology, learning history, physiological state, and current socio-cultural and physical environment of the perceiver. Most people are familiar with the feeling of being confronted with an objective measurement after having experienced a persuasive optical illusion. More reliable information requires objective measurement. The ancient topic of the relationship between our perceptions and physical reality takes on special significance in the context of aesthetic reactions.

This account may seem obvious to modern behavioral scientists, but in the history of aesthetics research, from Pythagoras and Plato to Gustav Fechner, the focus of attention was generally the stimulus rather than the perceiver. The other focus, especially in writings about the arts, has been the *creation* of the stimulus rather than its perception (e.g., Koestler 1964). Only in recent decades has the attention of researchers, including neuroscientists, begun to focus on behavioral and biological factors.

4.2. The Domains of Aesthetic Reactions

Question 2, where, when, and under what conditions aesthetic reactions occur, is the “domain” question I tried to answer when I analyzed over 200 phenomena one might call aesthetic, in 17 different disciplines including music, poetry, visual art, literature, humor, mathematics, performing arts and various natural phenomena such as flowers and bird plumages (Mechner 2018a, Parts 8 and 9). I also wanted to see if I could identify common attributes that might explain why the terms “aesthetic” and “beautiful” are applied to such a diversity of phenomena. Let us examine what some of these domains have in common:

(a) *The music domain.* All of the world’s musical cultures use scales whose note frequencies stand in certain simple mathematical relationships to one another. Rhythmic patterns and harmonic patterns create additional regularities (Levitin 2006). Conclusion: the music domain has a *penetrable regularity and orderliness*—penetrable in the sense of attributes that can be learned.

(b) *The visual domain.* The relative intensities, saturations, shapes, configurations, or contrasts of visual stimuli create information-carrying patterns that have orderliness and regularities that humans are able to penetrate. They perceive images, movement, color, form, etc.—for increased recognizability and meaning as learning proceeds.

(c) *The domain of rule-based games.* Such games as chess, bridge, poker, or Go are defined by rules that generate behavioral contingencies and conditionalities. The resulting regularities make learning and continuing improvement possible.

(d) *The domains of beauty found in nature.* The colorful plumages of many bird species, the patterns on butterfly wings, the colors and shapes of flowers or tropical fish, and the songs of birds, whales, frogs, wolves, or courtship dances, have biological effects on prospective mating partners. These effects are due, at least in part, to the same kinds of penetrable regularities, order, and patterns that account for aesthetic effects in human works of art.

4.3. Domain Properties that Can Host Aesthetic Reactions

All such domains can evoke the cognitive and affective reactions whose compounding interactions amalgamate into aesthetic reactions, as described in Part 2. By induction, the properties of the four domains described above

suggest that *any ordered or structured space whose regularities and properties can be penetrated is a potential domain for the development of aesthetic reactions*. The natural universe itself is such a domain. Its regularities and order include the laws of physics, and science is the learning activity by which humankind continues to seek to penetrate them.⁹

All of the domain properties described above are present in an infinite number of structured and ordered domains whose regularities can be penetrated and in which aesthetic reactions can develop—not only in the arts but also in cognitive areas. Within these there are domains within domains, specialty areas within specialty areas (e.g., genres within art fields, number theory within mathematics,) and further subdivisions within each of these in an infinite regress. Each of these can host its own aesthetic universe within which cognoscenti who have penetrated its regularities often form special, often trans-cultural, bonds (e.g., Malott 2018).

4.4. Discernment, Beauty, and Cognitive Competencies

Domain (d) above is of particular interest because it provides a clue regarding the biological function of beauty.¹⁰ The clue is the fact that the domain evokes the reaction not only in the species that produces it, but also in humans. These features and behaviors are therefore unlikely to have evolved as species-specific adaptations to their respective environments. In fact, the features are often burdensome to their owners, as Ryan (2018) pointed out. Beauty must therefore have another biological function.

It helps to reverse the question. Instead of asking how beauty relates to fitness or how it attracts mates, let's ask, instead, how the often-superhuman abilities to discern regularities, order, relations, patterns, motion, and detail might have evolved in many species—the discernment capabilities that enable them to decode and navigate their challenging environments, perceive and evade dangers, seize opportunities, make complex decisions in split seconds and perform amazing acrobatics. Anthropocentrism may be responsible for the widespread underestimation of the sophistication, elaborateness, and complexity of the cognitive competencies that many animal species possess.

⁹ I do not include “complexity” as one of the domains’ attributes because it is a relational concept that has no benchmarks: events are complex or simple only in relation to other events. I prefer the attribute “parsimony,” an inverse of complexity—one that has meaning in relation to “minimal complexity consistent with the functionality.”

¹⁰ The term beauty is used here for the stimulus properties that evokes aesthetic reactions.

4.5. The Assessment of Discernment

My thesis is that mating partners present each other with discernment challenges—domains (as defined in (d) above) that are sufficiently ordered and regular to serve as virtual discernment tests. It is usually the male that creates and presents a stimulus with domain properties, thus challenging the breeder candidate's ability to penetrate its regularities, patterns, and subtleties. The result amounts to an assessment of the female's discernment and the simultaneous assessment of the male's competency in creating the (beautiful) domain.

Among evolutionary biologists who have studied the functions of beauty in animals are Prum (2017) and Ryan (2018). Prum's thesis is that beauty evolved by virtue of its power to attract breeding mates (as Darwin (1871) also postulated), and Ryan's thesis focuses on the co-evolution of beauty and sexual attraction. Jabr (2019) wrote about the disagreements between these biologists and the shortcomings of their theses in a New York Times Magazine article. But when we shift the focus to the evolution of discernment, these disagreements and shortcomings disappear. Domain beauty is then seen to have a far more profound biological function than mere sexual attraction.

4.6. The Selection of Discernment

Discernment of regularities, order, and relationships is a set of cognitive competencies. How can selection of discernment occur in nature? It is easy to see how mating partners can assess physical characteristics, but how can they assess cognitive competencies—the sensitivities to subtle visual, auditory, and motion-related nuances, the behavioral capabilities that are needed to perceive camouflaged dangers or find hidden foods or shelters, or for identifying the juiciest and ripest caterpillars or berries?

The selection of cognitive competencies, which is at work in most sexually reproducing species, often begins with the assessment processes described in 4.5 above. The courted (usually the female) either penetrates the regularities and orderliness of the domain presented by the suitor, or she does not. In either case, she then makes her decision. If she rejects him, the reason may be that she lacked the required discernment or that his domain fell short. Either is a valid justification for non-copulation. If she accepts him, she passed the discernment test and he passed the performance test and again, either case provides a valid basis for proceeding.

The validity of such tests for the selection of discernment is a function of the degree to which the assessed discernment capability transfers to other, more survival-related, domains. The degree of transfer to other domains would range from total species-specificity to the high degree of generality seen in humans, where discernment in a given domain (e.g., humor, mathematics, music, language) is known to transfer to other domains.

4.7. The Maintenance of Modern Cognitive Competencies

Aesthetic reactions help maintain certain phylogenetically recent biologically valuable skills and competencies. These include the use of language; facility in the manipulation of concepts and abstractions; and such competencies as organization, inquiry, and communication (Mechner 2018a, 2018b, 2019).

The term “Modern Cognitive Competencies,” MCCs, reflects their phylogenetic recency. Unlike much older behaviors like eating or drinking, the reinforcers of most MCCs are too delayed to maintain them at useful levels. Since they appeared too recently to have had the phylogenetic time to evolve sufficient self-maintaining properties, their maintenance requires continuing boosts, which they receive from the reinforcers that their linked aesthetic reactions provide.

MCCs acquire conditioned stimulus functionalities when they coincide, as often happens, with affective stimuli, resulting in Pavlovian conditioning events. Such coincidences occur frequently, as both MCCs and affective events pervade normal lives. When conditioning events thus confer affect elicitation functionality on an MCC, *aesthetic reactions that may result reinforce the eliciting MCC*. Since reinforcement promotes repetition and repetition promotes refreshment and maintenance, aesthetic sensibilities may have acquired their role in the maintenance of MCCs by evolving with them in tandem.

The phylogenetic development of aesthetic reactions may thus have been a significant milestone in human evolution. Such phylogenetically modern competencies as language, concept manipulation, music, the arts, abstract thinking, planning, and inquiry might not have emerged without the functions performed by aesthetic reactions.

Bibliography

1. Barnes-Holmes Patrick Michael Dermot, Finn Martin, McEntegart Ciara, Barnes-Holmes Yvonne (2018), "Derived stimulus relations and their role in a behavior-analytic account of human language and cognition", *Perspect. Behav. Sci.*, 41, pp. 155–174.
2. Barrett Lisa Feldman (2017), *How Emotions Are Made*, New York, NY: Houghton Mifflin Harcourt.
3. Bennett Maxwell R., Hacker Peter M. S. (2003), *Philosophical Foundations of Neuroscience*, Hoboken, NJ: Wiley-Blackwell.
4. Berlyne Daniel E. (1960), *Conflict, Arousal and Curiosity*, New York: McGraw Hill.
5. Berlyne Daniel E. (1971), *Aesthetics and Psychobiology*, New York: Appleton-Century-Crofts.
6. Bridgman Percy Williams (1927), *The Logic of Modern Physics*, New York: Macmillan.
7. Carnap Rudolf (1928), *Der Logische Aufbau der Welt*, Leipzig: Felix Meiner Verlag.
8. Carnap Rudolf (1967), *The Logical Structure of the World: Pseudoproblems in Philosophy*, English translation by Rolf A. George, Berkeley, CA: University of California Press.
9. Darwin Charles (1871), *The Descent of Man: And Selection in Relation to Sex*, London: J. Murray.
10. Fuller Richard Buckminster (1975), *Synergetics: Explorations in The Geometry of Thinking, in Collaboration with E. J. Applewhite*, New York, NY: Macmillan.
11. Fields Lanny, Arntzen Erik (2018), "Meaningful stimuli and the enhancement of equivalence class formation", *Perspectives in Behavior Science*, 41 (1), 69–93, <https://doi.org/10.1007/s40614-017-0134-5>.
12. Haken Hermann (1978), *Synergetics: An Introduction—Nonequilibrium Phase Transitions and Self-Organization in Physics, Chemistry, and Biology*, Berlin, Germany: Springer.
13. Hayes Steven C., Barnes-Holmes Dermot, Roche Bryan (eds) (2001), *Relational Frame Theory: A Post-Skinnerian Account of Human Language and Cognition*, New York, NY: Plenum Press.
14. Hempel Carl Gustav (1952), *Fundamentals of Concept Formation in Empirical Science*, Chicago, IL: University of Chicago Press.
15. Hineline Philip N. (2005), "The aesthetics of behavioral arrangements", *The Behavior Analyst*, 28, 15–28.
16. Hineline Philip N. (2018), "Narrative: what it is and how it works", *Perspectives on Behavior Science*, <https://doi.org/10.1007/s40614-018-0137-x>.
17. Jabr Ferris (2019), "How beauty is making scientists rethink evolution", *The New York Times Magazine*, [online] <https://www.nytimes.com/2019/01/09/magazine/beauty-evolution-animal.html> [accessed: 3.03.2019].
18. Keller Fred S., Schoenfeld William N. (1950), *Principles of Psychology: A Systematic Text in the Science of Behavior*, East Norwalk, CT: Appleton-Century-Crofts.
19. Koestler Arthur (1964), *The Act of Creation*, London, UK: Hutchinson & Co.

20. Konečni Vladimir J. (2015), "Emotion in painting and art installations", *American Journal of Psychology*, 128, pp. 305–322.
21. Lane Richard D., Nadel Lynn (2000), *Series in Affective Science: Cognitive Neuroscience of Emotion*, New York, NY: Oxford University Press, Inc.
22. Levitin Daniel J. (2006), *This Is Your Brain on Music*, New York, NY: Penguin.
23. MacKay Donald G., Shafto Meredith, Taylor Jennifer K., Marian Diane E., Abrams Lise, Dyer Jennifer R. (2004), "Relations between emotion, memory, and attention: Evidence from taboo Stroop, lexical decision, and immediate memory tasks", *Memory & Cognition*, 32 (3), pp. 474–488.
24. Malott Maria E. (2018), "What influences audience response to figure painting?", *The Psychological Record*, 68 (3), pp. 331–341, <https://doi.org/10.1007/s40732-018-0313-0>.
25. Margulies Stuart (1977), "Principles of beauty", *Psychological Reports*, 41, pp. 3–11, doi:10.2466/pr0.1977.41.1.3.
26. Marr M. Jackson (2003), "The stitching and the unstitching: What can behavior analysis have to say about creativity?", *The Behavior Analyst*, 26 (1), pp. 15–27.
27. Marr M. Jackson (2013), "Tweedledum and Tweedledee: Symmetry in behavior analysis", *Conductual*, 1, pp. 16–25.
28. Martindale Colin, Moore Kathleen (1988), "Priming, prototypicality, and preference", *Journal of Experimental Psychology: Human Perception and Performance*, 14 (4), pp. 661–670.
29. Mechner Francis (2010), "Anatomy of deception: A behavioral contingency analysis", *Behavioral Processes*, 84, pp. 516–520.
30. Mechner Francis (2011), "Why behavior analysis needs a formal symbolic language for codifying behavioral contingencies", *European Journal of Behavior Analysis*, 12, pp. 93–104.
31. Mechner Francis (2018a), "A Behavioral and Biological Analysis of Aesthetics: Implications for Research and Applications", *The Psychological Record*, 68 (3), pp. 287–321, <https://doi.org/10.1007/s40732-017-0228-1>.
32. Mechner Francis (2018b), Mechner's reply to the commentaries on his article, "A behavioral and biological analysis of aesthetics". *The Psychological Record*, 68 (3), pp. 385–404, <https://doi.org/10.1007/s40732-018-0310-3>.
33. Mechner Francis (2019), "The biological utility of aesthetic sensibilities", *European J. of Behav. Analysis*, in press.
34. Pavlov Ivan Petrovich (1927), *Conditioned Reflexes*, Oxford, UK: Oxford University Press.
35. Petitjean Michel (2007), "A definition of symmetry", *Symmetry: Culture and Science*, 18 (2/3), pp. 99–119.
36. Phelps Elizabeth A. (2004), "Human emotion and memory: Interactions of the amygdala and hippocampal complex", *Current Opinion in Neurobiology*, 14, pp. 198–202.
37. Prum Richard O. (2017), *The Evolution of Beauty: How Darwin's Forgotten Theory of Mate Choice Shapes the Animal World—and Us*, New York: Doubleday.
38. Razran Gregory (1955), "Operant vs. classical conditioning", *American Journal of Psychology*, 68, pp. 489–490.

-
39. Rehfeldt Ruth Anne, Hayes Linda J. (1998), "The operant-respondent distinction revisited: Toward an understanding of stimulus equivalence", *The Psychological Record*, 48, pp. 187–210.
 40. Reisberg Daniel, Hertel Paula (2005), *Memory and Emotion*, New York: Oxford University Press.
 41. Rolls Edmund T. (2005), *Emotion Explained*, Oxford: Oxford University Press.
 42. Rosenblatt Louise M. (1978), *The Reader, The Text, The Poem: The Transactional Theory of the Literary Work*, Carbondale, IL: Southern Illinois University Press.
 43. Ryan Michael J. (2018), *A Taste for the Beautiful: The Evolution of Attraction*, Princeton, NJ: Princeton University Press.
 44. Salimpoor Valorie N., Benovoy Mitchel, Larcher Kevin, Dagher Alain, Zatorre Robert (2011), "Anatomically distinct dopamine release during anticipation and experience of peak emotion to music", *Nature Neuroscience*, 14, pp. 257–262, doi: 10.1038/nn.2726.
 45. Watson James D. (1968), *The Double Helix*, New York, NY: Atheneum.

Adrian Mróz*

Towards Behavioral Aesthetics

Abstract

This article presents a new approach to studying aesthetics by weaving together a thread of ideas based on investigating the problematics of the philosophy of art from a behavioral paradigm in order to exceed the margins of aesthetics. I claim that it makes no sense to ask if something is art, but rather we should be looking out into the manners in which art subsists, consists, and insists itself. Several notions of what I call behavioral aesthetics are proposed such as observation, aesthetic experience and aesthetic conditioning, behavioral materialism, out-comes, behavioral memory and replication or acquisition, interaction and intra-action, emotional engineering, artificial instincts, aesthetic dissonance, and the problem of measurement. The proposed goal of behavioral aesthetics consists in studying the process of individuation as constitutive of art with the methods of Bernard Stiegler's general organology and genealogy of the sensible. The article presents a behavioral stance as a borderline mode for approaching the genealogy of aesthetics. I mostly refer to Tania Bruguera's Behavior Art School and Wright Judson's Behavioral Art, and the paradigm of new materialism, notably agential realism of Karan Barad.

Keywords

Transductive Relationships, Individuation, General Organology, Art and Behavior, New Materialism

* Jagiellonian University in Kraków
Institute of Philosophy
Email: adrian@doctoral.uj.edu.pl

Introduction

The first draft of this article was presented at a conference organized by the International Association for Aesthetics entitled *Margins, Futures and Tasks of Aesthetics* held in Helsinki on July 5–7, 2018. The aim was to present a margin of aesthetics in order to show a new way of approaching it. To be at a margin is to be at a limit, and my goal was to go beyond it. I proposed a future of behavioral aesthetics since various paths and philosophies have been edging the field of aesthetics towards a more collaborative and vital interdisciplinary study, such as in embodied aesthetics, applied aesthetics, or neuroaesthetics, whereas scattered interest in the relationship between behavior and aesthetics can move the field into a new understanding of art as behavior. This was motivated by the circumstance that I have attempted to frame what I called behavioral aesthetics in 2015 for my B.A. thesis entitled *The Axiology of Music: Systemic Irrationality in Judging the Performance of Music*, and later in 2017 I examined the question of the relationship between pharmakon and music for my M.A. dissertation titled *The Significance of Music with Reference to Plato and the Notion of "Pharmakon"*, during which I became acquainted with the philosophy of Bernard Stiegler, whose writing has had a significant impact on my interpretation and approach to behaviorism and aesthetics. Additional motivation arose from the condition of residing in an era of digital humanities, where the effects of Big Data and A.I. imply that information technology focuses, collects, manages and models the behaviors, habits, and actions of users, as witnessed during the 2018 US joint senate committee hearing of Mark Zuckerberg.

At first, instead of asking "what is art" I asked a series of other questions pertaining to what art, media, and culture do? How is technology a mirror of culture? Do symbols and representations also regulate our judgements, behaviors and habits? How do behaviors shape art and its theory? Can we learn new forms of beauty? Can we engineer an emotion? Of course, these problems are not new: the Greek ethos addressed them, as does advertising. Ancient suspicions and modern marketing intensified by new media show that there is indeed what appears to be an effect on human behavior, which now has been digitally measured and steered as never before. The point of this article is to explore some fundamental notions of behavioral aesthetics such as a deconstruction of the problem between subjective experience and observable behavior (so an external/internal dichotomy), which in turn requires a new thinking of relationships like interaction, and thus it is aimed at cultivating a different interpretation of aesthetics and behaviorism.

Methodological behaviorism, as proposed by John B. Watson, applied a dualistic assumption that divides the behaviors of an individual into public (or overt) and private (or covert) events. It is focused on public events and studies them in a naturalistic and empirical manner. Then, in order to account for private thoughts and feelings, Burrhus Fredric Skinner's radical behaviorism acknowledged private events as internal processes of an organism that should also be studied. Other schools of behaviorism such as the teleological (Howard Rachlin, post-Skinnerian, purpose-driven,) the psychological (Arthur W. Staats, emphasizing human learning, personality,) or Jacob R. Kantor's interbehaviorism are variations on this theme of interactions between organisms and their milieu. This includes the advent of Behaviorology in the early twenty-first century. According to the International Behaviorology Institute, "Behaviorologists study the functional relations between behavior and its independent variables in the behavior-determining environment" (2017, para. 7) as an autonomous natural science incompatible with psychology and opposing all untestable and unmeasurable explanations for behavior.

However, the act of measurement itself may produce several problems. Aleksandr A. Fedorov argues that Behaviorology is compatible with Marxist dialectical materialism in the form of behavioral materialism, while stressing the non-mechanistic interdependence and constant flow of matter. I would like to point out Fedrov's account of the model of interaction. He states:

Interaction is a dialectical category that rejects the stereotyped notion that cause and consequence are two invariably adversarial poles. Either of interacting sides is the cause of another one and consequence of simultaneous influence of the opposite side. Therefore, we can suppose that selection by consequences is a dialectical model of behavior determination. A consequence of a certain behavior (change in the environment) is simultaneously the cause of that this behavior will happen more often or rarely. Nevertheless, we have to remember that causality and interaction are not interchangeable (Fedrov 2010, 178).

In other words, what triggers a behavior and the out-comes (as in coming-out or revelation) of a behavior are not separate, and interaction (a functional interdependence) is not synonymous with causality, i.e. cause-and-effect like reflex machines. For instance, two improvising musicians are in an interactive situation, not a mechanistic one (even if one player is Shimon the robotic marimba player guided by artificial intelligence and using "interestingness" algorithms a.k.a. association rule learning.) Outcomes nudge triggers, and triggers sway outcomes. Operant conditioning is a form of selection

within the milieu of an organism, and thus a form of behavioral memory itself, which I understand, following Bernard Stiegler, as an exosomatic function. It is dependent upon interacting relationships such as between an organism, the introduction of rewards and punishment, and environmental stimuli. In turn, environmental stimuli shape the organism's perception, both epigenetically (which in-forms neuroplasticity) and through heredity or phylogenetically (which trans-forms DNA). For example, one consequence of creating good (or participating in the admiration of—which is a form of surprise) art is praise (or companionship, which are both forms of environmental exchange,) which is also a reason that increases the probability that such behavior will repeat itself over again. Being praised for practicing scales and arpeggios is a reward that can at once be a cause and consequence of artistic behavior, notwithstanding the biological mechanism or drive that music uses to release mood-enhancing effects. The latter can be overridden by stress or music performance anxiety (anticipating measurement and observation) conditioned by worries about perfection, competition and an aroused somatic state cognitively interpreted as stage fright, which means that music is indeed a *pharmakon*—a poison and a remedy.

Fedrov's account is quite similar to Karan Barad's concept (where a concept itself is understood as a specific material arrangement) of intra-action (Barad 2007, 33), where matter is performative in and for itself. Fedrov's argument that cause and consequence are interdependent and simultaneously changing corresponds with Barad's account that agency is entangled and mutually co-constituted. Intra-action, a part of the methodology of agential realism, asserts agency as emergent from a relationship of mutual entanglements. This means that the distinction between private and public events as independent actions is inadequate and comes from a false dichotomy. Such an approach allows for a new materialistic behaviorism, since the act of measurement is an additional problem. The act of measuring behavior is itself a behavior and at once an influence that transforms and deforms observed behavior. This can be evidenced by the observer effect a.k.a. The Hawthorne effect (Schwartz *et al.* 2013). The Behaviorologist's rigorous naturalistic approach cannot account for what Barad's new materialism shows: measurement disturbs objects, it changes its ontology and behavior. What this means is that it is ontologically indeterminate of what an object is. Additionally, Yuk Hui has pointed out that Barad's critique of agency as complete individuals preceding relationships and representations is analogous to Gilbert Simondon's problematic of individuation (as the becoming of matter) and Gaston Bachelard's concept of relativity, notably pheno-

menotechnics (Hui 2014). In short, individuals are an effect, not a cause. They are emergent from a process of individuation. The same can be said of art.

The philosophy of art has traditionally been centered around the idea that the artworld is made up of individuals possessing intrinsic characteristics and whose activities are a representation of these characteristics. The goal of behavioral aesthetics would then consist in the reinterpretation of art not as a creation of individual works, but as a matter or effect of individuation. For this purpose, I think, the framework of Bernard's Stiegler's genealogy of aesthetics and method of general organology can be applied. Accordingly, aesthetics would be concerned with entangled relationships on various scales of magnitude: physiology, technics, and society. The point of this article is to re-think dichotomic behaviorisms (private/public events, organism/environment, measurable/unmeasurable) within the terms of a transductive relationship, which is to say that the terms of a relationship are mutually constitutive and characterized by inventiveness.

The first section presents a peripheral mode of thinking about aesthetics in accordance with a behavioral stance. Next, I review different thinkers, who have tried to think of aesthetics in terms of behavior. Then, I develop Behavioral Art and Digital Technology, and finally I elaborate the transductive relationship between behavior and digital objects.

Thinking about a Behavioral Stance

We, humans, function in a world that is constantly shaping who we are, as well as, how we perceive reality, both in its material manifestation and its abstract conceptualization or imagined order, which is fundamentally symbolic. Of course, the reverse also holds some truth, in fact, humanity has shaped and reshaped not only its environment, so each habitat is reshaped in accordance with the needs of humans and their organizations, but in such a way that the entire planet has felt the impact of human habituation, which has resulted in the significant proposal of contemporary geological time in 2016 called the Anthropocene as apocalyptic for *homo sapiens*, where human agencies are upgraded as a species and simultaneously downgraded into contextual interactions.¹ This can be described as a relationship, which

¹ For more on how "agency in the age of the Anthropocene is complex and kaleidoscopic, distributed and global." See: Sullivan 2016.

is not only evolutionary, but one that constitutes the conditions, the entities, and the ways in which perception itself takes place. In other words, it is a general contextualization of human activity within the framework of wide-ranging natural and cultural forces (Sullivan 2016, 292). With this in mind, it is necessary to think not only about how perception is continuously wrought in a process that gives rise to sensory experience and its conditions, but also about its workings, or to view it by what it makes us do, which I shall call a behavioral stance.

An example of this kind of thinking follows. The very existence of the sun has facilitated conditions, which have allowed for the very first living thing to differentiate cells that specialize in function, in this case that of being capable of sensing light, which has led to the rise of the plant and animal kingdom, the evolution of eyes, the aesthetics of sexual selection or the behavior constitutive of the arms race between predators and prey. Each organism's specialized functions not only allow it to feel the world, its *milieu*, in its own singular way, but their incompleteness or lack of immobile essence also allows for the possible differentiation of new organs, which facilitate different sensory experience and thus movements or behaviors. Eventually, these organs gave rise to the forces of technics, such as tool use by animals like birds, primates, fish, and insects. Figuratively, the working of sunlight's energy moves illuminated matter on Earth into the cycle of life and death.

Analogically this framework allows for a *vocational* generalization: that we—philosophers, aestheticians and artists—function in an hyper-industrialized social reality, where the means of symbolic production are being exponentially subject to automatization via new media and disconnected from a general intimate contribution to symbolic orders. Meanwhile, the artworld is constantly re-shaping the identity of art and its conditions of reception, both in terms of matter and theory, especially since the layperson is confused and alienated by artistic practice as evidenced by low-brow criticism of modern art in popular culture as ugly, bad, or meaningless (and they are right in the sense that it has become an art symbolically *disconnected* from their individuation). It should be noted that the artworld is more shy of its relationship with the entertainment industry than it is with the investment industry, and thus misunderstood, mysterious, and ephemeral art has been exploited by speculative financialization.² Complementarily through marketing, a dominant imagined social narrative has shaped the arena of art in ac-

² A critique of the artworld, which should be read alongside Stiegler's *Symbolic Misery* and notion of Aesthetic War, can be found in Le Brun (2018).

cordance with artificial desires, which are artificial absences, to such an extent that the artworld has adapted to the impact of social habituation, which resulted in curious connections between financial interests and the commodification of art itself. It is responsible for shaping all actors or agents within the emergent conditions of the symbolic relationship, and at the same time, allows us to be capable of perceiving some objects, while simultaneously masking others. An example of this is the auction stunt by Banksy, which has failed to counter the behavior of instrumentalization.

Through the framework of general organology it can be said that the very presence of artistic media, such as the canvas, the human voice, or the infrastructure built to house artworks, also has undergone a process of differentiation, which conditioned the rise of the various chronological classifications of different fields of art, such as music, poetry, painting, dancing, and so on. This was made possible by the ability to differentiate (or individuate) between various aspects of sensory experience, such as by classifying art in accordance with each organ like sight and seeing, the difference between hearing and listening, the movements and experiences of the living body, which do not exclude touch and touching, smell and smelling, taste and tasting, and so forth. Yet this capacity to classify and categorize is forever incomplete, since we can also observe synesthetic phenomena that arise thanks to the plasticity of the brain, such as seeing sound, hearing through touch or sight, or tasting through smell, or the use of technology in order to modify the senses, etc. Moreover, human behavior in regard to the dynamic cultural perception of Beauty is also conditioned by political struggle between moving others and moving oneself. This may be understood by examining the use of cosmetics, perfumes, fashion, or the way a person “carries” themselves, and also includes acts of creativity, which usually are acts of repetition, recycling or re-creation, but also the use of language, rhetoric, song, or the transmission of ideas between minds, which demand recognition. Now, each specialized theory of art and the specialization of particular artists, which is not understood simply as professionalization, allow themselves to feel the world through and with others, the artistic milieu.

The above sketch of a behavioral stance draws a problematic overview to questions about what art does, about its workings, or behavior that it has wrought. It is a question that demands an interdisciplinary and general overview, including but not limited to, an analytical or narrow professionalization that may remain blind to other connected domains of this particular field of behavior that art is rooted in. Behavior itself is a question that can be viewed physically in terms of inorganic organized matter, which “behaves”

without regard to consciousness and its artifacts. But simultaneously, behavior also involves the biological processes underlying organic organized matter, which ultimately form the conditions of consciousness and its artifacts, such as reflective and unreflective behaviors. This is fundamentally a problem of aesthetics, understood as sense perception, sensibility, or sentience. Taking this into consideration, the methods of aestheticians should not shy away from empirical studies, or even a critique of them, and need to “push” the boundaries of aesthetic philosophy into new desired symbolic orders. And this is so, even if this going-beyond requires a dose of absurdity, or platonic divine madness, which is sterile without an imagination or the thinking of behavior in terms of its contingency and interpretability.

The behavioral dimension of aesthetics is one that incorporates the entire corpus of human artifacts with meaningful engagement between a symbolic object and the practices it evokes, such as scandal, commitment, or playing make-believe. This dimension is of course not only spatial or temporal, but also relational. Behavior is an organization-of and habituation-to action. In turn, aesthetics supports a co-navigation of the rowboat of art to a new marina of doing. This then challenges the knowledge we have taken with us from the place of departure. What is shared by art and aesthetics is the fact that it is fundamentally action-based,³ that humans behave as if an entity called art does in fact exist, at least in imagination, just as humans act as if limited liability companies existed as organic beings. From the old strictly materialistic perspective foreign to intra-action, such existence claims are unanswerable metaphysical questions, since no direct traces of limited liability companies lead to giant physical entities themselves. Yet, the traces all constitute what is part of human culture, which is a system of *sensing* organized action.

Can behavior consist of exact homogenous objects not open to interpretation, but rather replicable and measurable, which we can call “objective” with scare quotes? Such unstably fixed “objective” forms of ontological speculation of course do in fact come into imaginary being depending upon the social relationships between many individuals and individuals with themselves. An example is that of interpreting sexual behavior, which is never universally “objective,” since affect necessarily overrides rationality and

³ This draws from the notion of imagined orders developed throughout Harari (2015) and Donald Brook’s observation that “Art is an illumination that enables actions to be performed that performers of these actions had not previously known to be possible. It is found everywhere, and it can’t be purposefully made” (Brook 2015, para. 27).

“distanced” judgement or measurement. And once a change in any relationship occurs, which is marked by a change in action or behavior, the very existence of shared “objectivity” is jeopardized. To put it another way, Plato’s worries about the influence of music on behavior is no longer viewed to be “objective” information. Or, there is nothing in a bell’s ring itself, its nature so to speak, that causes a dog to drool, and similarly, the Dorian mode alone does not hide any discoverable “objective” explanation for why Plato drew the conclusion that it is appropriate for supplementing masculinity with the bravado of that mode. This all illustrates the question of behavioral interpretability, readability, accidence, and contingency.

Summarizing, a behavioral stance needs to be adopted in order to gain new knowledge on the processes joining being with having, of self-control or performing the action of being. So, it is important to think of aesthetics in terms of behavior. In turn, such an adaptation should provide aestheticians with the can-do to generate know-how in regard to not only art, but knowledge on how to work and live, which is thinking itself, from which art and aesthetics diversify. Knowledge itself is most certainly not a product of thinking per se, which is to say that thinking results from a process supplemented by training and discipline, or education, inasmuch as the nervous system is complemented by a host of abstract technical objects, such as ideas, and instruments, such as notation or money. Accordingly, thinking is part of a system of behavior that involves brains engaged in a way of sharing intersubjective communicable and replicable information with mnemonic devices of recall and prediction, or memes. In this sense, behavior is a system of thinking rooted in the previously mentioned *aisthesis* (ancient greek: αἴσθησις,) since human action and behavior is regulated by brains, muscle memory, social norms, and technological supports, such as books and the learned capability of reading and writing. Every instance of copying behavior, or a technical support since all technics is mimetic, is imperfect, and some variation occurs, which creates a modified or imperfect copy, and subsequent replication under selection pressure inevitably repeats itself, which leads to the emergence of spontaneous design, meanwhile unsuccessful replicators die out.

A Behavioral Out-look

The Cuban Cátedra Arte de Conducta (Behavior Art School) founded by Tania Bruguera and implemented in 2002 was one of the first schools of art to primarily focus on behavior as a methodological out-look, which I under-

stand as perceiving beyond boundaries, where the medium was that of Behavior Art and Useful Art, but it closed in 2009 in fear of sharing the fate of many other art and antiart movements, which is institutionalization. In 2003, during the Arteamérica Debates she asked: "If behavior is an element of knowledge which becomes a ruling institution which at times is pigeonholed as knowledge, then why not turn it [behavior] into a methodological resource? Why not work with it [behavior] and turn it [behavior] into a method to work on knowledge?" (Bruguera 2003, para 28). I think this proposal can be applied not only artistically, but also philosophically and in the discipline of aesthetics.

Most philosophers would probably say that their field of business deals with thinking. In the section above I have myself tried to present a literary illustration of the act of thinking about a behavioral stance. If behavior is to be a method to work on knowledge, then it should be noted that thinking itself is not exempt from action and entanglement. Derek Melser in *The Act of Thinking* (2004) has argued that the process of thinking itself is an action or put simply, something that people do. So, thinking may be adaptable to behavior-like terms. However, it cannot be reduced to neurological measurement. One of the significant aspects of art is its capability to arouse emotion, understood as a social construct. In this regard, it is worth mentioning the research of Lisa Feldman Barrett, whose Theory of Constructed Emotions (Barrett, 2017, 30) shows that identical emotion categories, such as fear, love, etc., involve different, varied bodily responses. Difference is the norm since experience and behaviors are constructed *ad hoc* at the moment by biological processes in the brain and body. In my opinion, emotional engineering (the *de facto* workings of the aesthetic industry—from the fine arts to advertisement and entertainment) is then a reality, since both artists and businesses strive to make emotional connections with others through various aesthetic and technological means. Thus, the development of language and art is also a development of human experience (as behavioral discovery) and hold the possibility of creating a diversity of emotions. The fact that one human adaptive survival trait consists in living within social groups means that everyday competing concepts like disgust or appreciation are cultural instruments that prescribe situation-specific actions that allow for communication as well as for influencing the behavior of others. What is called culture could also be re-named as a set of artificial instincts (Harari 2015, 206). A change in the concepts of an individual permits a change in behavior. Harari has extensively written about social reality as a force that has been driven by imagined hierarchies, which allow for the mass cooperation of

strangers. Barrett then adds a deeper biological significance: “Social reality implies that we are all partly responsible for one another’s behavior, not in a fluffy, lets-all-blame-society sort of way, but a very real brain-wiring way” (Barrett 2017, 155). Thus, the concepts and social realities artists and aestheticians disseminate are of greater weight than we may suppose. This provides an understanding that an ontology of art is in fact a relationship of *différance*. It makes no sense to ask if something is art, but rather we should be looking out into the manners in which art subsists, consists, and insists itself.

Some scholarship does resemble a behavioral stance, such as the approach taken by Jennifer Hall in her dissertation *Interactive Art and the Action of Behavioral Aesthetics in Embodied Philosophy*. Instead of a strict naturalistic or empirical approach, a multidisciplinary philosophical one is given. She describes what emerges from the process of interactive aesthetic engagement. Her take on behavioral aesthetics is through identifying organic systems associated with aesthetic behaviors and experience. She writes:

Behavioral aesthetics can be defined as biological and post-biological elements that make up a bodily gesture. Because parts of the aesthetic behavior may be sourced from biological forms and other parts may not, interactive art has little need to define actions of the organism through the distinctions of living or nonliving. Instead, actions that are created within the interacting system may also be regarded as a gesture of the organism. Behavioral aesthetics dislocates traditional notions of subjectivity as the center or purpose of art (Hall 2014, 24).

So, action is the point of emphasis, which can be also developed as an intra-action, since actions have the capability of changing an organism’s relationship to its environment and vice versa, it “provides outputs from the organism to the environment” (Hall 2014, 74). Putting it another way: “Behaviors are the conditions in which any action may be critiqued for the ability of an object to work within, relate to, and expand from the site in which it is located” (Hall 2014, 75).

Behavioral Art and Digital Technology

Bernard Stiegler’s distinction in *Symbolic Misery* between *artistic experience* (or experiment,) which leads to a discovery of a new way of feeling or aesthetics, and *aesthetic conditioning*, which is of the kind of stimulus-response that are impulsive controls of desire like that of marketing, should also be taken into consideration. The ways of feeling and experiencing the world can be exploited and navigated in a manner that depletes aesthetic inquiries.

In 2017 Wright Judson (judsoN [sic!]) published “Behavioral Art: Introducing Ontogeny into Computation,” where the challenges of art are applied to human cognition with the use of new media. For Judson, “Behavioral Art (BA) is the practice of employing artistic experimentations during the investigation of human behaviors and motivations” (Judson 2014, 1). He temporarily abandons aesthetics, since he is more interested in developing Behavioral Art as a programming tool for answering the question of what is not interpreted as art, and why. This is an example of using behavior as a method from which knowledge can be wrought. When thinking about A.I., we should keep in mind that machine learning occurs without any “thinking,” being merely an information system guided by digital behaviors.

Ethical concerns, however, must be included. Digital Technology is an invention of humanity, but replicators such as Susan Blackmore’s tremes (techno-memes) have slipped out of human jurisdiction. In an era of digital humanities, the effects of Big Data and A.I. mean that information technology constitutes, focuses, collects, manages and models the behaviors, habits, agency, and actions of us, the human users of such technology. The aim is to create a closed model that is riskily static, since it is a model that reinforces human biases and prejudices as Cathy O’Neil has shown throughout *Weapons of Math Destruction* (2016). In this regard, I propose a future of behavioral aesthetics, which would be assigned with the task of teaching a new way of seeing: that behavior can be unmanageable, unmeasurable and incalculable, it resists quantification and modifies an individual’s agency. It can be used to both understand such conditionings as well as a means to re-condition ourselves in the struggle against behavioral nudges and the commodified art market itself, be it fine art or mass media.

With this, I am referring to Tania Bruguera, who stated:

Artists are elements in society who are aware of the symbolic connotations of acts and gestures, they are students of meanings. Human beings talk through their behavior and this is the means they have to express and they are an element of society aware of the symbolic meanings and transcendence of their acts. To be artistic is to be aware of this process, of behavior being their means of expression and of using it in an insurmountable way. And what receives the name of artistic sensitivity is being open to and mindful of new combinations of meanings. Power works with metaphors, while it is in behavior where society does its most fervent work of modeling meanings, it is also the battlefield of the means through which it expresses and the results of those battles are offered (Bruguera 2003, para 16).

Technology has always deeply reconfigured and revolutionized societies and the works they produce. This is especially true of the industrial revolution and the creation of mass culture and its art forms. New media has transformed society yet again and it is changing the way we deal with creation. Human “users” are no longer simply passive consumers, but what some call prosumers, producers of content, which is a contributive form of participating in what is consumed. Such seemingly “contributive economies” that are in fact exploitative-by-design include YouTube, InstaGram, BandCamp. Others, such as Bernard Stiegler and Ars Industrialis or *l’Institut de Recherche et d’Innovation* in Paris are taking steps in order to counteract the aesthetic conditioning of consumers by market drives, which is a behavioral problematic, especially in terms of addictive behavior. We can gain better insight into creating a future for aesthetics with digital tools now available, as is exemplified by the behaviors of the users of the Internet or as in the Behavioral Art of judsoN. This is information collected anyways by Facebook, Amazon, Apple, Netflix, and Alphabet a.k.a. Google via machine learning algorithms for advertisement and marketing.

In this regard we may also ask, how is technology a mirror of culture (Gladstone 2017, 28). The creators of art and media are also those who have to deal with the corporality and sensibilities of other people. However, it must be disseminated in such a way that it resonates with those who are immersed in a certain environment. If it does not meet this condition, then those artifacts never enter the cultural realm and remain in the necromass of unsuccessful replicators. What Victor Tausk called “the influencing machine” (Gladstone 2011, xv-xxi) is the condition of what art does: instead of prosumers, we deal with the phenomena of Instagram *influencers*. It can make us *see*, produce thoughts and feelings, movements, sensations and bodily processes. In Steigler’s terms, we may say that the work of an artist is to produce organs with which we perceive, such as the eye.

Behavior Transforming Technical Objects, which in Turn Transform Behavior

Behavior may be understood in terms of or as the movement of organic organized matter by technological objects, or inorganic organized matter, such as the sound of a ring and a response of answering a phone. Some behaviors are genetic, such as instincts and predispositions, while others are learned, passed down from one generation to the next. The environment hosts replicable behaviors, which can be copied and transmitted, like customs. Just as

any other animal, humans have instinctual reflexes written in their DNA, which is expressed and modified in various unique environments. We also have behavior that is learned, which means that through observation, technological and cultural conditioning, behavioral acquisition takes place. For instance, the view: males act “like men” and behave aggressively whereas females as “women” and act submissively, sets up a patriarchal imagined order, and consequently reinforces behaviors accordant with that view. Other behavior is transmitted through technical objects, such as a musical instrument. Playing the guitar requires the necessity of adopting a diet beneficial for strong fingernails, getting into the habit of taking care of them and the instrument, as well as getting into the habit of regularly setting the aim of surpassing the limits of one’s own abilities, aided with written texts on performance methods, a practice regimen, or training programs and a metronome.

In terms of the philosophy of art, a piece of music is not *in the notes*, neither the sounds nor the sheet music, even though each duplicate is more-or-less exact. Each piece is constituted through the habits of the interpreter or performer, its media, and the habits of reception. What is aesthetically then experienced is a specialization of the body, such as ears and hands, with the simultaneous expansion of structured joy, which results from being able to reach performance aims, or an immense frustration from not being able to behaviorally adopt a regimen that permits one to not only play a piece, but to exceed one’s skills and capabilities. This renders any performed piece of music as technical, since the positive and negative powers of the formative media can be the basis for creating aesthetic dissonance, where a frustrated lover of music is stuck in a malignant behavioral loop: it is to be able to perform a piece “objectively” as “beautifully,” but at the price of learning a personal revulsion to it, since the negative frustrated state of being not-able-to *imprints* itself onto the music *through* the retentions and protentions, memories of past frustrations and obstacles, which are “retained” in the music and in the body, which anticipates mistakes. The aesthetic experience is thus accidental, a performer does not have the foresight to see that their favorite piece of music, before being learned, will soon be transformed into one that is disliked by the means of practice. The same goes for *exact* repetitions, let’s say a ringtone. A favorite tune, which becomes associated as a stimulus of a phone call, soon transforms its musical qualities from ones of excitement to those of dread and annoyance. It is in fact a misery that is symbolic, behaviorally conditioned, or unreflexively done.

Each repetition of behavior is on the one hand a limited calculation, but on the other, it's experienced as a crisis of identity if the repeated behavior itself is a basis of recontextualizing the self. This can happen from learning to play a song, but it also needs to be noted that it is not the same as unreflexively performed behaviors, such as mindlessly smoking through sheer habituation or checking a smartphone every time it beeps. The same behavior has varied contexts, and the social and technological environments open up space for acting differently, even if the drives have been previously exploited. What is learned can also be unlearned. The meaning of behavior is not fixed, although its significance can become temporarily and socially fixed, so it is a temporal and technical object. A stimulus may produce reproducible behaviors in exact laboratory-like conditions, but the meaning of a particular behavior is ultimately situational and hierarchical. This is to some extent incorporated into the narrative of a subject's identity, who usually desires to have their actions accord with previous personal behavior.

Conclusion

Through intra-action or transductive relationships, conditions of behavior manifest themselves, as a cause and consequence or as its out-come, within which the agency to act is constituted, thus a significant component of the process that leads to the resulting individual's aesthetic sensibility, which transcends drives. It can be said that new paths and philosophers are moving the field of aesthetics towards a more collaborative and important interdisciplinary study. Behavior in my understanding is a broad composition of being and having. One path of exceeding the margins of aesthetics, understood as a categorization of art objects, is moving towards behavioral aesthetics, which doubles as a technique to work on desire and *savoir-faire*. All behavior is performative, since it is subject to observation and measurement by others and the self as other. Behavior, as an intertwining of environment and organism, is significant because with it the entire world transforms. Through behavior, more precisely thanks to its learning function, perceptions change, which includes a new way of seeing and not only appreciating a shared beauty, but bringing it to life. It is something that resists entropic closed systems, and something that can challenge thoughtlessness, which is what most art activism has been striving to embody in some regard. Modern tools amplify not only the aesthetic possibilities of contributing to a greater corpus of democratized art, but also allow for a common reflection towards

new forms of entrancing discovery, which is a revelation of ways of doing not perceived as possible before. Hence, I've been striving to expand the philosophy of art's limits towards behavioral aesthetics.

Bibliography

1. "Teaching for Artistic Behavior", [online] <http://teachingforartisticbehavior.org/> [accessed: 30.09.2018].
2. Barad Karen (2007), *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*, Durham: Duke University Press.
3. Barrett Lisa Feldman (2017), *How Emotion are Made*, New York: Houghton Mifflin Harcourt.
4. Blackmore Susan (2008), "Genes, Memes and Temes", [online] https://www.ted.com/talks/susan_blackmore_on_memes_and_temes [accessed: 30.09.2018].
5. Blackmore Susan (2010). "The Third Replicator", *The New York Times*, [online] <https://opinionator.blogs.nytimes.com/2010/08/22/the-third-replicator/> [accessed: 30.09.2018].
6. Brook Donald (2015), "Art is Not a Verb", *Fine Print*, [online] <http://www.fineprintmagazine.com/art-is-not-a-verb> [accessed: 18.02.2019].
7. Bruguera Tania (2003), "Behavior Art", [online] <http://www.taniabruguera.com/cms/474-0-Debates+about+Behavior+Art.htm> [accessed: 30.09.2018].
8. Bruguera Tania (n.d.), "Cátedra Arte de Conducta", [online] <http://www.tania-bruguera.com/cms/492-0-Ctedra+Arte+de+Conducta+Behavior+Art+School.htm> [accessed: 30.09.2018].
9. Dawkins Richard (2006), *The Selfish Gene*, Oxford: Oxford University Press.
10. Dissanayake Ellen (1980), "Art as a Human Behavior: Toward an Ethological View of Art", *Journal of Aesthetics and Art Criticism*, 38 (4), pp. 397–406.
11. Fedorov Aleksandr A. (2010), "Behaviorology and Dialectical Materialism: On the Way to Dialogue", [in:] *Psychology in Russia: State of Art*, [online] http://psychologyinrussia.com/volumes/pdf/2010/07_2010_fedorov.pdf [accessed: 16.02.2019].
12. Graham George (2017), "Behaviorism", *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta, [online] <https://plato.stanford.edu/archives/spr2017/entries/behaviorism/> [accessed: 31.09.2018].
13. Gladstone Brooke (2017), *The Trouble with Reality. A Ruminaton on Moral Panic in Our Time*, New York: Workman Publishing.
14. Gladstone Brooke (2011), *The Influencing Machine*, New York: W. W. Norton & Co.
15. Hall Jennifer (2014), "Interactive Art and the Action of Behavioral Aesthetics in Embodied Philosophy", *Academic Research and Dissertations*, [online] <https://digitalmaine.com/academic/4> [accessed: 30.09.2018].
16. Harari Yuval Noah (2015), *Sapiens: A Brief History of Humankind*, New York: Harper.
17. Hui Yuk (2014), "Matter and Reality: Barad, Bachelard and Simondon", [online] <http://digitalmilieu.net/?p=591> [accessed: 16.02.2019].

18. judsoN (2015), "Behavioral Art: Is This Art?", *Interartive*, [online] <https://interartive.org/2015/10/behavioral-art> [accessed: 30.09.2018].
19. judsoN (n.d.), "art by judsoN", [online] <http://pump.org.in/> [accessed: 30.09.2018].
20. Judson Wright (2014), "Mental Diagrams and Maps: Art's Role in the Development of Cognition", *Parsons Journal for Information Mapping*, 6 (1), [online] http://piim.newschool.edu/journal/issues/2014/01/pdfs/ParsonsJournalForInformation-Mapping_Judson_Wright.pdf [accessed: 30.09.2018].
21. Lazo Direlia (2014), "It Happened in Havana", [online] <https://www.guggenheim.org/blogs/map/it-happened-in-havana> [accessed: 30.09.2018].
22. Le Brun Annie (2018). *Ce qui n'a pas de prix. Beauté, laideur et politique*, Paris: Stock.
23. Melser Derek (2004), *The Act of Thinking*, Cambridge: The MIT Press.
24. Morin Edgar (1977), *Zagubiony paradygmat – natura ludzka*, tłum. Roman Zimand, Warszawa: Państwowy Instytut Wydawniczy.
25. O'Neil Cathy (2016), *Weapons of Math Destruction*, New York: Crown Books.
26. Pettman Dominic (2017), "Love in the Time of Tamagotchi", *Theory, Culture & Society*, 26 (2–3), pp. 189–208.
27. Schwartz Daniel, Fischhoff Baruch, Krishnamurti Tamar, Sowell Fallaw (2013), "The Hawthorne effect and energy awareness", *Proceedings of the National Academy of Sciences*, 110 (38), pp.15242–15246, doi:10.1073/pnas.1301687110.
28. Seminar Group, Aesthetics, Desmond Colm, Doyle Jeanette, O'Carroll Cathy, Matthews Elizabeth, O'Dwyer Néill, O'Hara Mick, Vaughan Connell (2015), "In Response to Bernard Stiegler: A Pharmacological Avant-Garde", *The History of the Present*, 3 (1), Article 6, doi:10.21427/D7G992, [online] <https://arrow.dit.ie/inp/vol3/iss1/6> [accessed: 30.09.2018].
29. Sullivan Heather I. (2016). "Agency in the Anthropocene: Goethe, radical reality, and the new materialisms", [in:] McCarthy John A., Hilger Stephanie M., Sullivan Heather I., Saul Nicholas (eds), *The history of embodied cognition 1740–1920: The Lebenskraft-debate and radical reality in German science, music, and literature*, Leiden: Brill, pp. 285–304. doi: 10.1163/9789004309036_013.
30. Stiegler Bernard (2014), *Symbolic Misery Vol. 1 The Hyper-industrial Epoch*, trans. Barnaby Norman, Cambridge: Polity Press.
31. The International Behaviorology Institute (2017), "About Us", [online] <https://www.behaviorology.org/home/about-us/> [accessed: 16.02.2019].
32. Wyatt Sally, Millen David (eds) (2014), *Meaning and Perspectives in the Digital Humanities*, Amsterdam: Royal Netherlands Academy of Arts and Sciences et al., [online] http://www.mamartino.com/img/Meaning_and_Perspectives_in_the_Digital_Humanities_2014.pdf [accessed: 30.09.2018].

Jean Galard

An Art to the Bone

It is the most necessary art, the one in which every moment provides material and opportunity, the most devoid of conscious principles, stylistic categories, and well-known references, the art of conduct.

To know how to find, at the right time, the right gesture; to value the way as much as the objective; not to be satisfied with respect for customs or the ease of being uninhibited; to know, through minimal actions, to open the banal course of existence to the unexpected: some fortunate ways of behaving call for an understanding that seems to be of the same aesthetic order as the feeling that inspires, in contrast, the trivial failure of an attempt, the inelegance of a procedure, the affection of a way of being; however, they are far from being the subject of reflection as extensively studied as those commonly applicable to institutional arts. While cinematographic analyses, architectural conceptions, and literary theories flourish in speculative luxury, the appreciation of conduct and attitudes remains subject to the destitute jurisdiction of intuition.

We are constantly exposed to converting all our acts into gestures, into symbolizing a lifestyle, and a way of treating others. It is impossible, even in solitude or inaction, to prevent conduct from making sense (to mean, for example, isolation, retreat, sometimes resignation, desertion,) and thus to be expressive in the same way as a posture. Doesn't this whole set of attitudes (postures or impostures) that we inevitably adopt at any moment require a real art, which comes to evaluate, work on and recompose it?

Maybe the notion of art suggests an intention too intense, too concerted, to appear compatible with spontaneity and improvisation, which are supposed to prevail in the conduct of life. But, isn't it in the name of an aesthetic demand that we feel this very inconvenience (this incompatibility) and that we are embarrassed, for example, to see someone compose their image or

calculate their effects? Do the affected attitudes result from an untimely application of "art into life?" Do they not instead indicate that we have limited ourselves to the processes of a simplified art? The qualms of artistic activity lead it itself to undo the poses, mannerisms, and constructs that have been studied too much. Spontaneity is one of the ambitions of art; the wild, an aesthetic category.

Villiers de l'Isle-Adam evokes "some singer who, near his fiancée's death-bed and who overheard her sister cry convulsively, could not help but notice, despite her affliction, the flaws in her vocal emission which had to be signaled in these sobs and had in mind, in a vague manner, exercises designed to give them a fuller sound." Villiers de l'Isle-Adam strives to convince us that pain or joy are not felt less intensely as the expression is contained than it is when it struggles in confused noises. He detects rather an emotional weakness in those beings who would like to encourage more spontaneous impulses, more frank and sincere passions, and suspects them of crying out in order to justify their inaction beforehand, which they feel will soon be reversed. Emotional agitation falsely pretends to be natural: it reproduces "ongoing sincerities," and "accepted pantomimes."

If it is true that every reaction is socially shaped, and that our gestures, even the most elementary ones, are learned, then the art that would apply to them would not contradict the "natural," but would rather be a substitute for an earlier art, an implicit and unconscious aesthetic, which governs habit and sustainment, the capacity and convenience that underlies the demand of holding, or at least that of restraint. A deliberate art, attached to conduct, would not aim to oppose its possible refinement against the excesses of instincts; on the contrary, it would experiment with unthinkable gestures, which were excluded by inherited aesthetics.

Here, it is necessary to understand "gesture" in the widest sense of this term: not only in the strict sense (movements of the body, bodily uses), but also in the figurative meaning. To be resolutely vulnerable to danger, to stand up to a more powerful adversary, to embark on a hopeless undertaking for the sake of honor is to "act for the beauty of the gesture"—as if an aesthetic system, with constantly active albeit uninformed principles, made us believe that beauty can never look so good in the poses of defiance, in suicidal reactions, in glimmer and in gratuity. Tacit references also determine the judgment made on the whole process of a life: they set the criteria according to which a life is "successful" or "wasted," they establish a model of "exemplary" careers, thus freezing the innumerable failures of missed existences.

Treat conduct as an art. To postulate that it can, like theatre or music, free itself from restrictive ideals, from accepted aesthetics. The following attempts will be to examine aesthetic relevance according to several competing definitions, each time exploring the possibility of applying it to all behavior. These hypotheses are intended to be presented as distinct approaches, as a series of sketches (as a series of gestures). Far from attributing itself a pre-constituted field of experience, a field of observation, the research here stems from a desire whose object is not observed but induced: based on an analogical scheme, it infers the possibility of provoking, in the very course of life, the formal consistency or emotional intensity that is known in artistic experience.

Translated by Adrian Mróz

Excerpt from:

Galarud Jean (1986), *La beauté du geste. Pour une esthétique des conduites*, Paris: Les Impressions Nouvelles, pp. 8–12.

© Les Impressions Nouvelles, 1986

Jean Galard

The Poetics of Conduct

The aesthetic comprehension of existence is, after all, something we all share, as evidenced, for example, by the common use of the notions of “routine,” “monotony,” and “dullness,” by the frustration we feel when we have to lead a confined and impoverished way of life, which has been condemned to a platitude, and even as reflected in the metaphorical extension that is sometimes attributed to the opposition formed by “poetry” and “prose.”

Since Romanticism, the notion of “poetic” has claimed a field of application that goes beyond the sphere of words, which includes, for Chateaubriand, certain ancient practices (festivals, pilgrimages,) which, with George Sand, extends to the rural lifestyle as a whole. In the following century, Sartre interpreted an African lifestyle, which Senghor praised under the name of Negritude, as an expression of a poetry of farmers opposed to a prose of engineers (Sartre 1949, 265). Although far from romantic themes, Valéry points out a fact of language (“We say that a landscape is poetic; we say it under a circumstance of life; we sometimes say it of a person”) and takes up the premise that this use implies (“I know that there is poetry in this skyscraper”) (Valéry 1957, 1362, 1386). In the *Poetism Manifesto* [*Manifesto Poetismu*], Karel Teige claims to prefer the vibrations that life offers to the five senses over the detached flowers of literature: “a poetry of Sunday afternoons, picnics, luminous cafes, intoxicating cocktails, lively boulevards, spa promenades, but also the poetry of silence, night, quiet, and peace” (Teige 1972, 111).¹

How can objects, places, living conditions, beings, and behaviors seem to be full of poetry? If there is only one set of received ideas, then how and by whom were they given?

¹ English quote from: Teige 2010.

Jean Lacouture pointed out that Malraux had engaged in fighting for the Chinese, Vietnamese and Spanish, while he had remained outside the ranks of the Popular Front. He noted that this attitude is found in the third-world left of the 1960s, who preferred to be passionate about Palestinians or Vietnamese rather than the French proletariat, and concluded: "A never-ending debate, and perhaps without purpose. There are foot soldiers and cavalry. Nomads and sedentary people. Poets and prostitutes" (Lacouture 1973, 184–185). It is too hasty to eliminate the subject of debate by dividing poets and prostitutes into congenital varieties according to whether they are dedicated to a particular mode of action, as well as to preferences for tastes and colors that are understood as something that is not to be discussed. On the other hand, we could change our perspectives if different ways of living and acting were to be compared, criticized and discussed on the basis of such elaborate terminology as discourse analysis, and, to begin with, according to the alternative of poetry and prose. Instead of leading to a naturalistic typology of characters, this transposition of literary categories would give everyone the freedom to decide the tone, the genre, and the register in which they would write their lives. An individual, or even a group, may choose to behave in a poetic manner or to consent to prose, depending on the circumstances or the state of their aesthetic convictions.

Let us assume that poetry, instead of being first and foremost a collection of (verbal) objects, is a process whose autonomy would be sufficient for it to operate equally in word constructions, object dispositions, and gestural compositions. If poetic operation consists in a certain functioning of signs² (and not in the use of certain signs,) a poetics of conduct becomes conceivable, which would not be stopped by the obvious heterogeneity of words and gestures in the task of determining the properties of this functioning.

Without any ambition for an exactness (conforming to the uncertain essence of Poetry,) and without any guarantee other than the fertility of the model Jakobson built to classify the functions of language, we will start with the definition of the poetic function he proposes—even if this means exploring the deductions that would result from a different definition.

The poetic function highlights the material side of signs; it accentuates the sensory particularities of a message, which then refers mainly to itself instead of dissolving itself when used, in favor of the experience mentioned or the information transmitted; it organizes the sequences of signs in such

² Translator's note: the French word "le signe" has two meanings: 1) an indication or mark—as a sign of something's existence 2) as a movement or gesture.

a way that the perceptible character of their construction is maintained (Jakobson 1963, 218). What are the processes that make it possible to obtain this visibility of language that has become “self-contained?” They are, in the first place, the “figures,” and perhaps only them, if this term is understood broadly enough to mean everything that renders language perceived as such, and not only that which deviates from its most frequent use (Todorov 1971, 51; Ducrot, Todorov 1972, 351–352).

However, the perceptible aspect of certain sequences of signs is manifested in the order of conduct, as well as in that of language. The “savoir-vivre codes” used to form a rigorous equivalent of treatises about good speech or good writing. Their existence would be sufficient to prove that conduct is eligible for the same rhetorical approach as language. The gestures they codified make the “visibility” of conduct possible, just as patterns permit that of language.

Just as literary analysis had to combat the discredit that was thrown at the supposedly empty “forms” when the concern for a so-called “substance” prevailed, so should the analysis of conduct begin by rehabilitating the gesture, which was hastily belittled by being dismissed as external and secondarily related to the truth of intentions. True intent would be one that is materialized through action. Intentions would be false, affected, when they are content with gestures. Yet there is no difference between an act and a gesture in terms of the different intentions behind them. The movements of a worker appear sometimes as acts, sometimes as gestures, although the intention behind them is not supposed to have changed. They are acts until described. They are gestures as soon as we pay attention to them. Gesture is nothing other than an act considered in its entirety, perceived as such, noticed and retained. The act is what remains of a gesture whose moments have been forgotten and whose results are only considered. Even if its intention is practical and interested, the gesture is visible. The act is summed up in its effects, even if it was intended to be spectacular or gratuitous. The first imposes itself with the perceptible character of its construction; the other passes like prose that has delivered what it had to say. Gesture is the poetry of action.

Conduct is gesturalized by means of figures that are partially the same as those that have been inventoried by discourse theory. Repetition poetizes customs. Graduation marks happy careers, as does the antithesis of unexpected successes or spectacular falls. The ellipse signals freedom of movement. Irony mimics attitudes while preserving the indicators that invalidate their meaning. Holocausts, in the midst of a riot, sometimes constitute meta-

phors (when they devastate official buildings), and sometimes metonymies (if they destroy private property) of revolutionary symbolism. The refusal to shake hands is litotic; the hug a hyperbole.

It is true that some behavioral figures would remain unnoticed (would not exist as figures) if language did not intervene to highlight them. No conduct, perhaps, can be considered elliptical unless it is stated that the steps have been “skipped.” As for repetition, which is so crucial in the order of verbal poetry, it poses a problem when it concerns gestures. On the one hand, it is commonly experienced as an unfortunate necessity: ordinary tasks are monotonously repeated. Yet it appears as an agent of poetry according to the spontaneous aesthetics that governs, for example, anecdotal narratives, where the imperfect reiteration is willingly used. “The Surrealists met every day at the Cyrano.” The past becomes all the more mythical as it has become more habitual. “I too have often heard that urine patinates bronze. Pere Maillol ‘watered’ the large statues in his garden every day. Often, he confided to me in Marly-le-Roi, he even ‘held it’ in Paris to save this precious elixir for his bronzes” (Bressaï 1964, 251).³ An occurrence which may have been unique is worth recounting as a rite. Brassaï tells how Picasso, when he lived on rue La Boétie, worked for Albert Skira, whose office was in the next building: just as he had finished a copperplate, instead of picking up the phone, he picked up a trumpet and played *Ta-ta-ti, ta-ta-ti, ti-ta-ta, ti-ta-ta*; immediately Skira came running (Bressaï 1964, 129).⁴ Would this gesture preserve its charm if we assumed that it took place only once? Repetition plays a decisive aesthetic role. But we must ask ourselves if this role is not bestowed upon us by the verbal mode of the imperfect, if it does not result from a device of expression rather than from a poetic virtue that would be attached to repetitive reality itself, and in a nutshell whether the poetry of repetitions is not entirely the work of language.

The creative resources of behavior are likely to be very limited compared to the possibilities of the fictional arts, and more particularly those of the pure language arts. Some conducts may be described as unfeasible. For example, the one Cocteau imagines: “If my home was on fire and I could save only one thing—I would save the fire!” Here, the beauty of this gesture comes from the ambiguity of the word “fire,” from its symbolism. It is a fictitious gesture, made up entirely by a play on words. Action would not

³ English quote from: Brassaï 1999, p. 277.

⁴ English quote from: *ibidem*, p. 141.

only be useless (fire is easily obtained anywhere but in a fire⁵), it would even be impossible (fire is not simply transported: it is this or that burning object that would be removed from the embers.) Therefore, it is to language that we must relate, here again, the power of poetization that exerts to the apparent benefit of conduct.

Should we generalize? The question arises as to whether conduct is not irremediably prosaic in relation to the discoveries to which the words lend themselves. We may be tempted to answer that gestures, as such, are neither poetic nor prosaic, that the decisive role belongs to language, that it is through language that poetry comes to behavior, which is aesthetically neutral as long as literature does not take it over.

Alfred Jarry once showed in a striking way that an apparently insane gesture suddenly makes sense if you think about uttering the most literally appropriate verbal expression for it. In a local bar, which he had entered carrying his firearms as usual, he fired his revolver at a glass mirror, which shattered. In the midst of general commotion, he turned to the woman seated next to him and said, "Now that the ice is broken, we can talk." The polysemy of the word "ice,"⁶ as was the case earlier with the word "fire", is essential in the constitution of such an act. It would therefore not exist if it were not said.

In Cocteau's sentence, the two meanings of "fire" are linked by a symbolic relationship, physical combustion being the agreed meaning of spiritual intensity. On the other hand, Jarry brings together two meanings of "ice" that have no connection to each other. Thus Cocteau's pseudo-gest has a "poetic" effect that can be considered relatively easy; it is only clever, while Jarry's is unusual and "surrealist." But both share a common feature: they illustrate verbal power, rather than that of the gesture.

So it is true, in a sense, that there is poetry only in poems (as there is adventure only in novels, intrigue only in stories, and dramatization only in theatre) and that a gesture may owe most of its beauty to the talent with

⁵ Translator's note: Like the Latin term *focus*: fire as a home, a hearth, a symbolic source of warmth. To be more precise this statement should be understood as follows: "fire" is easily obtained anywhere but in "spiritual intensity." I have decided to leave the word "fire" because of its ambiguity in modern English, especially the American slang use of the word "fire." If something is "fire," then this is understood as synonymous to "awesome," "extremely appealing," and "exciting." It is like the word "ablaze," meaning either burning fuel in heat combustion, or to shine with emotion. Compare with definition 4 (BRILLIANCY, LUMINOSITY) in: *The Merriam Webster Dictionary*, [online] <https://www.merriam-webster.com/dictionary/fire> [accessed: 25.03.2019].

⁶ Translator's Note: In French, the word for ice is "la glace," which can mean: ice, ice cream, glass, or mirror.

which it can be told. However, provided that these privileges of literature are not minimized, we can recognize the processes available to it to try to implement them differently elsewhere. When apprehended with a sufficient degree of abstraction, they appear as aesthetic operations, likely to be defined differently according to the substance of the art that uses them.

The most remarkable of these processes is the one that consists in reinserting meaning into certain forms in which functional constraints were meant to be insignificant. In an artistic text, as Iouri Lotman says, "there is a semantization of the extra-semantic (syntactic) elements of the natural language" (Lotman 1973, 53). The same operation, which is found in the cinematographic practice of slow motion or freeze-frame, will also consist, under other modalities, in breaking the course of conduct, in focusing attention on one of its moments, to give it a meaning that is dissolved by a sequence of acts.

Greimas pointed out the ambivalence of certain bodily activities that, depending on the situation, take on opposite semiotic statuses. A movement, such as lowering the head, may appear as a complete gestural statement (a greeting;) on the contrary, it may, while being physically identical, be part of a sequence (passing through a low door.) From being a statement, it then becomes an element with the status of a phoneme, a minimal unit that reduced to itself means nothing. A single movement can then be defined either for an entire program with meaning, or for a subprogram, as Greimas compares it to the meaningless syllable. In the latter case, it is limited to ensuring the transitivity of the sequence. In the first case, we will say it is intransitive. A bodily movement, which in itself was likely to constitute a program and therefore to be charged with meaning, "disintegrates" when it is incorporated into a broader syntagma (Greimas 1968, 14–15).⁷

Through a terminological decision not made by Greimas, but which seems to be in line with the use of language, let us consider as gestures only the intransitive bodily movements, which are entire programs. It must be admitted that the same movements, when they merge into a larger syntagma, when they de-semantize, lose their status as gestures. Since there seems to be no movement that is always in a semantically neutral position, nor is there any movement that is definitively outside the process of de-semantization, one must expect that, in all corporal uses, the class of gestures will be mobile. A comedian can form in gesture the movement of the arm borrowed from a sower: he re-semantizes it by inserting it into his con-

⁷ Included in: Greimas 1970, 49–91, see especially pp. 65, 60.

duct, since this movement does not belong there as it does to a farmer who sows a field. A simple spectator, likewise, has the opportunity to re-semanticize an element of someone else's conduct and to see, for example, a "noble gesture" in a place where the sower has neither the feeling of being noble nor even the desire to make gestures.

This accounts for a remarkable property of gesture, namely that it makes it possible to speak, by virtue of the semantic richness that can be attached to any movement of the body, but while leaving the resource to defend oneself as having said nothing at all, thanks to the perpetually possible absorption of this movement into a syntagma that neutralizes it. The significance of gesture is always transmitted with the possibility of its denial. A movement is capable of presenting itself as a carrier of an autonomous meaning that is easily readable and then disappears immediately in the innocence of an insignificant practice. It says what it wants to say, but it has already kept silent, it fades away, it must not be stopped, it has never been a gesture. It is because all movements, all postures are able to be intransitive, but they can also immediately get rid of their semantic charge by incorporating themselves into a sequence, either by the subsequent effective construction of the sequence, or by a simple change in punctuation that reveals a fragment of a sequence where a complete statement could have been read. Alleviating the constraints of a schedule is the most banal way to remove from a departure, for example, the meaning that it had indeed been given, but that we prefer to annul. When I walk out, I indicated my disagreement, enmity or indifference; however, this departure is no longer a gesture, if the rest of the program summons me further on.

For language to have such latitudes, it would have to be possible, on the one hand, for a word to cease being a word, and eventually become a meaningless syllable, and on the other hand, for a syllable to suddenly be as valuable as a word. The first condition, to be honest, is satisfied, since it is by reference to linguistic experience that Greimas defined the phenomenon of de-semanticization in order to signal its presence in gestural order; the word *or* disappears in *ore*, which cancels itself out in *more*, which in turn is neutralized in *humored*.⁸ What about the reciprocal process? What magic could ever make the *ore* in *more* buoyant or make the *or* in *ore* suddenly rupture?

⁸ Translator's note: In the original French the words used are: *or*, *port*, *porte*, *rapportera*. Original phrase: le mot *or* s'annule tel dans *port*, qui s'annule lui-même dans *porte*, qui s'annule à son tour dans *rapportera*. Mais le processus réciproque? Quelle magie pourra jamais faire espérer le *port* dans la *porte* ou faire briller brusquement l'*or* dans le *port*?

Poetry is the art of these metamorphoses. Let us now call the poetic function the power of language to vary the range of meaningful elements. As an example of augmentation, we can think of Queneau's devices, causing the sound material to be absorbed from one word to another (volatilizing the Arts by writing: "We lizards love the Muses" (Queneau 1952, 115). As for the narrowing of units, this seems to be the objective of the processes most constantly mobilized by what is known as poetry. By multiplying the statements in which a word reappears, repetition dissociates it from each context, preventing it from blending into the sequence that would confiscate it. Alliteration creates meaningful units within the words themselves. The establishment of unexpected correspondences revives the primitive metaphors that many words contain but that usage has extinguished, or invents fictitious etymologies, which dislocate customary aggregates. A formal permanence underlined by rhyme or assonance produces a leap of degree that causes the word to rise out of the linear discourse. At the extreme of this constriction, and as Leiris has lavishly shown, vowels and consonants regain their flavor, fragrance and tactile quality, while alphabetic characters unleash the full symbolic power of their graphics. "Poetry fades away and the Sabbath freezes when letters and words take their place on the line and become dead letters after having been Kabbalistic springs of illumination" (Leiris 1949, 38–71).⁹

The similarity is then clear between poetry—which Jakobson also defines as a language in which "the inner form of words, in other words the semantic charge of their constituents, finds its relevance" (Jakobson 1963)—and a certain type of behavior that should be qualified as gestural because it is characterized by the abundance of re-semantized movements.

This type of behavior is obviously quite different from the habit of gesticulating. Just as verbal poetry is not the mere accumulation of linguistic units which the sensibility of an era has already charged with the weightiest meaning, so too conduct determined by the poetic function does not consist in a multiplication of gestures, if we mean by this the movements already codified by the communication system in force. Rather, it is a creation of gestures, i.e. the liberation of movements that are still unnoticed, thanks to the dislocation of the sequence that contained them. In the most favorable situation for gestural activity, which is theatre, the opportunity for this distinction is obvious: a ham is content to repeat, as is, the gestures they have experienced, while the true actor's search aims to decompose behavior into meaningful units that are usually imperceptible.

⁹ See the entire chapter «Alphabet», pp. 38–71.

When applied to conduct, the poetic function dismantles the pragmatic sequence of movements; it contradicts the absorption of means by a goal, of the immediate by a perspective; it emphasizes the manner of acting, the method used, and converts the choice of process into a real objective.

To vote or to abstain. Although it is true that these are two gestures, they are not immediately granted as such. Voting is first and foremost an act, which seems to be entirely committed to a transitive effort in favor of an outcome, in relation to which it represents a disempowered means. On the contrary, abstention is immediately a gesture; it concretizes in the moment the sense it intends to attribute to the actual election. However, it also reveals that participating in a vote is also a gesture; it underlines that the acceptance of suffrage is already significant in terms of an approval given to the system that organizes the dispossession of responsibilities; it highlights that “voting, whatever the ballot paper, is voting for the vote and already accepting the institutions” (Jeanson 1974, 257–258).

However easy it may be to criticize, in return, the inefficiency of excessively pure gestures, it must at least be recognized that they are the ones that bring out, by contrast, that the most pragmatic conducts are, for their part, composed of forgotten gestures.

Jacques Vaché, as we say, never extended his hand. This other gesture of abstention projects a renewed meaning on the contrary gesture, suddenly reveals to others the strange habit of the mechanical handshake and re-semanticizes a movement that is usually overlooked as a gesture.

Poetry, whether verbal or gestural, revives dead signs, so that all prose becomes more vivid.

Translated by Adrian Mróz

Excerpt from:

Galard Jean (1986), *La beauté du geste. Pour une esthétique des conduites*, Paris: Les Impressions Nouvelles, pp. 14–32.

© Les Impressions Nouvelles, 1986

References

1. Brassai (1964), *Conversations avec Picasso*, Paris: Gallimard.
2. Brassai (1999), *Conversations with Picasso*, trans. Jane Marie Todd, Chicago: The University of Chicago Press.
3. Ducrot Oswald, Todorov Tzvetan (eds.) (1972), *Dictionnaire encyclopédique des sciences du langage*, Paris: Seuil.
4. Greimas Algirdas Julien (1968), "Conditions d'une sémiotique du monde naturel", *Langages*, 10.
5. Greimas Algirdas Julie (1970), *Du sens, essais sémiotiques*, Paris: Seuil.
6. Leiris Michel (1949), *Biffures*, Paris: Gallimard.
7. Lotman Iouri (1973), *La structure du texte artistique*, trad. fr., Paris: Gallimard.
8. Jakobson Roman (1963), "Linguistique et poétique", *Essais de linguistique générale*, trad. fr., Paris: Minuit.
9. Jeanson Francis (1974), *Sartre dans sa vie*, Paris: Seuil.
10. Lacouture Jean (1973), *André Malraux, une vie dans le siècle*, Paris: Seuil.
11. Queneau Raymond (1952), *Si tu t'imagines*, Paris: Gallimard.
12. Sartre Jean-Paul (1949), "Orphée noir", *Situations III*, Paris: Gallimard.
13. Teige Karel (1972), "Poétisme", *Change*, 10.
14. Teige Karel (2010), "Poetism", [online] <https://modernistarchitecture.wordpress.com/2010/10/21/karel-teige-s-poetism-1924/> [accessed: 20.02.2019].
15. Todorov Tzvetan (1971), *Poétique de la prose*, Paris: Seuil, p. 51.
16. Valéry Paul (1957), "Propos sur la poésie" et "Nécessité de la poésie", *Variété*, Paris: Gallimard, Pléiade, tome I.

About the Contributors

Jean Galard—is a French philosopher and art critic. He studied philosophy at the University of Sao Paulo and was a director of cultural services and pedagogical activities at the Louvre museum between 1987 and 2002. We find among several books written by him *La Beauté du geste* (1984) and a continuation of those perspectives in *La beauté à l'ouïe* (2004).

Francis Mechner—Columbia University: Ph.D. 1957; Lecturer in Psychology 1955–1960. Author of numerous experimental and theoretical studies, and of a symbolic language for codifying behavioral contingencies. Relevant publications: *A Behavioral and Biological Analysis of Aesthetics* (2018a), reply to the Commentaries on his Article (2018b), *The Biological Utility of Aesthetic Sensibility* (2019). Positions: President, Mechner Foundation; Dir., Queens Paideia School; Trustee, Cambridge Center for Behavioral Studies.

Adrian Mróz—describes himself as a trans-national, since he was born in the USA and had a polylingual upbringing around Baltimore City in a Polish and Polish-American diaspora. Currently he resides in Poland, drifting between Kraków and Poznań. He is a PhD student writing on the problematics of behavioral aesthetics under the supervision of Sidey Myoo at the Jagiellonian University. He is also an alumni of The Ignacy Jan Paderewski Academy of Music in Poznań. His research interests include the philosophy of art and aesthetics, new media, gender, and new French philosophy. He also plays saxophone and guitar in the Kraków based band “SmoGGG”.

Anaïs Nony—Andrew W. Mellon Postdoctoral Fellow at the Center for Humanities Research, Flagship for Critical Thought in African Humanities at the University of the Western Cape in South Africa. She specializes in the 20th/21st-century genealogy of media art in the Francophone world and researches the function of new media technologies in shaping transcultural exchanges in and outside of the West. Co-founder of the international collective Noötechnics and editorial board member of the open-access and quadri-

lingual journal *La Deleuziana* (Spanish, French, Italian, English), her work develops aesthetic and philosophical questions that address how technologies are shaping psychic and collective life on a global scale.

Debora Pazetto Ferreira—professor of Philosophy at the Federal Center of Technological Education, where she supervises Master's degree research in Art and Technology and coordinates ARTEC (Research Group in Art and Technology). She holds a doctor's degree in Aesthetics and the Philosophy of Art with an internship at the Université – Paris I. She has published several articles in national journals, organized important books on Aesthetics, such as "Tragic, Sublime and Melancholy" (Volumes I, II, III and IV, 2016) and "The ends of art" (2018), and is a member of the board of directors of ABRE (Brazilian Association of Aesthetics).

Daniel Ross—is co-director of the film *The Ister* (2004), which won awards in Montreal and Marseilles. He is the author of *Violent Democracy* (Cambridge University Press, 2004), and the translator of ten books by Bernard Stiegler, most recently *The Age of Disruption* (Polity Press, 2019).

David Charles Wright-Carr—professor of art history and embodied aesthetics at the University of Guanajuato, Mexico. He is a member of the National System of Researchers and the Mexican Academy of History. He has published books, chapters, articles, and conference papers on the ethnohistory, philology, and visual culture of the native peoples of central Mexico.