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(Re-)mediating the Unconscious

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Introduction: (Re-)mediating the Unconscious

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The way media can attune to what rests beneath the level of conscious awareness remains an area of intense popular as well as theoretical fascination. Since the late 19th and early 20th century, screen media and notably cinema have been associated, both in theory and in cultural imagination, with non-conscious and preconscious states, as well as with shifts in consciousness. Symptomatic of this connection are narratives of hypnosis proliferating in films of early cinema until the 1920s – from *At the Hypnotist's* (*Chez le Magnétiseur,* Alice Guy-Blaché 1897), and *Le Mystère des Roches de Kador* (*The Mystery of the Rocks of Kador*, Léonce Perret, 1912), to *The Cabinet of Dr. Caligari* (*Das Cabinet des Dr. Caligari*, Wiene 1920) and *Dr. Mabuse, The Gambler* (*Dr. Mabuse, der Spieler*, Lang 1922), which point at the shared apparatus of hypnosis, psychoanalysis, and cinema, as theorised by Raymond Bellour (see Bellour 2009; Bergstrom 100-2, Radner and Fox 54-55).[1]

The scholarly study of cinema, which emerged in the 1910s and developed throughout the 20th century, addressed and cultivated the connection between the medium of cinema and the unconscious, starting from Walter Benjamin's 1930s concept of the "optical unconscious" – that is, the idea that the visual dimension of reality that escapes conscious perception can be revealed through technical media, such as photography and cinema. This endeavour has been theoretically approached through various perspectives.

In classical psychoanalytic film theory, especially as developed in the 1970s through the writings of Christian Metz, Jean-Louis Baudry, and Laura Mulvey, the cinematic apparatus

[1] See also Eugeni 2019 for more titles of early films involving hypnosis and on how they contributed to the *dispositif* of cinema.

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was seen as structuring the spectator's subjectivity through unconscious mechanisms. Drawing on Freudian and Lacanian models, these theorists emphasized identification, fantasy, repression, and the mirror stage as keys to understanding how film interpellates the viewer as a desiring subject. For these approaches, prereflectivity was often equated with the operations of the unconscious. The cinematic experience was thought to bypass rational thought and engage the viewer through libidinal investments, unconscious identifications, and ideological interpellations. Mulvey's famous analysis of the "male gaze" posited that classical Hollywood cinema naturalized patriarchal structures by positioning the (implicitly male) viewer to identify with the active male protagonist while objectifying the female character. Crucially, these processes were not accessible to the viewer's conscious awareness; they operated at the level of the unconscious and prereflective. Yet, while psychoanalytic theory offered a compelling account of how spectators are positioned and how meaning is produced unconsciously, it often relied on a static model of the subject and ignored the phenomenological and perceptual dynamics of actual film viewing.

Starting from the late-1980s, the cognitive turn in film studies, associated with theorists like David Bordwell and Noël Carroll, sought to move beyond the so far dominant, and according to these theorists, speculative and ideologically deterministic models influenced by psychoanalysis. Drawing on developments in cognitive psychology, these theorists portrayed the viewer as a rational, information-processing agent who actively makes inferences, forms hypotheses, and simulates emotional states. Cognitive theory redefined prereflectivity not as unconscious repression but as automatic and subpersonal processes: low-level perception, attention, affective appraisal, and mirror neuron activation. For instance, Murray Smith's *Engaging Characters* proposed a model of character engagement involving three levels: recognition, alignment, and allegiance. While some of these processes are conscious and deliberate, much of the initial engagement with characters – such as emotional mirroring or

empathic resonance – operates prereflectively. Importantly, cognitive film theory also integrated aspects of affective neuroscience, showing that viewers respond emotionally and physiologically to filmic stimuli in ways that precede conscious interpretation. The prereflective, in this context, refers to the embodied, automatic reactions that scaffold higher-order understanding.

In recent years, cognitive science has undergone its own turn – toward embodied, embedded, enactive, and extended models of the mind. These "4E" approaches challenge the idea of cognition as internal information processing and instead view it as a relational process involving body, environment, and action. This shift has significant implications for film theory, particularly in understanding prereflective and unconscious experience. Enactive approaches to film see cinematic experience not as passive reception or even internal simulation, but as a form of embodied action and perceptual coupling. The viewer engages with the film world through sensorimotor expectations, rhythmic entrainment, and affective resonance. These engagements are fundamentally prereflective: they involve bodily attunement, proprioceptive awareness, and felt emotion before conscious narrative comprehension. Vivian Sobchack's phenomenological account of film viewing as an embodied, intersubjective experience exemplifies this approach. She argues that the viewer's "lived body" responds to filmic movement, rhythm, and gesture in a way that is fundamentally prereflective – what she calls a "cinesthetic" relationship (see also Massumi; Shaviro; Hansen; Ivakhiv). More recently, 4E approaches have been applied to immersive media and virtual reality, where the boundaries between viewer and viewed, subject and object, are further blurred, and prereflective engagement is intensified through sensorimotor involvement. In enactive theory, consciousness and unconsciousness are not conceived as separate layers of mental content (as in classical psychoanalysis), but as processual, embodied, and dynamically co-constituted

aspects of sensorimotor engagement with the world.[2] When applied to cinema and moving-image media, this framework shifts the focus from representations in the mind to experience as embodied interaction with cinematic forms. The influence of embodied cognition perspectives on the studies of the moving image (see among others, Tikka, Coegnarts and Kravanja; Gallese and Guerra, D'Aloia and Eugeni; D'Aloia) has motivated new interdisciplinary research in the non-conscious, prereflective and unconscious processes involved in – the widely conceived – cinematic engagement, including "post-screen" media. In the context of a new "crisis of reason" amidst global economic, political and social turmoil, interest in what stays behind the "doors of perception" is gaining new pertinence – and is scientifically updated –in interdisciplinary exchange with current psychology and neuroscience, which shows a re-appreciation for psychoanalytical approaches (see Gallese; Carhart-Harris et al.; Carhart-Harris and Friston). This growing interdisciplinary inquiry shows how fields beyond film theory and cinema/media studies, such as psychology and neuroscience, can contribute their accounts of the unconscious, pre-conscious, and altered states of consciousness to screen media analysis.

The title of this issue, "(Re-)mediating the unconscious", might seem paradoxical, as the unconscious is something that, by definition, lies beyond the reach of conscious awareness, conceptualization and linguistic articulation. Nonetheless it is exactly because of this, that addressing mediation is a way to address not the unconscious per se, but its ways of finding expression through habitual, embodied, imaginative and affective inscriptions in (cinematic) media forms.

Beyond a Freudian conception of the unconscious, a spatial, "Gestalt-like" approach to it, which can be found in both neuroscientific and philosophical-phenomenological accounts,

[2] In their *Philosophy in the Flesh*, Lakoff and Johnson emphasize that most of our conceptual system operates unconsciously, not because it is repressed, but because it is bodily-based, automatic, and inaccessible to introspection. The "cognitive unconscious" includes all those mental operations that structure and make possible our conscious experience but are not themselves accessible to consciousness (see Lakoff and Johnson 9-15).

makes it easier to think of mediations of the unconscious, emphasizing its continuity with the conscious. Such approach is not new; its traces can be found in several accounts of the unconscious in the 20th century. For example, Gestalt psychologist Kurt Koffka was insisting that "There is no break between the conscious and the unconscious" (165); and he argued for a dynamic link between unconscious "traces" and consciousness, offering another perspective on how "the unconscious looms up as a powerful determiner of conscious life." (161) According to the gestaltist, holistic view of mental processing, the unconscious is continuous with the conscious, and "structured" as well, with "stressed areas" that are ready to be activated and belong to the same wholes / strains with the conscious thoughts with which they are connected (Koffka 161). Gestalt psychology, which influenced Rudolf Arnheim and others in the early development of film theory, offered a different model of prereflectivity – one grounded not in the unconscious drives but in perceptual organization. Arnheim's *Film as Art* applied these principles to the cinema, arguing that film is not a medium meant to reproduce reality but a formal medium whose aesthetic effects depend on the viewer's active organization of sensory inputs into meaningful wholes. In contrast to psychoanalysis, the prereflective here is not unconscious desire but the perceptual structuring that allows us to make sense of complex visual stimuli. Gestalt theory thus foregrounded the embodied, immediate, and dynamic nature of perception – laying important groundwork for later developments in film and media theory.[3]

Much more recent accounts of consciousness, such as that of neuroscientist Bernard Baars, persist in giving the unconscious the role of the context/ground that shapes the conscious contents of our thoughts, in a reciprocal relationship: "Conscious *contents* trigger a host of unconscious processes and are shaped in turn by unconscious *contexts*." (Baars x; emphasis added) As Baars claims, most theories of consciousness use the theater metaphor to describe it as a stage – or a "central workspace" – where a level of integration of distributed processes is

[3] See D'Aloia and Verstegen.

achieved (Baars viii-ix). Baars borrows Francis Crick's idea of the spotlight of visual attention[4] to refer to "players" (outer and inner senses and ideas) competing to get to the "spotlight of attention shining on the stage of working memory" (Baars 42) – which he equates with the conscious. The spotlight reveals what becomes conscious, while the stage is "observed" – following the same theatrical metaphor – by an unseen audience: unconscious processes including mnemonic, semantic, motivational and knowledge systems, as well as automatisms (Baars 42). There is a constant interaction between what is on and off stage – as conscious content feeds into unconscious processes, and the other way around. As the *dispositif* of cinema is a direct descendent of that of the stage play, the former can be seen as another materialization of (extended) consciousness, as a dynamic field where processes of attention and awareness play off, in a similarly constant interaction between what is on and off screen.

Ultimately, a "spatial" conception of the unconscious like the one sketched above might not be as incompatible with psychoanalysis as it first seems. Freud used a similar metaphor to distinguish the role of the preconscious, as a space between the conscious and the unconscious:

> The impulses in the entrance hall of the unconscious are out of sight of the conscious, which is in the other room; to begin with they must remain unconscious. If they have already pushed their way forward to the threshold and have been turned back by the watchman, then they are inadmissible to consciousness; we speak of them as *repressed.* But even the impulses which the watchman has allowed to cross the threshold are not on that account necessarily conscious as well; they can only become so if they succeed in catching the eye of consciousness. We are therefore justified in calling this second room the system of the *preconscious*. (Freud 332)

[4] See Crick 62.

> It is the preconscious which, according to Freud, is a constantly present ground to be activated and provide consciousness with its (intentional) objects. And the objects of this in-between ground or "room" are always in a state of possible "leakage" between the three spaces. There is a certain mobility implied through this spatial model of the different states and levels of consciousness, according to Freud.

Other dynamic models of the relationship between conscious and unconscious could be traced back in the work of American psychologist and philosopher William James. Even though an account of the unconscious has been considered missing from James' major work *Principles of Psychology* and his well-known notion of the stream of thought (see Baars 16), this view has been contested. The stream, as conceptualized by James, is composed of "substantive parts" – those to which our interest is momentarily attached, making them the centre of our attention – and of "transitive parts", which are volatile and diffuse, surrounding the substantive parts but not brought into the focus of attention, thus being unconscious (243). These gaps between the substantive parts are described by James as "aching" to be filled; any thought and mental image or state we experience in those gaps "swims in a felt fringe of relations" (259) with the substantive part to which attention as well as fully conscious perception is attracted.[5]

James was mostly interested in the destabilizing dynamics sustaining the successive "stable" states of consciousness, and in this "twilight of consciousness" in-between salient thoughts and percepts. As it is known, he was particularly interested in the now so-called "altered states of consciousness", including hypnagogic hallucinations, trance, habit, reverie, etc. – his inquiry gaining pertinence in the context of a renewed interest in experiences of

[5] James' concept of consciousness is impressively akin to more recent neurological accounts of consciousness in dynamical systems neuroscience (e.g. Tognoli and Kelso), where conscious thoughts are conceived as attractors in a state space, and the mental system as a continuous stream tending towards them but never "dwelling" in them.

absorption, transportation and trance in film and other media (see Hakemulder et al; Green and Brock).[6]

The transitive parts of the stream are for James diffuse, and not entirely conscious, but they make this "glue" connecting the substantive parts, creating the unity of consciousness which serves as the background and container of the whole range of its distinct states. Particularly the notion of the fringe surrounding and accompanying the "substantive parts" of the stream, is "clearly a model of unconscious processing", according to Joel Weinberger. "The fringe is not directly represented in consciousness. It is the latent (unconscious) connotation of our thoughts." (442)

As James writes in his work *Pluralistic Universe*,

> My present field of consciousness is a centre surrounded by a fringe that shades insensibly into a subconscious more. … Which part of it properly is in my consciousness, which out? If I name what is out, it already has come in. The centre works in one way while the margins work in another, and presently overpower the centre and are central themselves. What we conceptually identify ourselves with and say we are thinking of at any time is the centre; but our *full* self is the whole field, with all those indefinitely radiating subconscious possibilities of increase that we can only feel without conceiving, and can hardly begin to analyze. (130)

In this description, a figure-ground relation between conscious and unconscious becomes again prominent. Such "Gestalt" conception of the unconscious has been also advanced by Maurice Merleau-Ponty, who, in *The Visible and the Invisible*, writes that "This unconscious is to be sought not at the bottom of ourselves, behind the back of our 'consciousness', but in front of

[6] In his seminal study *Suspension of Perception*, Jonathan Crary draws on James to refer to the historical linkage between cinema and trance.

us, as articulations of our field. It is 'unconscious' by the fact that it is not an *object*, but it that through which objects are possible." (180) In this phenomenological conception the unconscious is encompassing all that stays in the periphery – rather than the centre of attention and awareness – but still influences everything that is attended to and thus brought to conscious awareness.

"Re-mediating the unconscious" thus seeks to address the constant interplay between unconscious and conscious processes; and the way modulations of consciousness encompass both areas of awareness and unawareness. The concept of mediation is key for such inquiry, and its function as seen in the context of this issue is twofold: first, mediation refers to the relational ground in-between conscious and unconscious, awareness and unawareness, and those "indefinitely radiating subconscious possibilities of increase" (in James' words). And second, it refers to media as the cultural-technological means for realizing such possibilities. The articles of this issue shed light on this two-fold function of mediation, taking on the challenge to re-think the unconscious in non-traditional, relational, dynamic, permeable, and creative ways.

Re-mediation refers to both a theoretical gesture of rethinking mediation and its role in consciousness, and, in line with Bolter and Grusin's coinage of the term "remediation", of calling attention to the way established media practices and related ways of perception might become unconscious, habitual and unattended – but still inform and shape new media uses and responses in ways that are not always obvious.[7] Focusing on mediated modulations of consciousness can shed new light on how media affect us in multiple ways.

[7] While remediation described how new media refashion older media through the complementary logics of immediacy and hypermediacy, the notion of "premediation" (Grusin 2010) introduced the idea that contemporary media do not simply represent events but constantly anticipate possible futures, operating affectively to prepare subjects emotionally for what might happen. More recently, Grusin (2015) advances the theory of "radical mediation", in which mediation is no longer seen as a neutral channel for transmitting content, but as a constitutive force of experience itself. No longer secondary or derivative, mediation is ontologically primary: it involves bodies, atmospheres, objects, and infrastructures, and operates both below and above the threshold of awareness, radically reshaping our understanding of perception and media experience.

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The issue's first four articles are devoted to mediated modulations of consciousness, contributing to thinking how (post-)screen media, in both narrative and non-narrative forms, address, express and "exploit" unconscious and preconscious processes – in particular habitual behaviours, biases, dreams, attentional fluctuations, and processes of identification and transportation into a narrative world.

In the first article, Enrico Carocci discusses the way social media platforms engage, condition and exploit the affective mind, through habits (scrolling, image-based reactions, etc.) that contribute to transformations and shifts in consciousness, particularly referring to the case of the "oddly satisfying videos" proliferating on TikTok. Carocci focuses on a side-effect of habitual engagement with media, namely the attitude of "impatience" characterizing media responses, defined as "an affective habit that is unreflexively enacted when experiential processes do not flow smoothly". Drawing on affective neuroscience, which postulates that the biological locus of affective disposition and preconscious habits lies in subcortical structures of the "mammalian brain", the paper suggests new ways to reflect on how seamless interfaces involve the affective mind and operate below the level of consciously mediated thoughts and emotions.

The next article takes issue of different media developments and the way they influence cultural but also scientific imagination regarding the unconscious. Giancarlo Grossi postulates that, just like the panorama in the 19th century, VR is now the technology that serves as a model of the dream state for science, stimulating new conceptions and explanations of the dream as a major expression of the unconscious. Grossi takes a contemporary "complex narrative" film, *Paprika*, as symptomatic of an epistemological paradigm shift regarding the unconscious, and the dream in particular. The film continues a lineage of VR and VR-inspired narratives that

since the 1980s made new models of dreaming emerge in cultural imagination and science as well, models "that radically cut ties with the psychoanalytic conception that dominated the episteme of the twentieth century". In popular culture as well as in recent neuroscientific theories, Grossi postulates, the dream is not just visualized but navigable (as a VR machine), presented "no longer as unconscious, but as a conscious model of the world acting offline rather than online." Grossi here echoes Benjamin showing how current narratives (circulating in-between culture, technology and science) apart from externalizing the unconscious, act as protective mechanisms and training tools against the uncertainties of late-capitalist societies.

The following article also takes issue of complex narratives expressing cultural conceptions of the unconscious. This time the focus is not on the dream but on mental illness as a state diverging from normative consciousness, and on films with plot twists that feature unreliable, "neuro-non-normative" protagonists. Melanie Kreitler connects two types of "unconscious" processes involved in such narratives: what she calls the "fictional unconscious", meaning what is not revealed by the narrative (leading to the plot twist, usually through devices of unreliable narration), and the "viewers' unconscious" – what the viewer remains unaware of – the biases related to mental illness that when narratively exploited, make the plot twist work. Using as case study a film by Joe Wright (*The Woman in the Window* 2021), Kreitler focuses on the processes of meaning-making employed by viewers and primed by plot twist films, as well as on the cognitive and enculturated unconscious biases involved in these processes that promote judging neuro-non-normativity as external and unreliable. Kreitler finds the "political" potential of films like *The Woman in the Window* in making us aware and conscious of our culturally biased conceptions of mental illness. Thus Kreitler's chapter addresses an important issue regarding the re-mediation of the unconscious, that is, the political and ideological stakes of mediated modulations of consciousness.

The fourth article of the issue, written by Irina Andreeva and Melanie Green, investigates narrative complexity and identification in a "hybrid" medium; that of "actual play narratives" – role-playing games performed by a cast of players and streamed for an audience. Taking a social psychological perspective, the authors take issue of unconscious processes involved in narrative engagement. They particularly use the concept of "narrative transportation" (a concept previously extensively researched by Green – see Green; Green and Brock "The Role of Transportation"; Green and Brock "In the Mind's Eye") as a state of immersion into a narrative world involving "an intense focus and loss of self-consciousness", therefore classified as relatively unconscious in the sense of one's losing the sense of "the external world or their self-concept". But instead of considering conscious or unconscious narrative processing as a binary, on/off situation, the authors investigate its nuances in a spectrum, through multiple shifts in consciousness happening during playing time. Thus, even though transportation is generally considered relatively unconscious, as audience members surrender a large part of their awareness of their self and surroundings, the flexible and dynamic concept of engagement with narratives suggested in this paper highlights how both conscious and unconscious processes feed into one another allowing for a more complex and enjoyable narrative experience.

The issue's following articles focus on prereflective and "embodied mediations of consciousness" through cinema and cinematic media.

Taking a wider perspective on narrative as an emergent mental process, Pia Tikka and Mauri Kaipainen suggest a method to "capture" and understand narrative's emergence "from the depths of the human mind" up until its articulation in media artifacts and intersubjectively shared stories. They use film as a medium ideal for excavating the paths of narrative emergence; as a laboratory for simulating lived experience under controlled experimental conditions. The combination of neurocinematic methods (such as MRI scanning to monitor

viewers' brain responses to events narrated in specific film scenes, as well as collection of various biometrical data showing emotional involvement, for example), with micro-phenomenological interviews of viewers, cross-referenced with some objective data about film narratives (annotations of narrative events usually undertaken by film professionals, such as editors), allows to reveal minuscule pre-conscious, pre-verbal and prereflective experiential aspects of "core experience" that give rise to initial forms of "autonarration" (making sense of the complexity of a plethora of different stimuli), and potentially, through embodied intersubjectivity, to (verbally) mediated narratives, thus "communicative narration".

In his contribution Maarten Coëgnarts also uses cinema as springboard to explore the notion of the cognitive, rather than psychoanalytical, unconscious, based on theories of embodied cognition, especially George Lakoff's and Mark Johnson's concept of "embodied metaphors" that structure thought and language. Using as a case study the film *Portrait of a Lady on Fire* (Sciamma 2019), Coëgnarts proposes a model of film analysis that "excavates" such embodied metaphors in the stylistic system of the film (editing, cinematography, *mise en scene* and sound). As he suggests, "the meanings that are fleshed out in the work's design parallel the intrinsically embodied operations of every human brain in everyday life, and it is precisely this trade-off of shared embodied knowledge that makes it possible for artists to communicate with viewers in a very engaging unconscious and bodily way." Thus the issue of intersubjectivity and communicativeness in (cinematic) narration is here again lit from a different angle.

The next article takes a phenomenological perspective, focusing on the work of renown animators Quay brothers, and particularly on the use of sound in film and its role in mediating the unconscious. Through a detailed analysis of Quays's first live action film, *Institute Benjamenta*, Martine Huvenne suggests an embodied, prereflective experience of cinema as it is instantiated in the particular film, mainly driven from sound and movement rather than image

– thus destabilizing the usual analytical hierarchy that prioritizes the visual over the auditory in film analysis but also in Western culture more broadly. Film is thus here theoretically approached and – as argued – experienced as a choreography of sonic and visual movements, interweaved in a non-hierarchical way. Listening plays a vital role – guiding attention and creating "spaces from within", spheres connecting characters and expressing emotions, inhabited by the bodies of the audience. Thus "narrative arises" without the use of dialogue or words, and meaning is made pre-verbally as the audience co-creates the film as a synthesis, a com-position of gestures. Huvenne sketches film experience in terms of spatial, dynamic, sonic resonances among animate and inanimate, on-screen and off-screen bodies.

The following article by Jay Hetrick, also focusing on cinema, contributes a philosophical approach to the mediation of the unconscious. It is well-known how Gilles Deleuze is perhaps the founder of what is now called film-philosophy, a philosophical inquiry based on film. In Deleuze's philosophy the unconscious is derived from Leibnizian, rather than Freudian, concepts like the "dark chamber", which enfolds a multitude of things that are not immediately available to conscious perception and which is described, rather cinematically, as a "screen in a dark room". This "dark consciousness", Hetrick explains, is a "non-stratified substance", "a relatively undifferentiated mass" –where images are "formlessness and unrecognizable". Hetrick particularly focuses on film theorist Raymond Bellour, who, influenced by Deleuze, introduced the concept of *entre-images* in order to trace these formless and unrecognizable yet strongly affective images in cinema. Being also significantly inspired by artist Henri Michaux, Bellour configured cinema as a chamber that "reconstructs sensory data" "from the perspective of the body-subject", as the latter is "filled with impersonal and transpersonal affects." Hetrick follows Bellour to further explore the cinema-brain as a system and "place of encounter" of spectator and cinematic images inside the dark chamber of

consciousness, potentially tracing unexpected neuronal paths and creating "aberrant movements" of thought and action.

Lastly, Guido Devadder's, Steven Devleminck's and Roel Vande Winkel's contribution offers a glimpse on how filmmakers and media artists and practitioners potentially engage with psychological as well as philosophical notions of unconscious processes. The article introduces Devadder's practice-based research and his artwork *Hungry Ghost* in particular. The authors' engagement with the notion of the unconscious is pluralistic, drawing on Buddhism (where the "hungry ghost" is a spirit going through many reincarnations in endless suffering, as it does not ever fulfill its greed), as well as on Western philosophy and psychology – from Schopenhauer's notion of the body as objectification of the will, to the Freudian notion of unconscious drives, and philosopher Byung-Chul Han's association of the death drive with capitalism. *Hungry Ghost* is crafted as a hybrid animation-live action remediation of early optical toys such as phenakistiscopes and zoetropes, or indeed a "reincarnation" of these, transferring the same sense of uncanny, and the same spirit of a perpetual quest for the satisfaction of psychic drives. The article offers an appropriate conclusion to an issue devoted to the (re-)mediation of the unconscious as a self-reflexive quest that involves the remediation of cinema itself.

Collectively, the articles in this issue illuminate the diverse ways in which media – ranging from social platforms and VR to narrative cinema and hybrid performance – mediate unconscious and preconscious processes. Moving beyond classical psychoanalytic frameworks, the contributions explore how media forms engage affective habits, perceptual thresholds, embodied metaphors, and immersive states, often operating below or outside conscious awareness. Together, they advance a multifaceted understanding of the unconscious not as a static repository of hidden content, but as a dynamic field shaped by cultural,

technological, and sensory modulations – reconfigured through and within contemporary media experience.

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An Impatience Culture?
Technology, Habits, and the Affective Mind in Contemporary Media Experience

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Abstract

In this article, from the perspective of media theory, I will discuss the often debated issue of impatience, which many commentators identify as a distinctive response mode of our times. I will refer to the contemporary media landscape, which comprises entertaining contents, platforms, AI algorithms, and digital mobile devices; I will regard the widespread content fruition via smartphones as a very significant phenomenon in the present context; and I will focus on the impact of technologies on human affectivity, which allows to understand impatience as a responsive disposition or habit, other than just a common behavior. To understand this impact – which manifests itself, for example, in problematic or addictive internet and smartphone uses, and which may even permeate everyday "offline" interactions – it will be necessary to understand users' experience by considering the ongoing interplay between the different levels of consciousness that characterize it. Drawing on affective, enactive, and embodied neuropsychological and theoretical approaches to the human mind, I propose overcoming an overly rigid distinction between "mindless" versus "mindful" behaviors. Therefore, I will comprehend habits by focusing on the affective mind, which is characterized by its own specific level of instinctual "awareness" – one that lies and swarms below conscious and cognitive awareness, but above the level of generalized arousal or unconscious automatisms.

Keywords: media platforms, attention economy, smartphone addiction, digital habits, affective neuroscience, enactivism

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It is common to read or hear that impatience is a prevailing responsive attitude of our time; nevertheless, there is no univocal definition of it. In the following pages, I will offer some insights to describe and comprehend the complex nature of impatience, here understood as an affective habit that is unreflexively enacted when experiential processes do not flow smoothly. This habitual attitude can be regarded as related to, and reinforced by contemporary media practices. Nevertheless, it tends to persist even when we are not online (Carr), and this reinforces the assumption that contemporary media experience (here understood as the global attitudes and practices induced and made possible by the

internet, AI-based technologies, and social media platforms) may develop into an "impatience culture". Surely, this is not an unintended consequence if we consider that *The Impatience Economy* is the title of a book aimed at social retail marketing professionals (Fabela II). Seen in this light, impatience easily becomes a matter of business, as manifested, for example, in some freemium gameplay experiences in which players seem disposed to pay to reduce the time away from the game (Evans).

Impatience may turn out to be as much a byproduct as a required ingredient in achieving the interests of those delivering entertaining content and services. In other respects, from a psychological perspective, it seems that tendencies such as extraversion and impulsivity are positively related to "social network use disorder" (Sindermann et al.), thus attesting to the efficacy of media platforms' designs and suggesting connections between impatience and problematic uses – impatience being primarily regarded, as will be shown, as a kind of impulsive tendency toward stimulation seeking.

In what follows, I will focus on impatience as an attitude whose implications should be recognized. Impatience is here understood as a habit, namely as a kind of mental disposition toward action. I will mainly refer to an embodied cognition approach, and especially to enactivism and affective neuroscience, to give an account of how human non- or pre-conscious mental life may be exploited by media platforms with an impact on users' expectations and behavior, thus generating habits that affect and are affected by recurring practices. After a short contextualization, I will focus in particular on TikTok's "satisfying" content as an illustrative case to describe some relevant features of the structure of media experience, and I will provide a concise overview of neuropsychological studies on the effects of new technological media. Having thus framed some issues regarding impatience and related implications, I will address habit from an embodied and enactive perspective, and I will propose insights from affective neuroscience to qualify and explain the functioning of

human pre-reflective mental life, paying special attention to the appetitive tendency toward euphoric anticipation and "craving". This latter is an affective, non-voluntary, and "peri-conscious" disposition that media platforms typically exploit and induce, and it can be regarded as a substrate to explain the contemporary propensity to impatience. Ultimately, I offer a conceptualization of media experience as "de-facticized" and impatience-fostering by relying on Han's philosophical theory of entertainment and the de-narrativization of contemporary media culture.

The end of patience?

The issue of widespread "impatience" frequently circulates in the cultural debate on contemporary media experience. It would be relatively easy to enumerate behaviors or feelings corresponding to this broad category; more challenging, as often happens, is to define it more accurately or unambiguously in its general features. The involved affective qualities include impulsiveness, annoyance, and wanting, and the resulting behavioral attitudes lead, for example, to a lack of sustained focalization, unwillingness to wait or prolong experiences, and low tolerance for impediments. I will point out later how impatience can be understood as an affective disposition or habit that may permeate everyday experience, and that is nowadays expanding in relation to common media practices that foster impulses toward immediate rewards.

From a psychological perspective, impatience can be conceived as a personality trait (Schnitker) but also as a kind of reaction to incidents related to the perception of an extension of the time span preceding a desirable event (Geoffard and Luchini), which generates frustration and irritability, together with the urge of "skipping" transitional phases of ongoing actions or events. It will be understood here especially as a category of reactions and as a reiterated style of response that tends to develop into a widespread tendency, independently from deliberate intention and irrespective of what is actually expected.

In his book on AI consequences, psychologist Tomas Chamorro-Premuzic entitled a chapter “The End of Patience” (47-60). According to him, in a context in which emotional intelligence, empathy, or self-control appear increasingly necessary to contain the outcomes of human-technology interactions, patience seems to be a kind of virtue in jeopardy. In what he labels a contemporary “AI age”, moreover, impulsiveness and instinctive responses may be preludes to technological addictions, all the more since AI-based technologies and platforms increasingly tend to make interactions faster and more efficient, thus gratifying users with rapid satisfaction of requests and making self-control efforts almost unnecessary. The behaviors that are associated with this disposition are commonly referred to as “mindless”; we will see, however, that they depend on our “affective mind”, and follow pre-conscious logics that largely rely on the functioning of emotional affects. In this perspective, it is difficult to draw a clear line that separates what is “mindful” from what is “mindless”.

It is not hard to assume that the mix of speed and simplification, coupled with ample opportunities to move elsewhere to find resources, would diminish users’ inclinations to slow down their reactions or accept incidents. A platform such as TikTok uses AI algorithms extensively to engage users in a way that can be regarded as paradigmatic, and which well illustrates the background of media-related impatience. To show how this functions, however, it is necessary to articulate the conceptual transition between the platform’s increasingly pleasurable, bizarre, and sensational recommended content, on the one hand, and the users’ widespread restlessness or drive to displace the focus, on the other.

Satisfying content

In February 2024, the mayor of New York announced a lawsuit against the biggest social media groups of the time, accusing them of contributing to worsening the mental health of younger users, especially by causing compulsive consumption. Among the main media groups accused are platforms such as TikTok, Facebook, Instagram, YouTube, and

Snapchat, which create feeds and features through personalized content via their algorithms, with inevitable manipulative strategies that contribute to the creation of harmful habitual practices (City of New York). Some of the arguments the lawsuit relies on are widespread in current public and academic debates (see, e.g., Rosen), of which they are exemplars to some extent, irrespective of their legal-political implications. Among the often-reported consequences of compulsive media consumption – including depression, anxiety, or impulsiveness – , I will consider diminished attentional capacity and the risks of addiction, which are something more than complications to be placed alongside the others, as they are themselves vehicles for specific discomforts or disorders.

However, let us first see what sort of content we are referring to. If we were to identify distinctive ones, we would be faced with violence, exhibitionism, and fakes, but also with harmless odd content that is sometimes difficult to enjoy, especially by older TikTok users (Marino and Surace). Among the most popular are "satisfying" or "oddly satisfying" videos: bizarre entertainment content, varying in length, in which one sees nothing but (among others) series of cakes being frosted, manipulated slime, shattered glass bottles, bursting balloons making colorful liquids splash, or the toppling of dominos[1]. Their very basic nature allows a sharper consideration of a specific experiential structure, which may be isolated and considered independently of other levels of meaning, as the type of engagement afforded here is more interesting than other aspects of this kind of content. These sometimes carefully designed spectacles reproduce successions of causes and effects, accompanied by salient visual or auditory stimuli, and sometimes initiated or carried out by a human agent. The structure integrates manipulation of materials, sensory stimulation, repetitiveness with micro-variations, and continuity of ongoing processes. Importantly, each typically proceeds

[1] Sometimes these are labelled "ASMR" (referring to the relaxing sensation called "autonomous sensory meridian response") videos, but the categories are distinct, as "satisfying" videos do not produce exclusively relaxing effects, although the two may share similar engagement devices or strategies.

smoothly, adopting a sequential logic with minimal room for unexpected micro-details that elicit a slight sense of anticipation of the outcome, which helps prevent boredom.

This entertaining structure seems to be particularly effective in generating an experiential flow that affects users' concentration and time perception. However, it must be mentioned that this is part of a more comprehensive apparatus that includes smartphone technologies and functionalities, the integrations between apps and platforms, and the interactions between users' routines and an algorithm. TikTok's "For You" feed, indeed, offers an endless series of continuously updated content that is algorithmically selected, and which can be easily replaced by scrolling down, without moving away from the platform. In turn, the experiential flow feeds the algorithm's functionality, which meets the users' needs or preferences by recommending content, sometimes generating loops that increase usage time so that users "seem to be caught in an entertainment spiral" (Qin et al.).

Essentially, this system works well precisely because of a circular logic in which repetitive use and technological optimization mutually feed each other (Zhao). To take over and order our world (Eugeni 13), however, algorithms must intercept the users' minds most vulnerable mechanisms. The latter, as I will illustrate later, are better understood when regarded as pre-reflective, spontaneous, and relatively flexible affective dispositions rather than just as unconscious and rigid automatisms. In other respects, moreover, it will be clear how the nature of human affective life meets, in turn, some crucial necessities of digital platforms – first of all, the necessity of prolonging user experiences without them becoming devoid of entertaining relevance.

The internet, smartphones, and their effects

Paradoxically, in a regime that relies on the exploitation of our limited cognitive abilities to grab attention, and in the face of an enormous amount of information available on a global scale, digital strategies are increasingly taking the form of systematic *distraction* (see

William or, from a different perspective, Pettman). The business model of an "attention economy", in this respect, may provide a frame for understanding contemporary media habits and their implications (see Lane and Atchley) as the update of an earlier process of perceptual fragmentation and reduction of attention, which historically began in the mid-19th century (Crary). In the present, the label refers to the cultural and technological dynamic whereby media offer information and entertainment in exchange for attention (Citton), which has otherwise been more recently intensified by big web companies striving to concentrate wide audiences (Hindman). In this context, companies' search for attention and exploitation of cognitive abilities must come to terms with the short span of time that users are disposed to concede to content and media procedures.

However, even pleasurable experiences such as those mentioned above, which should limit themselves to eliciting surprise or relaxation, can generate an attitude toward repeated enjoyment to the point of losing control of one's own practices and dispositions. What is also at stake in this respect is the impact of platforms and technologies on the brain, which is nowadays a popular research topic. In a recent article entitled "TikTok Brain", for example, the platform is labeled a "dopamine machine" (Jargon), with regard to the distracting effect of gratifying dopamine discharges generated by short videos (I will return to this aspect later). In other respects, it seems that the content recommended by the platform contributes to the activation of the Default Mode Network (DMN),[2] which correlates with a lack of self-control (Su et al.). Moreover, both technological ease and persuasive app design (Chen et al.) contribute to generating smartphone "absent-minded" use, which seems essential in defining criticalities (Marty-Dugas and Smilek; Larsen et al.). None of this implies that the need for escapism that TikTok fulfills, along with its popularity as a "feel good space" and the perceived "familiarity" or "authenticity" of its content, have not had desirable or rewarding

[2] The DMN is a brain network that seems to be activated when a subject is not focused on the surrounding environment, e.g., in mind-wandering (for an updated overview, however, see Menon).

outcomes (Schellewald). From a different perspective, however, familiarity, ease, and convenience of use precisely facilitate the creation of habits that may constitute a root for dependencies or addictions, here understood as radicalized and rigidified habits (Everitt and Robbins; for a distinction between addiction and dependence, from a culturalist perspective, see Paasonen).

Quite often, social media addiction and "endless" or "mindless" scrolling are described in relation to gambling, as the effects of the controlled randomness of recommended or live videos can be compared to those of slot machines or the like (Levounis and Sherer). An important consequence concerns platform and smartphone dependence or addiction, which the more cautious prefer to label as "problematic" or "excessive" use (Panova and Carbonell). Some researchers argue that the use of TikTok specifically increases the indices that qualify smartphone use as problematic (Farzana et al.). Not everyone agrees that these are "addictions" in the strict sense; however, as far as I am concerned here, the "digital addiction metaphor" (Hartogsohn and Vudka) may be a useful frame for suggesting how technologies, social practices, and mental dispositions affect each other and create habitual styles of response.

For its part, neuropsychological research on internet and smartphone dependence keeps identifying problems and suggesting treatments (see Montag and Reuter), the digital impact on human cognition being frequently recognized as a specific behavioral addiction (see Lopez-Fernandez). David N. Greenfield identified the smartphone as a device amplifying digital distractions' effects, and showed that the very same brain circuits are involved in other addictions as well (27-47). According to his research, factors such as easy accessibility, overstimulation, dynamism, perceived anonymity, disinhibition, hypertextuality, and gratuitousness have made the internet an environment in which behaviors inducing compulsive cravings and decreased self-control have been amplified.

What emerges, generally speaking, is that the potential harmful impact of digital life involves negative changes in cognitive abilities due to overuse or overdependence, diminished agency or sense of control, and emotional distress (Lane et al. 191-192; see also Spitzer). As one can imagine, a great amount of research has addressed the consequences of overuse among adolescents and young adults (León Méndez et al.). In this regard, often-mentioned prevention and treatment strategies include mindfulness-based interventions that help foster widely recognized remedies, such as cultivating compassion, increasing consideration of life priorities, and, of course, improving patience (Ting and Chen 215-240).

Everyday cultural practices play a key role in understanding the phenomenon (see Vincent and Haddon), which is also relevant to corporations and content producers who must necessarily update their strategies (Nelson-Field), even as they confront the issue of users' widespread impatience (Bruun). In any case, the basis for many problematic uses seems to be located on the smartphone's capacity to form habits – from the classic "checking habit" (Oulasvirta et al.) to more recent ones, such as the increasing search for immediate rewards (Wilmer and Chein). These can be considered to be of even greater interest than problematic uses (Meier), as they allow for a more specific identification of widespread topics and themes.[3]

Enacting habits

A major issue in the contemporary context lies in the technological impact on mental life, which, as we have seen, is under investigation on both personal/psychological and subpersonal levels. Social, cultural, or philosophical perspectives are also part of such an area of research. In this frame, digital habits turn out to be particularly interesting, as much as disorders or problematic uses, as they impact the unaware everyday practices that permeate

[3] Let us distinguish, however, habit from habituation (see Legrenzi 57-105). Habituation is the automatic tendency of organisms' reactions to fade and disappear as a result of repeated stimulation; habits are behaviors or sequences of gestures that we apprehend and repeat, of which we are initially aware but later tend to lose awareness of. Habits are frequently regarded as results of automatic processes; however, although we know that modifying them requires enormous efforts, they are not automatisms.

an entire culture. For this reason, and given the impact on the users' non-conscious mental lives, I especially refer to neuropsychological studies, understood in the frame of an enactivist and embodied theoretical approach to human cognition. In this perspective, our mental life is regarded as constitutively integrated with the body and emerging from the interaction between organism and natural/cultural environment.

Since the issue of habits is highly complex (see, e.g., Caruana and Testa; Guerra and Piazza), I will limit myself to a few observations. Smartphone-related habits, for example, seem to negatively affect cognitive abilities, including sustained attention, inhibition or delay in gratification, and emotional regulation (Wilmer et al.). Long-term effects are still under-researched (Liebherr et al.), but it is reasonable to assume that as behaviors become habitual, they may affect styles of response that tend to normalize through embodiment and propagate beyond smartphone use. Mobile devices seem designed to become part of users' embodied minds, and users' attachment to them has been rapidly described as a non-conscious bodily process (Cooley). Its specific technological functionality, combined with a variety of social practices and usage styles, has suggested that the smartphone is particularly suited to the creation of habits, to the point that it can be regarded as an integral part of a person, as well as a kind of "transportal home" (Miller et al. 219-227).

Generally speaking, and with the exception of cases in which users are focused on the technological interaction itself, mediation processes typically tend to become imperceptible or irrelevant, thus making users "present" in a space that is remote from their actual environment. More particularly, media psychology shows that the more reliable, individualized, and transparent technologies are, the more our brains tend to incorporate their function as the material scaffolding of our embodied mental lives. Moreover, when dispositions or response patterns are incorporated, they become part of users' sense of agency,

and may tend to replicate even in non-medial contexts, especially when self-contained modes are not necessary (Waterworth and Riva).

A coupling between subject and environment seems to be readily established when the mind-extending technological resources are perceived as reliable, accessible, transparent, and possibly shareable (see Colombetti and Krueger), and this may impact the ability to construct niches that support our embodied, situated, and world-involving cognitive activities (Parisi). From an enactive approach, an organism tends to spontaneously integrate mediating structures to interact and produce meaning. Accordingly, the human mind may spontaneously tend to favor the "transparency" of mediation processes, which is nowadays supported by the elimination or minimization of the users' conscious mind interference pursued by technological systems.

Also, from an enactive perspective, habits can be viewed as "self-sufficient networks of bodily, neural, and interactional processes that become a source of normativity for an agent, such that the preservation of his or her habitual identities guides much of his or her perceptions, thoughts and behaviors" (Ramírez-Vizcaya and Froese 7). Patterns and normative criteria are part of our ongoing sense-making activity, and contribute to making the world more familiar and accessible. In this frame, a bad habit is a construct that may be somehow positive per se, but not necessarily optimal for holistic well-being. It can be viewed as a norm that tends to override other situationally relevant and more appropriate behavioral patterns, thus reducing the range of conduct of interaction (Ramírez-Vizcaya and Froese 8). Addiction, correspondingly, can be regarded as a deep-rooted bad habit that is very difficult to disrupt. For example, there are reasons to believe that the creation of habits, in immediately incentive and rewarding media contexts, conditions our disposition to explore the environment (in order to interact and make sense of it), "fixing" it on behaviors that cause it to lose its intrinsic adaptability (Alcaro, Brennan and Conversi).

Excessive or problematic uses, in short, imply a rigidification of an individual's habitual practices and behaviors. A further consideration in this respect, which I will touch on in the next section, involves the ways in which dispositions fostered through digital life may be regarded as *affective* habits. A remark before proceeding concerns the nature of our affective life: as I am going to assume, it should be regarded in itself not as conscious but pre- or peri-conscious (Panksepp in Gallagher and Shear 113-130), although routinely intertwined with more voluntary, aware, and "mindful" cognitive processes. In other words, what we refer to as the *affective mind* differs from both cognitive unconscious processes and the psychoanalytic unconscious mind, while corresponding to this latter in some respects – which explains my inclination to refer to neuropsychoanalytic perspectives grounded in affective neuroscience findings, in the enactive/embodied approaches that I have assumed as a general frame.

Seeking pleasures

Therefore, a further move to understand impatience is the overcoming of the usual distinction between mindful and mindless behaviors, as the latter can also be regarded as motivated and somehow intentional, even if not in the more common philosophical frame, in which "intentionality" would be equated with "consciousness". A different approach, more focused on the features of human affective life, may allow for a thicker understanding of the widespread behavioral customs favored by contemporary digital habits.

Adam Gazzaley and Larry Rosen's experiments investigated behavior whereby digital users often tend to shift their attention to new sources of information even before they have exhausted the source they have been exploiting (159-179). This attitude can be explained in relation to that which leads some animals to spend only an optimal amount of time around a source of material sustenance, and then to move to another one, which appears sufficiently close and promising. From this perspective, our brain resembles the animal one, as it seems to

consider media sources as resource-laden "environments" whose surroundings demand constant exploration. In humans, as in animals, this would have the advantage of implicitly supporting time optimization; however, when intercepted by new technological devices, it ends up contrasting the desire or ability to linger on a source to complete consumption. If regarded from the perspective of a person's behavior, it is not difficult to describe this spontaneous attitude as "impatient". In the digital experience, according to Gazzeley and Rosen, this attitude is fostered by additional factors, such as boredom, anxiety, reduced metacognition, awareness of the enormous availability of resources, and the "protention" toward us on the part of the technological systems themselves, which interfere with our occupations in a "push" mode through visual, aural, haptic, or kinetic stimulation. Also, for reasons of this kind, one becomes increasingly annoyed, wants to quickly move on to other occupations, and presumably becomes more vulnerable to compulsive behaviors, attention disorders, or social phobias.[4]

What could possibly motivate subjects to interact compulsively but continuously interruptedly with content, platforms, and devices following a behavioral pattern that is clearly *not* optimal? An explanation should acknowledge how animal emotions drive human behavior (see Montag and Davis), and start from the human brain's primary impulse to search for resources, information, and meaning by exploring material, immaterial, or virtual environments. In doing so, I will consider pre-cognitive and affective dispositions, which nevertheless are difficult to describe as "automatic" or "non-conscious" in the more usual sense.

According to Jaak Panksepp, affective experiences are generated through the activation of certain neural systems common to all mammals and located in deep and evolutionarily ancient subcortical regions of the brain (see Panksepp and Biven). Panksepp

[4] These include multitasking and ADHD, but also anxiety (e.g. the CPA, continuous partial attention) or the so-called FoMO (fear of missing out, the fear of missing opportunities for interactions) and nomophobia (no-mobile phobia, namely the extreme worry of not having one's own smartphone available).

described the functioning of these primary circuits and inferred that their activation produces intense action tendencies and raw emotional feelings that in humans are monitored and regulated through connections with more recent, cortical, and "cognitive" brain areas. Corresponding to the activation of these systems is a kind of implicit awareness that emerges from what Panksepp and Biven sometimes call the "mammalian mind", which constitutes the pre- or peri-conscious foundation of our conscious mind.

Since addictions are often understood as alterations of appetitive mechanisms (Sussman), I will focus on the affective experience of "wanting" or "craving" that technological interactions typically induce. Among the primary emotional circuits described in the affective neuroscience approach, the most ancient is probably the "SEEKING system",[5] which drives humans (and mammals in general) to search for survival resources; it makes us sensitive to new or unexpected stimuli, and induces behaviors of exploration and approach. As a primary affective process, the system is anoetic, unaware, "objectless", and independent from voluntary control. It generates raw feelings of wanting, curiosity, interest, and expectation (Wright and Panksepp), which more recent "secondary" processes will direct toward specific objects of the world. It offers nonspecific conative impulses, appetitive and not consummatory, through rapid reorientations of attention accompanied by raw feelings of anticipation of a future reward; for this reason, the SEEKING system is also a possible brain substrate of the Freudian libido, understood not only as sexual energy but as a source of investment directed toward the external world (Alcaro et al.). Additionally, these feelings are accompanied by a particularly gratifying pleasure: indeed, evolution has associated this impulse with a "reward" that operates as an incentive, namely, a euphoric pleasure that is one of the most intense generated by brain activity (Leyton). This gratification is associated with

[5] Panksepp identifies these systems using full capitals, to emphasize that these are primary process circuits common to different species, corresponding to raw feelings and not yet to more elaborated human emotions. The seven systems are SEEKING (expectancy), FEAR (anxiety), RAGE (anger), LUST (sexual excitement), CARE (nurturance), PANIC/GRIEF (sadness), and PLAY (social joy).

the release of dopamine, which is the fundamental mediator of the system, and lies at the core of the anticipatory or euphoric search for “something”.

In this regard, the smartphone, which may trigger compulsive and addictive behaviors, has been defined as “a portable dopamine pump” (D. Greenfield 36). More generally, devices, platforms, and entertaining content aim to absorb us as continuously and completely as possible into an interactive mechanism that we willingly accept and strive for, mainly as it is highly pleasurable in itself. Endless scrolling, for example, is a behavior that manifests a spontaneous tendency of this kind; even other mammals, like humans, gratify themselves by pursuing this anticipatory dopaminergic pleasure as such, regardless of the actual relevance of its object, sometimes by prolonging the seeking activity or purposefully inducing it. Thus, in humans, the SEEKING system soon became “the unacknowledged darling [...] of neuroeconomics” (Panksepp and Biven 143), which precisely exploits the active but nonvoluntary and objectless nature of our primary affective life (see Reuter and Montag), with a special predilection for our appetitive impulses. From this perspective, what we label “impatience” may be described as a generalized desire to move “elsewhere” intertwined with angry feelings evoked by the RAGE system, which is largely provoked by curtailments of our freedom of action.

Personalized, familiar, and appropriately designed digital media experiences, from this perspective, facilitate the activation and maintenance of the dopaminergic SEEKING system (which, not by coincidence, is more often referred to by researchers as the “reward” system). In fact, where feelings exist to guide behaviors in uncertain situations, that affective system generates the only impulse that intentionally tends toward novelty and thus (relative) uncertainty, albeit in contexts perceived as nonthreatening, or such that other emotional affects (such as those evoked by the FEAR system) are not prioritized in activation.

In contemporary media experience, this affective system of expectancy, which in itself constitutes a key resource for survival and fuels more intellectual or creative human activities, may develop into a source of vulnerability. It is actually difficult to manage, as it intervenes in maintaining subjects' ability to be spontaneously responsive, engaged, and available – namely, open to the anticipation of "something new" – independently of any other regulatory or focusing activity. Experimental evidence inspired by affective neuroscience confirms that excessive technological usage involves the activation of subcortical primary affective circuits and occurs independently of the subjects' conscious intentions and control abilities (Montag et al.). Contemporary media culture, from this perspective, is not only a culture of empathy or anger; it is also a "seeking" culture, characterized by a widespread prolonged alertness and fueled by a pleasurable feeling of anticipation of "opportunities" that are implicitly assumed to be located "elsewhere".

This pleasurable mixture of alertness, expectation, and exploration is fueled by the activation of emotional primary-process systems, whose pre-cognitive affective levels differ and are autonomous from both generalized arousal and cognitively mediated emotions. Its effects do not fall outside the realm of awareness (indeed, they exist precisely to affect and dispose the subject toward the environment), but nonetheless, they lie below the level of consciousness (in the fullest sense of the term), as they are non-specific and anoetic affective impulses. Their intense but neither voluntary nor sophisticated character makes primary-process emotional affects particularly suited to orienting behaviors and, when repetitive, to generating habitual behavioral patterns – or, as we are going to see, dispositions to affective responses that may be labeled as affective habits.

Digital systems, habits, and the affective mind

Primary-process emotional affects correspond to action tendencies, and their activation further helps explain how gestures and behaviors are part of processes of

embodiment that may lead to the creation of habits. It is therefore important to highlight the enactive, rather than merely reactive, dimension of emotions – which are not so much simple reactions to stimuli, but rather manifest spontaneous inclinations of our organism to make sense through interaction with the environment (Ellis), independently of conscious deliberation and prior to any other cognitive intervention. As mentioned above, emotional affects, constitute a significant part of such pre- or peri-conscious impulses, and it is therefore possible to postulate a basic spontaneous, affective, pre-propositional and pre-individual intentionality at the core of our conscious mental life (Colombetti). Panksepp frequently speaks of pre-reflective "intentions-in-action", which differ from reflective and thought-related "intentions to act", as they manifest an affective intentionality and awareness that fosters a non-voluntary and pre-reflective primary form of sense-making, and concerns the entire organism's relationship with environmental affordances, in a continuous cycle of anticipations and reactions.

In this regard, it is also particularly valuable to refer to theoretical frames that consider the human mind not only as enactive and embodied, but also as intrinsically affective, that is, widely and variously energized by primary process impulses. In the neuropsychoanalytic view of Mark Solms (*The Hidden Spring*), for example, the source of human consciousness reveals itself to be so ancient that it cannot be identified with intelligence. In his view, in line with the affective neuroscience framework, the core of subjective experience and self is unlikely to be generated in the cerebral cortex, as it is primarily subcortical and in itself shared by mammals.

Similarly, according to Antonio Alcaro, it is important to emphasize the distinction between reflective consciousness and pre-cognitive and pre-reflective affectivity, which is immediate but affectively aware and not automatic. Feelings such as euphoric anticipation, as we have seen, are not automatisms; they are dispositions that attribute value and directedness

to the relationship between organism and environment, and that "influence attitudes and thoughts as they constitute the primary vectors of subjective intentionality". This awareness can be described as "a primordial sensibility, [...] a condition of openness to the surrounding environment without attentional focus or deliberate will" (Alcaro 89-90; my translation). Again, affects lie below the more evolved functions of the human mind but above unaware automatisms: affective life may correspond to the level that Wilfred Bion named "protomental", which is distinct from, but typically harmoniously intertwined with, both reflective awareness and unconscious automatisms. [6] This harmony appears to be compromised in mental disorders and addictions of various kinds, as well as in problematic or excessive uses of the internet and smartphones.

Even in entertaining situations, we cannot avoid engaging with environmental stimuli (Alcaro and Panksepp), thus becoming potentially vulnerable. Being part of a shared instinctual and pre-individual structure of the species, our ancient "anoetic affective field" allows digital devices to interact with collectivities of users, almost independently of the individual attitudes that emerge at higher levels of consciousness. If they were to provoke exclusively generalized arousal or non-conscious automatisms, digital systems would not be capable of intercepting the subjective needs and concerns that are typically useful for their functioning. The effective functioning of platforms makes it necessary to facilitate affective activations without reducing them to non-conscious automatisms, which would deprive the interaction of relevance and thus soon disappear from subjective awareness.

[6] Following Alcaro, the protomental level corresponds to an affective mind characterised by a specific anoetic sensibility and intentionality, devoid of content or representations of objects, which, nonetheless, continuously interact with higher forms of consciousness, respectively "ideative" or "noetic" – that is, cognitive-imaginative, characterized by representations that process raw impressions – and "autonoetic" – that is, self-conscious, concerning for example the capacity of perceiving oneself as the subject of an experience (Alcaro 16). This protomental level is not "unconscious" in a cognitivist sense; rather, it corresponds to an affective awareness, with its own instinctuality and rigidity, that is not "automatic" in its functioning. For this reason, various phenomena that psychoanalysis have described as "unconscious" can be ascribed to it. Albeit we do not experience in its pure state the affective anoetic absence of thought, we can often feel the effects of the autonomous emergence of the affective proto-mind – for example, in imbalanced, pathological, or dysfunctional behaviors.

Essentially for these reasons, I considered it more appropriate to focus on this affective, protomental level for a theoretical contribution to how digital systems condition users' behavior, making them eager for salient stimuli and continually projected toward an immediate future. To achieve this, as we have seen, digital platforms must create media environments that are perceived as familiar and not disorienting or undesirable, but that are at the same time filled with situations that generate subtle uncertainty and trigger rapid arousals of pleasurable anticipatory or exploratory activity. In fact, possible unknowns or objectual resistances could involve in the process higher levels of consciousness, which would intervene to articulate differently the more immediate and flowing interactions between users and digital contents, platforms, or devices.

One last observation. If affects are dispositions to interact with the environment, it should also be kept in mind that habits support and orient affectivity, and that the environment plays a role in both fostering habits and shaping feelings. Laura Candiotto and Roberta Dreon have regarded habits' positive role in supporting and orienting human sensibility as relatively flexible instruments of feeling that shape conduct and behavior – specifically, as "ways of selecting stimuli, identifying salient features, moving toward an object of interest, moving away from or toward someone else". From this perspective, their pragmatist notion of "affective habit" emphasizes how affects are "propulsive in involving and favoring relatively regular transactions between agents and their natural as well as culturally shared environments" and how affectivity "gives rise and nourishes more or less standardized practices" or "consolidated ways of facing circumstances" (Candiotto and Dreon).

Impatience may be regarded as a disposition of this type. It is an affective habit that structures the way we react to impediments to the achievement of expected outcomes in ongoing interactions, especially in digital contexts that design experience so as to minimize

impediments and slowdowns. The ways in which we behave in our natural and cultural environments mostly occur affectively/habitually, and this essential, spontaneous interdependence between subject and environment may also contribute to understanding some of the reasons behind technological "excessive uses" or addictions. In other respects, affectivity is not only scaffolded by habits "but it also scaffolds habits". From this perspective, habits are not regarded as "impermeable to cognition", as they are instead modifiable and adaptable according to the situation. In other respects, it is also necessary to note that actions and interactions are typically already embedded in "a specific affective context of practices and meanings that shapes them" (Candiotto and Dreon).

Coda: De-facticizing environments

In these pages, I have focused on some ideas about how digital media make users eager for immediate rewards and, over the longer term, inclined toward impatience. A first step involves content that generates experiences that are in themselves harmless and seemingly unimportant – certainly not dangerous or in need of monitoring, as explicit or fake content can be. However, the most interesting feature of the TikTok experience, based on the functionality of an AI algorithm and enjoyed by scrolling and tapping on smartphones, lies in the fact that it is characterized by a continuous, accident-free experiential flow, fueled by constant small instant gratifications. In the optimal version of such an experience, nothing should obstruct the flow, as any kind of obstacle may become, for users, a hindrance that prevents the prosecution of the interaction, thus undermining the resulting implicit sense of agency – which may easily cause the subject to become frustrated or angry.

In such a context, impatience can be regarded as a disposition to instinctively react to frustration due to accidents or complications that curtail the impulse to act freely. It is characterized by an urge to seek elsewhere, accompanied by subtle discomfort, and it may result in a shifting of attention and a tendency to shorten, or a will to interrupt, what is

perceived as downtime. One can also regard contemporary widespread impatience as a consequence of the increasing availability of the media environments with which we habitually interact – for example in digital entertainment, which beforehand and primarily manifests its character through the design and organization of accident-free experiences, more than through specific genres or types of content.

A philosophical problematization of such a vision of entertainment was proposed by Byung-Chul Han, to whom I will refer to in the conclusion. No longer based on the modernist opposition between work and leisure time, entertainment is nowadays increasingly pervasive and chronic. As such, according to Han, it can be regarded as a paradigmatic structure that aims to alter the way we experience the world by abolishing all superfluous kinds of cognitive effort and, with them, all environmental material and contingent resistance. From this perspective, digital media control feelings by designing experiential patterns that users absorb through physical and psychic channels of pleasure.

Underlying this process, according to a Heideggerian perspective, lies a feeling of "unburdening" that pleasantly distracts, nullifies the intensity of passions, and allows the subject to feel "*at home* […] in the *present* world" (Han, *Good Entertainment* 74, italics in the original). It would be lengthy to discuss in detail this paradoxical ability to connect without passion, or to create belonging without situational rootedness. It is enough to point out that, thus understood, contemporary entertainment is an interactive mechanism that makes subjects, also and especially in their "offline" lives, reluctant to deal with the *facticity* of non-entertaining environments, that is, with the experiential quality that "appears primarily through *gravity*, through the *resistance* of things" (Han, *Good Entertainment* 83, italics in the original), and that media platforms and technologies increasingly tend to weaken in the design of "online" experiences.

Although Han's conclusions are not always entirely convincing, it is important to highlight his idea of entertainment as characterized by relief and the loss of facticity. It seems that the world's facticity, which is necessarily experienced in everyday practices, has increasingly become perceived as an unnecessary obstacle that hinders freedom of action and doesn't make one feel comfortable while interacting with his or her environment. From this perspective, devices are increasingly becoming *informatons*, namely, "informations-processing *actors*" (Han, *Non-Things* 3), capable of acting and reacting by relieving existence of all care and contingencies, thus "de-facticizing" environments. The smartphone is an informaton that makes the world available and easily accessible through the construction of small mediatic niches; it "deprives reality of its character as resistant" (Han, *Non-Things* 22), and it therefore resembles a "narcissistic" or "autistic" object more than a relational one.

Big platforms, TikTok included, take full advantage of, and reinforce, the repetitiveness and compulsion that "characterize our relationship to the smartphone" (Han, *Non-Things* 27); and all this, as we have seen, also impacts how subjects interact with the world in their offline experiences. This is a crucial point in comprehending impatience: "Heidegger's idea of 'facticity' expresses the fact that human existence is based on the non-available. […] The digital order […] does not tolerate any non-available ground of being" (Han, *Non-Things* 4). Within such a Heideggerian phenomenology, the affective root of impatience can be described as the frustrating feeling of the non-availability of the world that follows the habitual availability of things and opportunities made possible in digital entertaining experiences. This, in turn, makes subjects, even when they are not "users", progressively unavailable for interactions with resistant environments. In this regard, impatience involves unavailability.

Whenever an environment (medial or not) exhibits traits of resistance to our intentions, needs, or concerns, we may become impatient, and presumably every accident will

be able to generate frustration, much more so as we have been habituated to experiential processes that flow facilitated by a generalized accessibility of resources and ease of interaction. TikTok's "satisfying" videos can be regarded as paradigmatic products of such a condition precisely because, regardless of the relaxing function they seem to provide, they are emblematic of the smoothness, continuity, repetitiveness, addictiveness, effectiveness, and immediate pleasantness that characterize the digital entertaining experience of de-facticized environments. If this is true, it seems that the "ideology of ease" (Dilger) is still dominant, that the smartphone may still be regarded as "the signature artifact of our age" (A. Greenfield 13), as it establishes the order of what is habitual and desirable, and that its malleability may be well summarized in the notion of "perpetual opportunism" (Miller et al. 103-132).

It is challenging to determine or imagine what can be done to dishabituate or contain the habitual responses that can emerge from this state of affairs. Again drawing on Han's ideas (*The Crisis of Narration*), smartphones, AI technologies, and platforms offer experiences that are non-narratively structured – as typical features of contemporary entertainment instead consist of additivity, accumulation, immediacy, and progression, which outline experiential structures that are devoid of articulation and conclusion. From this perspective, narrative practices, if recursively and extensively experienced, can habituate our affective minds in different ways. If this were the case, exposing oneself to narrative experiences, whether literary or audiovisual, could function as a kind of rebalancing practice. This would also imply a need to expand, refocus, and re-habituate one's emotional repertoire, and learn to connect and hierarchize events that are not all located on the same level of significance, that evolve over time, and that in being articulated become differently charged with value. Finally, it would mean reorganizing crucial features of identity by intervening in the digital constitution of self (see Elliott 78-105), and by rebalancing the weight and meaning of affectivity so as to regulate its effects and dispose us differently toward the

environment we interact with, thus making our pre-reflective emotional life a source of experiential worth and density instead of merely impoverishment and vulnerability.

Furthermore, narratives are not merely logical-causal structures that organize and hierarchize series of events. They should also be considered emotional modulators and facilitators of empathy, and as such, they can serve as antidotes to the contemporary widespread inclination toward self-centered experiences. There is no need to demonize the nonvoluntary, noncontrollable, and "mindless" affective dimensions of our mental life, although it is important to be aware of the logics of their functioning. Affective life shapes habits, but the other way around is also true. As they are not unconscious automatisms, affects are sufficiently adaptive. It is especially necessary to prevent their rigidification in practices that tend to become automatisms, and this can be accomplished through developing good habits.

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Is Dream Still Unconscious?
Imaginary Immersivity and Dream Machines in Contemporary Visual Episteme

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Abstract

The article assumes the existence of a mutual cultural influence between the technologies circulating in a given context, the forms and strategies by which dreaming is visually and narratively encoded in the media, and contemporary scientific theories of dreaming. From this perspective, I investigate an epistemological fracture that emerges in contemporary cognitive theories of dreaming: one that sees the dream no longer as unconscious, but as a conscious model of the world acting offline rather than online. In these theories, the conscious character of the dream experience is exemplified precisely by the idea of a "virtual reality" acting inside the brain, capable of optimizing our relationship with the world through a precise training that takes place in a safe space. From this acknowledgment, the influences of these theories are considered in the complex narrative structures (often related to the puzzle movie form) that characterize contemporary films centered on the hybridization between dream and virtual reality. These are often exemplified by the idea of a "dream machine" that allows multiple users to access a single dream space, as happens in *Paprika* (Satoshi Kon, 2006), a film centered on an imaginary device that allows psychotherapists to enter the dreams of their patients.

Keywords: contemporary dream theory, immersive media, complex narratives, virtual reality

Rewatching a dream

Investigator Kunakawa and Paprika, a young psychoanalyst with undoubtedly original methods, are reviewing on a laptop computer resting on the bed several sequences from a dream "made" by the investigator. A hook-shaped device equipped with four mechanical fingers worn on the head of both patient and therapist during the former's sleep, the DCmini, allows Paprika not only to access the dream content but also to actively participate in it. In the dream, we see Kunakawa engaged in a manhunt, which is, however, hindered by a continuous transformation of the setting: from the initial circus we move to a jungle in which the investigator and Paprika dangle like Tarzan and Jane, then to a speeding train in which Kunakawa is in danger of being strangled by a hitman, after to a photo shoot,

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and finally to a hotel corridor in which a mysterious murder is witnessed. The chase ends with the liquefaction of any space to stand on and the plummeting toward awakening.

The DCmini is defined by Paprika as the scientific key to access dreams; a program similar to digital editing software allows one to rewind its content, linger on details that had escaped, and interrogate its meaning. The dream itself requires this precisely because of its narrative complexity: we are immersed *in medias res* within a layered and unstable narrative world in which the focus of attention is compromised and almost absent. A dream machine makes it possible to consciously interrogate every detail: Paprika herself freezes the image of a magician who appeared in the first scene, interrogating his identity.

If we consider the features of this imaginary medium,[1] we can see how it adheres to the body, and how it positions the viewer at the center of an environmental image rather than in front of a two-dimensional surface. It is ultimately a virtual reality device: immersive, interactive, embedded and wearable. The dream narrative to which the device provides access is not unlike the experience the viewer is called upon to have vis-à-vis a film such as *Paprika* (Satoshi Kon): a postmodern complex narrative, or to use the terminology inaugurated by Warren Buckland, a *puzzle film* in which one must piece together scattered and fragmentary information by relying on unstable or unreliable points of view. As Jason Mittell has noted in relation to the complex storytelling of American contemporary television, this is a narrative form made possible precisely by new technological revolutions such as the advent of first VHS and then DVD, which allow one to dwell on details and rewind the flow of the story just as Paprika and Konakawa do in the film, as well as by new spectatorial practices such as binge watching.

The imaginary medium thus shows us the possibility of full conscious access to the dream world, which, however, remains intricate and enigmatic. But how can the visual repre-

[1] Archaeological media investigation of imaginary media found in literature and visual arts is the focus of Kluitenberg, *The Book of Imaginary Media*.

sentation of the dream truly resemble its real referent? Dream is an experience enshrined in the secret inner world of each individual; yet, in the history of cinema and the visual arts there have been no shortages of representations that we identify as dreamlike. A series of visual and narrative codes thus make this recognition possible; by analyzing them, we can also understand how the dream itself, as Walter Benjamin first noted in the short essay "Dream Kitsch", possesses a historicity, that is, it is affected in its collective conceptualization by the cultural and technological horizon in which it is thought.

If we consider our initial example, the conscious and narratively complex dream of Satoshi Kon's film exemplified by a wearable and immersive device, one may wonder how it is affected by contemporary conceptions of dreaming, and even how these conceptions are related to the increasing commercialization of virtual reality devices.

Indeed, if we consider other historical junctures, we can see how the technologies and media which circulate in a specific historical horizon have always influenced the conception of dreaming in some way: the nineteenth century rudimentary pre-Freudian researches of Alfred Maury and Hervey de Saint-Denys described dreaming through the exemplifications of the moving panorama and of the phantasmagoria; Bergson also takes up the metaphor of the moving panorama in a 1901 conference on dreaming, but uses it together with that of the newly invented cinematograph. Virtual reality, by virtue of its power of simulation, is a trope that can be found in several neuroscientific and neuro-phenomenological theories spread from the 1980s onwards. These are theories of dreaming that radically cut ties with the psychoanalytic conception that dominated the episteme of the twentieth century, questioning above all the function of dreaming in an evolutionary sense, considering the dream state as aiming to develop useful cognitive abilities during wakefulness. I will analyze some of these theories, asking what ruptures the exemplification of virtual reality introduces into the conception of the dream compared to the past and how this new conception also influences con-

temporary cinematic representation of the dream itself. In doing so, I will consider theories of dreaming as opaque objects, discursive formations to be interrogated not so much as revealing an ontological truth about the reality of dreaming, but as symptoms of the way in which the entanglement between mind and media technologies is configured today. It will thus be a matter of carrying out an archaeological investigation, aimed at identifying the emergence of a new conception of the dreaming self within a radical epistemological rupture, but with the contemporary horizon as the field of analysis rather than the past.

Brain simulators

The greatest rift in contemporary theories of dreaming fundamentally concerns its relationship to the unconscious. If, in Freud's canonical theory, dreams represent an expression of the contents removed in the unconscious and translated by dreamwork, for several contemporary neuroscientific and neuro-phenomenological theories dreams would rather represent peculiar forms of consciousness. According to John Allan Hobson, among the most influential scholars of dreaming from a neurophysiological perspective, consciousness consists of the ability to create models of the world and produce inferences. From this point of view, waking and dream consciousness would not be so different: in both cases there is no direct contact with the world, but with virtual realities that serve as generative or predictive models of the world. The real difference would consist in the fact that dreaming "reveals consciousness in a very special, pure, and isolated form" (Hobson et al. 1), since it would free it from the need to be constantly updated by information picked up by the senses. From Hobson's perspective, the virtual reality experienced in the dream constitutes a proto-consciousness, where the subject perceives him or herself as an agent and preserves his or her individuality in a protected and preparatory space with respect to the impact of the outside world (Hobson). If we consider these virtual realities produced by the brain – both in sleep and wakefulness –

in the form of generative and predictive models, their main characteristic is complexity. That is, "complexity reflects the degrees of freedom – or numbers of parameters – that are required to provide an accurate prediction of sensory data" (Hobson et al. 6). It should be noted that the concept of *degrees of freedom* also constitutes one of the central elements related to virtual reality experiences (see Chandrasekera et al.). The concept denotes the user's ability to move and orient within a three-dimensional space: three degrees of freedom correspond to horizontal and vertical translation and the ability to rotate around one's own axis; six degrees of freedom allow for both translation and rotation along three perpendicular axes. Hobson's use of this concept to define the virtual reality of consciousness, on the other hand, implies an idea of narrative complexity, related to a model's ability to predict the occurrence of events based on probability criteria contained within it. Dreams that take place during the REM (Rapid Eye Movement) phase, precisely because they are not constantly updated by contact with the outside world, would serve to minimize this complexity, reducing synaptic connections and allowing for both greater statistical efficiency in predictions and less energy consumption in the organism. Practically, the function of dream consciousness is that of a psychophysiological Occam's razor: "Technically speaking, complexity is measured as the difference between prior beliefs (expressed as a probability distribution) and posterior beliefs – after the prior beliefs have been updated on observing sensory outcomes." (Hobson et al. 7) It remains to be understood why the dream remains so bizarre, characterized as it is by continuous jumps of scenery (well exemplified by *Paprika* as sudden changes of film genre). Hobson's answer is that complexity constitutes a feature of the model, not of the inferences provided by the model. The model is complex when, through a process of reduction of synaptic connections, it "enables efficient inferences about a greater diversity of sensory scenarios – scenarios that may be rehearsed during dreaming." (7)

The idea of the dream as a conscious experience is exemplified through the analogy with the medium of virtual reality. From a neurophenomenological perspective, Jennifer Windt and Thomas Metzinger wonder by what criteria a dream may or may not be considered a conscious experience. In this perspective, they equate a minimal notion of consciousness with a metaphoric model corresponding to a virtual reality system that satisfies three main criteria: *globality*, since it activates a global model of reality; *presentationality*, or integration of this model within a virtual window of presence; and *transparency*, which is given when this model of reality is not recognized as an unreal by the subject but experienced as an immediate datum of reality. These criteria are as valid for dreaming as for waking; according to the two philosophers, "dreams usually integrate several different types of imagery into a complex, multimodal, and sequentially organized model of the world" (Windt and Metzinger 195). The only difference is that in the case of waking this virtual reality is activated online, receiving input and producing output about the external world. In contrast, the dream acts as an offline virtual reality, taking shape in a separate and disconnected space. Although some external sensory input may be integrated within the dream narrative – typically the sound of the alarm clock – these instances represent exceptions of a general functioning based on the isolation of the dreaming subject.

However, it again becomes important to understand why dream consciousness remains so bizarre, characterized by "discontinuous jumps in the dream narrative." (206). The question is about the possibility of finding a meaning starting from the scattered and random character of dream images; but the old idea of the interpretation of dreams is approached in a new epistemological paradigm that integrates neuroscientific experiments – unabashedly, for Metzinger and Windt "the epistemological status of psychoanalysis resembles that of religion." (207). The solution found by the two scholars concerns the idea of a complex narrative structure unfolding within the virtual model:

> In a way, dreams can be regarded as high-dimensional Rorschach tests, during the course of which the dreaming self assembles self-generated, random figures in a complex narrative, transforming them into an "internal fairytale." This fairytale, as a chain of concrete subjective experiences, is constrained both by the current configuration of the system, continuously trying to settle into a stable state, and by its history, the way in which it usually interprets the world. (Metzinger and Windt 207)

This narrative is thus partly meaningless, since it consists of internal neurodynamics, and partly related to a process of self-representation, since these selfsame internal inputs are interpreted on the basis of past experiences and memories.

Finally, the idea of the dream as an offline virtual reality capable of handling the complexity of the existing one/reality in a predictive sense is at the center of some of the theories advanced by neuroscientist Antti Revonsuo, who identifies the dream with a simulator which enhances abilities and skills. Together with Katja Valli, Revonsuo first elaborated the *threat simulation theory*, which views dreaming as specifically oriented toward the simulation of potentially threatening events and the refinement of survival skills (Valli and Revonsuo), and later the *social simulation theory,* which considers the interactions taking place in dreams as a rehearsal of social perception and recognition (Revonsuo et al.). In this latter paradigm, the technological metaphor of virtual reality focuses primarily on the concept of the avatar, defined as a virtual character which embodies the role of an existing subject within the simulated reality of the dream. The dream is then configured as an artificial universe geared toward managing complexity and achieving success in the real world.

Postmodern imagery and the dream machine

The epistemological rupture exemplified, in the history of dream theories, by the recurrence of the metaphor of virtual reality thus leads one to consider a parallelism between,

on the one hand, the new conception of the dream and that of media in general, and, on the other hand, the dream narrative and the narrative complexity that characterizes dream-centered film narratives. In the first case, it is a matter of considering the dream as a media device capable of handling the complexity of the real in a separate and safe space; in the second case, we can consider this same complexity as a key to understanding a rupture present as much in the history of the theoretical interpretation of dreams as in that of contemporary and postmodern cinema.

Regarding the ability that the dream exhibits in managing complexity in an offline model, I think of how this current idea in dream epistemology adheres to a structural feature of different media exemplified by Francesco Casetti in the concept of the "projection/protection complex". Casetti contrasts the McLuhanian conception of media as "extensions of man" with the idea of a protective function of media, characterized by a double movement. On the one hand, it is essential to manage and reduce the complexity of the world in a separate techno-aesthetic space, whose optical-spatial dimension can be found in devices belonging to different epistemes, from the 19th century Phantasmagoria to the 20th century cinema halls to, nowadays, digital bubbles such as the teleconferencing platforms spread during the Covid19 Pandemic. On the other hand, in these devices the subject can reconnect with the world, if in a safe, immunized, and controlled space. From my point of view, the idea of dream as a virtual reality simulator which acts offline to make the relationship with reality more efficient adheres completely to this projective/protective conception of media devices analyzed by Casetti.

Instead, let me consider narrative complexity and its serving as a pivotal element of both today's neuroscientific theories of dreaming and narratological analyses of postmodern cinema. In several movies, this complexity is exemplified by the recurrence of a precise element, of which one declination is the DCmini in Satoshi Kon's *Paprika*. It is the dream

machine. It is a device that serves as the driving force behind several narratives in postmodern cinema centered on the relationship between dreams and technology. The dream machine can record the dream content, externalize it in the form of a collectively experienceable image, or allow access to the dream narrative as if it were a concrete, inhabitable space. The dream machine evokes the tradition of the cyberpunk imagery inaugurated by science fiction writer William Gibson in *Neuromancer*, in which virtual space is represented in the psychic and simulacral terms of "a consensual hallucination experienced daily by billions of legitimate operators", although it does not present a one-size-fits-all aspect. In Wim Wender's *Until the End of the World* it takes the form of a silver metal mask that does not relay images but rather records them; in David Cronenberg's *eXistenZ* it is a pulsing, organic mouse to be introduced to a bioport surgically opened on the user's back; in Christopher Nolan's *Inception* it becomes a briefcase with timers to which several users connect – not to mention *Paprika*'s DCmini described earlier. Despite such a variety of representations, one point that unites all these machines is the immediacy with which the user finds himself immersed in the dream world. It is a situation in which the protagonist discovers himself, *in medias res*, surrounded by a simulation of which he or she knows neither the beginning nor the way out (see Kilroe). Identifying the surrounding world as a dream then becomes the start of a complex process of narrative reconstruction.

The user of the dream machine reflects the idea of a new condition of spectatorship and interpretation of the narrative content. The spread of this representation coincides with the emergence since the 1990s of the aforementioned paradigm of narrative complexity in cinema and television seriality (see Grishakova and Poulaki). This pattern applies to narratives that require the viewer to play an active role in reconstructing the course of events, presented in a nonlinear form, and interwoven in deliberately intricate and even inextricable ways. Not infrequently, the reconstruction of the diegesis is further complicated by

identification with the point of view of alienated or cognitively impaired characters (hallucinated, toxic, insane, or, indeed, dreamers).

The dream machine then presents itself as a device whose place in the narrative is hopelessly ambiguous: while it appears as an object internal to the complex diegesis, it also represents the cause of its explosion, elusiveness, and entanglement. The editing is disrupted and reorganized by its presence, with temporalities that take on the nonlinear form of dreaming – as in Alejandro Amenabar's *Abre los Ojos*, where the course of events can only be reconstructed through the identification of a suture between the real time of life and the otherworldly, phantasmatic time of an artificial post-mortem dream – or they lose all logic by transmuting into pure optical and sonic streams – as is the case with the low-definition dreams of *Until the End of the World*.

This narrative disruption may also be related to the tension that runs through postmodern cinema itself toward forms of entertainment inferred from the advent of new media. This can be found in visual and aural gimmicks that Laurent Jullier has identified as "figures of immersion", such as the use of the camera *travelling*, apt to transform fruition into the pyrotechnics of a sensory bath; the demand for spectator's interactivity in the reconstruction of the plot; the production of new intensities through the reorganization of the sensible in an affective sense (see Shaviro).

In visual narratives configured in this way, the dream universe itself appears to be inhabited by external technological grafts, as was already evident in Ridley Scott's *Blade Runner* Final Cut, in which the correspondence between the dream vision of a unicorn and its external fabrication in the form of origami suggests the presence of a programmed, posthuman mind (see Landsberg). Other dream grafts are the prosthetic memories designed for blind people in *Until the End of the World*, and, in an even more articulate form, the *post-mortem* simulation of *Obre los Ojos* (and its American remake *Vanilla Sky*), where the

cryogenized corpses of Life Extension agency clients can experience an idealized and designed eternity in the form of a programmed dream. An inverted version of *Blade Runner*, in which the humanity of free will is grafted into machine consciousness in the form of a *rêverie*, is represented by the television series *Westworld*, inspired by Michael Chricton's film of the same name, and dedicated to a simulacral amusement park devoted to the Old West where visitors can unleash their baser instincts on robots totally indistinguishable from humans (see Erwin). In an article about *Inception*, Mark Fisher points out how the multi-layered space of the dream, partly designed by the architect Ariadne, is visualized in the film as an "unconscious without surrealism", whose aesthetics approximate "a Powerpoint presentation of a love affair", (40) as well as the subterranean of a mind that appears largely colonized by economic and military relationships. This process of colonization also echoes the idea advanced by Jonathan Crary that sleep time constitutes the last fortress whose conquest capitalism has claimed and achieved, transforming even the dream into a mediatized environment inhabited by job efficiency and financial exchanges.

It is possible then to identify the reasons why in both today's theories of dreaming and the narratological theories concerning puzzle films (often centered on the functions of a dream machine), the same pattern imposes itself. Contemporary neuroscientific theories, by identifying the dream with a virtual device aimed at managing and reducing complexity or handling unpredictability, appear as the product of a late-capitalist society in which strategies of power have become increasingly pervasive and uncontrollable, and where it becomes urgent to assume new survival skills. This training function appears completely analogous to that immunization power that Walter Benjamin recognized in cinema precisely as the collective externalization of the previously exclusively individual dimensions of dream and hallucination. For the German philosopher, media, while leading to mass psychosis, are also its remedy, "by means of certain films in which the forced development

of sadistic fantasies or masochistic delusions can prevent their natural and dangerous maturation in the masses" (*The Work of Art* 38). In his latest work, Thomas Elsaesser has considered puzzle movies themselves, which he has called "mind-game films" by virtue of their experiential contiguity with video-game structures, in the same way as a "pharmakon" (in the ambiguous sense of both poison and remedy) that allows on the one hand to develop a not exclusively individual but distributed idea of agency, and on the other hand to train new survival skills to deal with the complexities of today's "control societies" (Elsaesser follows Foucault and Deleuze on this term). Among the tools employed to reach this goal, a quite peculiar role is played by "productive pathologies" (the altered states of consciousness of schizophrenics, paranoids, hallucinated, that drive the narrative path) which "in mind-game films often have an enabling and empowering function, precisely because they can sustain contradiction" (286).

The neuroscientific theories of Hobson, Revonsuo and Valli, Windt and Metzinger not only identify the most common and universal of altered states of consciousness, the dream, with a new media device (no longer cinema but virtual reality) but reiterate how the dream function for them is no longer a way of accessing the unconscious, but mostly a constructed separate space in which to simulate various training processes in the most effective and conscious way. This idea of the dream-state, however, shows an inherent ambiguity: while the training that takes place within it offers the opportunity to develop functional strategies of resistance, it is also clear that late capitalism has also left its deepest imprint on an idea of subjectivity that is called upon to be efficient and productive during dreams in the same way as in the waking life. We can no longer relax even when we sleep.

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The Politics of Plot Twists: Cognition, Culture, and the Convention of Mental Illness

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Abstract

Plot twists have long become a mainstream mainstay, losing much of their ability to truly surprise audiences. A prevalent tendency in plot-twist films is to pit diegetic reality against protagonists' subjective perspective as affected by a mental illness, connecting neurodiversity with (narrative) unreliability. This essay offers three alternative readings of this conventionalized type of twist films with a neuro-non-normative protagonist: as mediations of the fictional unconscious, as mediations of viewers' unconscious, and as remediations of the role of mental illness. Drawing on cognitive film theory, the essay illustrates these readings using Joe Wright's *The Woman in the Window* (2018), whose surprising twist is that the protagonist does not have a mental illness. Subverting the convention of the unreliable, neuro-non-normative narrator, the essay argues that the film invites viewers to reflect on and question their own involvement in the (re)construction of narrative unreliability.

Keywords: plot twist, unreliable narration, mental illness, cognitive film studies, value regimes, *The Woman in the Window*

Conventions are helpful tools for filmmakers to produce a certain effect in audiences, while also serving as orientational aids for viewers' meaning-making efforts. Based on quotidian perceptual and mental processes and folk psychology, conventions are said to make "such perfect and comfortable sense" that they deny "the need for any further interrogation" (Fiske 38). Though naturalized, conventions are far from neutral. Like any other form of norm-bound practice, they are entangled with ideological notions that are rarely questioned. Plot twists occupy a peculiar place in this. Their narrative premise is born out of the subversion of storytelling conventions, having viewers believe that they are watching a classical narrative only to reveal that it has been but the protagonist's unreliable version of events. What should incite reflection on the conventions that usually guide viewers' meaning-making efforts has become conventionalized in its own right. More than that, plot-twist films are a prime example of the ideological biases intrinsic to any form

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of convention. Ever since Robert Wiene's German silent film *Das Cabinet des Dr. Caligari* (1920), a prevalent tendency in plot-twist films is to motivate the figurative twisting of the plot by a character's non-normative mental state, thereby associating mental illness with (narrative) unreliability.

The aim of this essay is not to echo critiques that see plot-twist films as perpetuating stereotypical and stigmatizing notions of mental illness of the unpredictable and dangerous Other (Ferenz; Rovito; see also Klecker; Sibielski). Indeed, I see the bad reputation that precedes these films to fall short on describing their potential cultural-cognitive effects on viewers. Zeroing in on these effects, this essay's main argument is that subverting the conventionalized conception of characters with a mental illness as unreliable invites viewers to reflect on the cognitive underpinnings of their interpretation.

To illustrate this, the essay is divided into three sections, each adopting a different perspective on plot-twist films. The first section follows most scholars in understanding twist films as a mediation of the "fictional unconscious" by focusing on the tight connection between film form, narrative situation, and representations of mental illness. With the term "fictional unconscious", I describe protagonists' subjective worldviews which differ from those of other characters and reflect their states of mind. In twist films, these are primarily interpreted as pathological to naturalize plays on and deviations from classical narrative structures. This interpretive stance, however, communicates more than a play on narrative perspectives by denying characters any claim to (narrative) reliability. The second section understands plot-twist films as mediations of viewers' unconscious. Rather than reflecting protagonists' non-normative worldview, this approach highlights how twist films harness viewers' automated and enculturated cognitive processes and generic expectations that prime them to frame characters as unreliable. Last, the third section centers on the effect that

playing with viewers' enculturated tendency of associating neuro-non-normativity[1] with narrative unreliability can have on their understanding of mental illness. I illustrate these three perspectives in a reading of Joe Wright's *The Woman in the Window* (2021), shortened to *TWitW* in the following, whose plot twist is that the protagonist does *not* have a mental illness.

Mediating the Fictional Unconscious: Plot-Twist Films as Clinical Case Studies

TWitW is not an outstanding film. I do not intend this to be a value statement but a comparative one: The film does not stand out from other plot-twist films that have come to populate cinemas since the turn of the century. It follows former child psychologist Anna Fox (Amy Adams), who is unable to step outside her home because of an anxiety disorder known as agoraphobia, the fear of leaving one's known environment. She has been in therapy and takes medication when the film sets in. The plot focuses on one week in Anna's life, during which the Russell family moves in across the street, an event that she has been following for weeks from her bedroom window. Each family member turns up at her doorstep one by one, and she senses tensions between Alistair (Gary Oldman), Jane (Julianne Moore), and their son Ethan (Fred Hechinger). Anna's latent suspicion becomes a cruel reality when she witnesses the bloody murder of Jane in the Russell family home through her reflex camera. To her surprise, the arriving detectives assure her that no one has been hurt and present to her the very-much-alive Jane Russell (Jennifer Jason Leigh). This is however not the woman Anna got to know. From Ethan, she learned of his father's rough parenting and suspects Alistair to have lost his temper with his wife. Anna immerses herself in private investigations

[1] I use the term "neuro-non-normativity" to describe mental states that are perceived to fall outside a culturally perceived norm of mental health, including psychopathological states. In using this term, I want to avoid pathologizing characters' mental states, while pointing out that their lived experiences are framed as non-normative in cultural discourse. I use the term "mental illness" when referring specifically to the cultural discourse of mental diseases and disorders, that is, the narratives, images, and tropes associated with neuro-non-normativity.

but to no avail. When she presents her evidence to the detectives and confronts Alistair Russell, they remind her of the heavy medication she is taking that can cause hallucinations. She wishes for her husband to be there to back her up, and the detectives are quick to jog her memory once more: Her husband and daughter have died in a car accident for which Anna has been responsible.

Many aspects of this synopsis will sound oddly familiar. We are well acquainted with the psychologist-as-protagonist from Fritz Lang's noir classic and name twin *The Woman in the Window* (1944) and M. Night Shyamalan's *The Sixth Sense* (1999). We know of the many mental conditions that affect the lives of protagonists, such as schizophrenia in David Fincher's *Fight Club* (1999), Ron Howard's *A Beautiful Mind* (2000), anterograde amnesia in Christopher Nolan's *Memento* (2000), or delusional disorder in Martin Scorsese's *Shutter Island* (2010). We are familiar with protagonists' private investigations and fabricated evidence that only make sense to them, as in *Memento* and Joel Schumacher's *The Number 23* (2007). We have watched characters work through trauma, guilt, and grief, the realization of which comes as a shocking surprise to protagonists and viewers alike, as is the case in *The Number 23*, Brad Anderson's *The Machinist* (2004) and *Fractured* (2019), or Alejandro Amenábar's *Regression* (2015). Conversant with these narrative twists and turns that pit protagonists' subjective truths against diegetic reality, the revelation of Anna's unreliability will hardly come as a surprise to viewers but more as a completion of a well-known narrative pattern.

Films that feature a protagonist whose neuro-non-normativity is disclosed in a surprising twist fare under several names, ranging from "deceptive unreliability" (Kiss and Willemsen), "mind-tricking narratives" (Klecker), and "mind-game films" (Elsaesser), to simply "unreliable narration" (Leiendecker "Leaving"; Laass). In this essay, I refer to these productions plainly as plot twists or twist films. I do so in an effort to focus on the structural

characteristics of these films – the figurative twisting of the plot – and not impose an interpretation of its effects on audiences from the get-go (as is arguably the case in the adjectives of "deceptive" and "mind-tricking"). Additionally, I wish to avoid linking plot-twist films, the representation of mental illness, and narrative unreliability, three different concepts and levels of analysis often conflated or used to explain one as a result of the other.[2]

While not all plot twists base their surprising revelation on a protagonist's unreliability as a consequence of a mental illness, the tendency has become a mainstream mainstay, especially around the turn of the twenty-first century (Conway 56; Goodwin 225). After Wiene's *Das Cabinet des Dr. Caligari* (1920), which marks the first use of mental-illness-as-twist, Fincher's *Fight Club* has established a "blueprint" for the surge of similar-enough twist films between 2000 and 2010 (Leiendecker, "Taking" 199), such as Brad Anderson's *Session 9* (2001), James Mangold's *Identity* (2003), David Koepp's *Secret Window* (2004), John Polson's *Hide and Seek* (2005), and Bruce A. Evans's *Mr. Brooks* (2007). Using mental illness as a motivation for plot twists is not just a Western phenomenon, as Satoshi Kon's anime *Perfect Blue* (1997), which even predates the US American blueprint of *Fight Club*, shows. Additionally, television shows like Sam Esmail's *Mr. Robot* (2015–2019) attest to the enduring appeal of the plot-twist formula.

Noting the same tendency, Thomas Elsaesser introduces the concept of "productive pathologies" (97) to describe protagonists' non-normative mental state as an adaptation to "our contemporary network society" (99). To Elsaesser, these protagonists are not non-normative in the sense of being pathological. Rather, they have adapted to the uncertainty provoked by an increasingly complex and fragmented world, "recalibrating the mind-body relations and acknowledging crises of agency" (271). Contrary to cultural discourses that still

[2] See Mildorf for a detailed discussion of the relation between mental illness, narrative unreliability, and fiction.

frame protagonists with a mental illness as non-normative, Elsaesser argues that productive pathologies in mind-game films present us with the "the new normal" (64).

In plot-twist films, this positive reframing of non-normative mental states is still largely absent. Here, I see Elsaesser's use of "productive" to apply to the world of filmmaking, where non-normative mental states are used to generate new, suspenseful, and surprising stories. In this framework, protagonists' pathological mental states and tropes of mental illness are "productive" in the sense of offering a plausible "motivation" for telling engaging and surprising stories (Klecker 133).

Next to offering a plausible motivation for plot development, suggesting that the protagonist experiences (symptoms of) mental illness also allows experimentations in style and narration. Pitting the non-normative subjective perspective of characters against an objective and neuro-normative diegetic reality, Cornelia Klecker describes plot twists as having a "double structure" (138) that allows for a "double reading" (139). For this double structure to work and for the twist to have a surprising effect, films must first make viewers believe that they are watching yet another conventional Hollywood production. This first structure is based upon principles of classical storytelling that harness viewers' "standard and natural mode" of making fictional films make sense (Hven 54). This structure focuses viewers' attention on incrementally constructing a linear, causal, and coherent narrative that has them overlook the second structure, "another fabula running parallel to the first one, but 'beneath' it, hidden from view" (Lavik 56). The twist, usually staged late in the narrative to maximize its effect on audiences, reveals vital story information that retrospectively recenters viewers' understanding of the story they have been watching.

In the framework of the conventionalized plot-twist blueprint, the first structure, which viewers have taken to be diegetic reality for the longest time, reflects protagonists' subjective perspective as inflected by their non-normative mental state. When this is

disclosed, viewers do not just recenter their interpretive stance toward the narrative but also retrospectively reevaluate their understanding of the protagonist-as-person. Parallel to the narrative structure straying from viewers' "natural mode" of engagement after the twist, to use Hven's phrase (54), the protagonist is perceived to likewise stray from the cultural norm of mental health.

Underreporting (Thon 184) or burying (Tobin 89) the information of protagonists' neuro-non-normativity and presenting their subjective perspectives as objective reality is the reason this type of film has also been called "deceptive" or "mind-tricking". However, it is also the reason viewers engage with these protagonists and their perspectives in the first place. As Elsaesser remarks, the effect that these films have on audiences "would be impossible [to achieve] if the narrative distanced itself or contextualized the hero via his or her (medical) condition" (103). This observation references a vast body of scholarship on unreliable first-person narrators. One of the earliest accounts comes from William Riggan in 1946, introducing the character (stereo)type of the "madman", illustrating Elsaesser's point about the effect of framing the protagonist through their mental condition:

> one is far more prepared at the outset to take the text as anything from incoherent ravings to rambling absurdities to clear but twisted logical musings—at any rate, not to accept it as authoritative in any sense. One is predisposed, rather, merely to listen to the madman talk, to watch him move, to study him as a case. (Riggan 111)

Although Riggan conceptualized the "madman" trope for literature, it also holds true for film: Framing a character, especially the protagonist as character-narrator (Ferenz 133), as having a mental illness has viewers adopt a distanced position toward them and the narrative. A potent cocktail of detrimental attitudes and beliefs about mental illness in cultural discourse and viewers' familiarization with stigmatizing character tropes in media (Hyler et al.) predisposes them to reject these characters' version of events as not "authoritative in any sense" (Riggan

111). To avoid viewers' suspicion, twist films keep the nature of protagonists' mental states from viewers, ensuring their engagement while also setting up the perspectival double structure.

Although plot twists' double structure ensures that viewers engage with protagonists' alternative worldviews, the twist's recentering of meaning-making processes reinstates the 'madman' trope. The narrative distance, though retrospectively established, has viewers treat protagonists "as a [clinical] case" of which the film is the patient chart. This view is shared in the field of narratology, where scholars see these types of narratives to provide insight into protagonists' "(sometimes twisted) ways of thinking" and a means of acquiring information on "psychological dysfunction" (Nünning 100-101; see also Brütsch 229). The film's narrational structure becomes performative in that it reflects diegetic reality "from within the mad narrator's mind" (Grishakova 136), allowing viewers to draw their own conclusions about the non-normativity of the protagonist's mental state (see also Caracciolo 28; 79–82). In other words, the narrative cognitively and emotionally aligns viewers with the protagonist's worldview and has them see only what the protagonist sees (Mitchell), rendering plot-twist films into metaphorical mediations of the fictional unconscious that is made accessible to viewers.

The tight connection between thematic focus, film form, and narrative situation is the reason scholars take issue with plot twists' narrativization of mental illness. Representatively, Erin Heath observes in relation to *Fight Club* that these films are rarely interested in exploring non-normative mental states but rather "make psychological breakdowns immediate and narratively convenient to provide audiences with an entertaining emotional struggle" (3). The way plot twists justify this struggle is by staging the protagonist with a mental illness as a "clearly identifiable fictional scapegoat", "whom we can hold 'responsible' for being unreliable about the facts of the fictional world" (Ferenz 135). Though

"narratively convenient" (Heath 3), this conventionalized unfolding casts neuro-non-normative characters in the ever-same role of the unreliable Other and thereby reinforces ableist notions of people living with these conditions to be untrustworthy (Rovito).

Having landed on the argument that plot twists thrive on ableist storytelling mechanisms, why dedicate this essay to *TWitW*, the seeming laggard of this decade-old blueprint? As the next section illustrates, I see some plot twists to do more than merely reproduce stigmatizing notions about mental illness. Aware of viewers' familiarization with twist films, *TWitW* riffs off of the blueprint's thematic and formal features and viewers' expectations. In doing so, the film draws out viewers' involvement in constructing and upholding – rather than detecting and retrospectively readjusting – the chain of associations connecting plot twists, unreliability, and mental illness. To illustrate how the film plays with and preys on viewers' enculturated cognitive bias of framing protagonists with a mental illness as unreliable, let me complete the synopsis of the film. Because, in true plot-twist fashion, I have withheld vital story information from you.

Mediating Viewers' Unconscious: The Cognitive Frame of Mental Illness and Twist Anticipation

After the detectives have burst Anna's bubble in which her husband and daughter were still alive, she lets go of her accusations against Alistair and accepts that the murder she has witnessed might have been nothing more than a figment of her imagination. In a levelheaded psychological assessment during another therapy session, she admits that, "I don't think that the Elevan [the medication administered to her] is good for me. … And there's some mania, too. I just really needed to be at the center of something" (*TWitW* 01:08:49). Although outwardly composed, the disclosure of her mental instability has uprooted her, and she records a goodbye note in preparation for overdosing on her

medication. Yet, once again, Anna's plans are thwarted, this time through a picture she finds on her phone. Taken on the night the woman she knows as Jane Russell came to visit her, the picture shows a wineglass with the reflection of the woman whose murder Anna has witnessed. Her tenant David (Wyatt Russell) clears up the confusion: The woman truly is not Jane Russell but someone named Katie. On cue, Ethan, the Russells' son, appears with a knife in hand to reveal that Katie is his birth mother. It was him whom Anna saw kill Jane/Katie and who has been stalking her at night since that day.

Diametrically opposed to the plot-twist blueprint, this turn of events reveals that Anna does *not* have a mental illness and was "right about everything [she] saw" (*TWitW* 01:29:02). While assumptions about the non-normativity of her mental state are levered out, it is now Ethan who is cast in the role of the erratic, violent, and pathological Other. As he threatens her, he tells her to "Breathe. That's what they're always telling me to do. Self-management coping skills" (01:20:36). Through his reference to coping skills, the assumption that "they" refers to psychologists or psychiatrists suggests itself.[3] While outwardly rejecting the trope of the "madman", the film in effect only shifts the pathological reading from one character to the other.

Although the motivation for the second twist is worthy of criticism, Ethan's mental state is of little concern in the scope of this essay, as my argument concerns viewers' understanding of the protagonist as narrative instance. Through the second twist, viewers learn that rather than an unreliable narrator, Anna has been in a similar (narrative) position as the detectives investigating her claims of murder, whose only liability is that they are subject to the "epistemological uncertainty of lived experience. … Of course, they do not and cannot provide … vital pieces of the puzzle until they themselves have found them out" (Olson 101). While the first plot twist that discloses Anna's unreliability will hardly have taken audiences

[3] This reading is more explicit in the A. J. Finn's book template, in which Anna, prompted by Ethan to analyze him, thinks to herself "Psychopath. The superficial charm, the liable personality, the flat affect. The letter opener in his hand" (421).

by surprise, the shift from unreliable to fallible protagonist with a mental illness holds the potential to genuinely surprise viewers.

Viewers' surprise, in turn, is surprising in itself. After all, the second twist discloses that they have been following a linear, coherent, and, most importantly, reliable account of what has happened in line with their "standard and natural mode" of engagement (Hven 54). As this next section lays out, the reason the twist is still surprising is the film's harnessing of viewers' enculturated and embodied cognitive schemas for meaning-making and activation of generic expectations about narratives featuring a protagonist with a mental illness. Conscious about viewers' familiarization with the twist blueprint, *TWitW* plays with the connection between film form, mental illness, and narrative unreliability, turning the film from a mediation of the fictional unconscious into that of viewers.

The reason plot twists work is their harkening back to viewers' automated and deep-seated cognitive processes. One way to activate these processes is through priming, "the way in which one phenomenon activates an associative network and by that facilitates mental operations on the items in the activated network" (Grodal 65). The priming process is especially important during a film's first minutes and the way in which characters are introduced, because "our first impression of a person or situation 'primes' us to label that person or situation using a certain type of schema which biases the way in which we interpret, and attend to, subsequent information" (Barratt 67). In the first minutes of *TWitW*, the film provides several cues that prime viewers to understand Anna's character in two opposing ways. The film opens with a shot of whirling snow that is followed by an extreme close-up of her eye and a medium shot of her hand fishing for the phone. While she talks to her daughter and husband, slow pans through a dimmed and spacious house transport an eerie and desolate feeling. These pans reveal a TV showing a choppy scene in which a man is choked. The first full shot of Anna shows her downing a handful of pills (*TWitW* 00:02:25),

followed by a therapy session in which the psychologist mentions depression, her habit of drinking, and a previous suicide attempt (00:04:50). Again talking to her husband after the session, Anna reminds him, “I’ve been a shrink for fifteen years” (00:05:24).

Viewers’ first impressions of Anna are torn between two contradictory conceptions, the first being based on seeing her wash down pills with a glass of wine, the second being based on her former psychological profession. Bordwell refers to these first impressions of a character as “agent-based schemas” (141–3), which activate an associative network of features usually associated with these character types. He distinguishes between two types of understanding a narrative’s agent: One concerns a character’s personality-like features, their thoughts, feelings, and characters traits, the other referring to role-based features, usually tied to the character’s profession (141).

Following from the film’s first minutes, viewers can focus on Anna’s negligent, potentially abusive use of drugs and mental struggles as listed in the therapy session. This personality agent-based schema actives the well-known network of the “mad(wo)man” trope, which comes fitted with culturally mediated attributes, such as “hysterical”, “untrustworthy”, and “unreliable" (Chouinard). Later in the film, this agent-based schema is even spelled out by Alistair Russell, when he calls Anna “a drunken, shut-in, pill-popping cat lady” (*TWitW* 00:53:19). All these ascriptions cast her in the role of the non-normative eremite and chip away at her reliability.

Yet, viewers can also opt for another reading of her character that follows from the agent-based schema of her social role and her having been a “shrink for fifteen years”. Her past as a child psychologist activates “the schema for doctor [which] includes such characteristics as ‘educated at medical school,’ ‘intelligent,’ ‘trustworthy’, and ‘caring’” (Barratt 65). Although *TWitW*’s first minutes set up these two agent-based schemas to clash throughout the narrative, viewers’ familiarization with unreliable protagonists with a mental

illness will likely turn them suspicious of Anna, emphasizing the personality agent-based schema.

This suspicion also feeds into another play on viewers' automated cognitive processes, which Todd Berliner refers to as planting and payoff. These two narrative strategies harken back to deep-seated and unconscious meaning-making processes well-established in storytelling across all media (Berliner 176-8). The often-cited example of Chekhov's gun encapsulates this narrative knack: When a loaded gun is shown at the beginning of a narrative (plant), this gun has to be fired before the end (payoff). Next to externally characterizing Anna, the film's first minutes also present several potential plants that viewers can pick up on in their meaning-meaning efforts: the uncontextualized scene of whirling snow, the pills, the prominently-placed TV set, and the therapy session. All these cues potentially "[create] an expectation – however weak, misleading, or unconscious – of a future plot outcome" (175), which viewers will draw on when faced with a narrative gap or logical inconsistency.

Let me illustrate the play between planting and payoff using one of the film's central scenes, the bloody murder of Jane Russell/Katie. In the framework of a detective story, the murder would pose as an overt plant which would "generate an explicit expectation of a future outcome" (175), usually the arrest of the perpetrator. The way the murder is framed in *TWitW*, however, may incite viewers to opt for a different interpretation. Anna witnesses the incident across the street through her reflex camera. The limited view is further hindered by her only seeing through the windows of the Russells' home and thereby never seeing the person who kills Jane/Katie. Anna's distanced position is suddenly destabilized when a bloody hand bangs on her window (*TWitW* 00:36:45).The scene's final shot shows hyper-aestheticized blood splatting all over the screen.

The way this scene is staged presents a logical paradox that differs from the otherwise realistic narrative. A way to reintroduce ontological stability and narrative logic is by reframing the overt plant of the murder into a hidden plant "that indicate[s] an insane narrator" (Berliner 175). This reading draws on previously "planted information" – the personality agent-based schema of Anna as a mentally unstable person, her abusive use of alcohol and pills – that rationalizes the scene as a figment of her imagination "to fulfill a narrative pattern" (175).

Understanding the scene of Jane/Katie's murder as a hidden plant indicates an overall shift in viewers' interpretive stance toward the narrative. This shift entices viewers to "[play] down or [omit] concrete details of character action in order to construct a psychic identity …, capable of being integrated into hypotheses about upcoming or past events" (Bordwell 141). In other words, viewers, primed by the film and their growing suspicion of Anna's mental state, tacitly deemphasize aspects of the narrative that do not fit their agent-based schema of Anna and overemphasize those that do.

A way to naturalize arising inconsistencies between viewers' reading of Anna and the narrative is to adopt mental illness as an "overarching or macro frame" (Korthals Altes, *Ethos* 37; see also Kiss and Willemsen 180). This cognitive frame "involv[es] not just a particular way of making meaning but also a relevance frame and value regime" (Korthals Altes, *Ethos* 121). The film's narrative set-up encourages viewers to adopt a certain way of looking and to give relevance to instances that confirm their interpretation of Anna as an unreliable narrator. By accepting mental illness as the motivation for her actions and the rationale for explaining incongruous events and scenes, viewers create rather than deduce the contextual framework for their interpretation.

Yet, the cognitive frame of mental illness as the narrative impetus is not only premised on viewers' enculturated cognitive processes. To briefly return to the scene of the

murder, another way to naturalize the break in realism is by focusing on the hyper-aestheticized blood splatters and to understand them as a reference to Anna's habit of watching old black-and-white films. This reading draws on the planted information of the TV set and the choppy sequence during *TWitW*'s first minutes. Movie buffs will recognize this scene from Alfred Hitchcock's *Rear Window* (1954), which has a decisive thematic parallel to Wright's film: Both Anna and Hitchcock's protagonist are confined to their apartments and experience the outside world only through their windows. But even non-cinephiles will pick up on the increasing use of references to other films, specifically film noir of the 1940s and 50s, a genre known for crime plots that center around morally ambivalent protagonists and mistaken identities. Next to *Rear Window*, *TWitW* also references Hitchcock's *Spellbound* (1945), Otto Preminger's *Laura* (1944), Delmer Daves's *Dark Passage* (1947), and, of course, its name twin, Fritz Lang's noir classic *The Woman in the Window* (1944) (Netflix: Behind the Streams). Far from just being the background noise to Anna's life, some films become part of the narrative when the camera focuses on the TV set or Anna recites films' dialogues while watching. Lines, such as *Laura*'s "you suffer from the common feminine delusion that the mere fact of being a woman exempts you from the rules of civilized conduct" (*TWitW* 00:11:32), become meaningful and potential hidden plants through the cognitive frame of mental illness and generate expectations about the plot's resolution.

TWitW clearly positions itself in the tradition of noir films and activates viewers' generic expectations, which feeds into yet another trend populating mainstream media. Films, such as David Fincher's *Gone Girl* (2016), Tate Taylor's *The Girl on the Train* (2016), and Ben Wheatley's *Rebecca* (2020), all adaptations of novels by the same names, come together in the quasi-genre of female psychological thrillers. The plots of these films follow the premise that diegetic characters and viewers alike cannot be sure of female protagonists' mental stability until proven right or wrong by external (narrative) forces. This type of

narrative has also become conventionalized, as encapsulated in the Netflix series *The Woman in the House Across the Street from the Girl in the Window* (2022). This parody takes direct inspiration from *TWitW*, underscoring the level of conventionalization the narrative pattern has reached in the mainstream.

As orientational aids that facilitate meaning-making processes, viewers' automated cognitive processes and generic expectations prompt "'linear' expectations and schemata" (Grodal 211) for how the narrative will continue. In the case of *TWitW*, these expectations are not strictly-speaking "linear" but twisted. What I mean by this is that, based on the cues and potential plants provided by the narrative, viewers will anticipate a plot twist. This observation runs counter to Daniel Barratt's concept of "twist blindness" (62), which he introduces to explain how viewers overlook plot twists' double structure during a first time viewing. According to Barratt, viewers' "failure of attention" and their continuous "(re)constructing [of] the narrative and [attempts] to confirm [their] first impressions" pool their cognitive capacities around the first classical and linear reading (83). In theory, *TWitW* works with the same processes as *The Sixth Sense*, from which Barratt deduced this concept. However, counter to M. Night Shyamalan's film and other plot-twist films, *TWitW* does not introduce these plays on viewers' cognitive processes to have them overlook, but to *look for* the second narrative. After years of seeing these narratives play out on the small and big screens, viewers' familiarization with the twist blueprint will encourage them to get ahead of the game that they think is being played with them. This *twist anticipation* combines with the cognitive frame of mental illness to override the linear, causal, and coherent narrative that sees Anna as a reliable character-narrator.

Viewers' twist anticipation has supplanted the "standard and natural mode" of engagement (Hven 54), exchanging the linear and reliable narrative of Anna's life for viewers' alternative version that casts her in the role of the unreliable narrator. Indeed,

TWitW's staging of its narrative shows how, through the processes of familiarization, conventionalization, and finally naturalization, narrative unreliability has become the "default setting of narration" for protagonists with a mental illness (Korthals Altes, "What" 70). This concession of viewers' involvement in creating, rather than reconstructing, the unreliable narrative situation allows plot-twist films to break free from a purely pathological reading that sees the text as a mediation of the fictional unconscious. Rather than only seeing what the protagonist sees, "we only see what we have been 'primed' to see" (Barratt 84). However, it is not just a matter of preying on automated cognitive processes, but also about harnessing viewers' subjective "value regimes" that justify their interpretive stance. More than merely a "choreograph[ing of] our expectations" (Berliner 177), I see *TWitW* as calling out the unconscious and culturally mediated bias of viewers to connect mental illness with (narrative) unreliability and thereby encouraging questioning of the cognitive underpinnings that hold this value regime in place.

Remediating Mental Illness: Reevaluating Value Regimes

Right before the first twist that reveals Anna's imagining of her family still being alive, she pleads to be believed by the detectives investigating her claims of murder: "I see the way that you're all looking at me. I'm not crazy. I'm not hallucinating. Do I seem unreasonable? … Look, it doesn't matter what you think about me, if you approve of me, if you think that I'm reliable" (*TWitW* 01:00:24). As the previous section illustrated, Anna is grossly wrong when assuming that "it doesn't matter what [we] think about [her]". Indeed, whether we approve of her and think her reliable matters a lot and is the reason for the second plot twist to hold the potential to genuinely surprise viewers. Counter to other plot twists, this surprise is not motivated by the genre-conventional question "'Wait, how did I miss that?'" (Cossar) but 'Wait, how did I end up here?'

This shift in viewers' response reflects the difference between seeing the film either as a mediation of the fictional unconscious or of viewers' unconscious. Parallel to plot twists' "double structure" that allows for a "double reading" (Klecker 138–9), *TWitW* presents a double interpretive stance, one that is guided by the cognitive frame of mental illness and one that condones the non-normativity of Anna's mental state. Other than the formal-structural intertwining of two narrative trajectories, the double interpretive stance concerns viewers' subjective (enculturated) cognitive processes, the "world-views, norms and values" they bring to the narrative (Korthals Altes, "What" 71). Lisbeth Korthals Altes describes these as "value regimes [which are] used to establish meaning and relevance" in narratives (*Ethos* 159). While previous twist films, in line with much of mainstream media, have confirmed the value regime that relegates protagonists with a mental illness to the unreliable end of the narrative spectrum, *TWitW* lets audiences in on the way "enculturated" expectations "constrain and adjust what [they] perceive" (Tobin 91–2).

To return to the film's play on viewers' cognition and generic expectations, the processes of priming and planting can be reframed as "inference invitations" in the sense that the film "invite[s] the [viewers] to make inferences beyond what is stated in the text" (Bortolussi and Dixon 80–1). In the case of *TWitW*, this filling in of gaps is biased to confirm their growing suspicion of Anna's unreliability as guided by the cognitive frame of mental illness. For the second twist to work, the film "relies heavily on the interpreter's role, … as the twisted text emerges in the interaction of the viewer and the film" (Cameron 159). This reception-oriented stance aligns with cognitive approaches to narrative unreliability (Zerweck) that acknowledge the role of recipients and cultural context in creating – rather than reconstructing – an unreliable narrative situation. Along these lines, we can reframe the perception of Anna as an unreliable narrator by dint of her mental illness "not as [a] logical or abstract characteristic of the text but as a mental representation in the mind of the reader [or

viewer]. In other words, the narrator should be viewed as a reader construction" (Bortolussi and Dixon 72; see also Rovito). It is not a matter of only seeing what the character sees, or only seeing what the film primes viewers to see; it is a matter of what viewers' value regimes allow them to see.

This is where I see the political potential of plot-twist films. Premising their surprising effect on viewers' own culturally mediated value regimes, twist films have the capacity to draw out viewers' "default" interpretive stance. During the time of *Fight Club*, *Memento*, and *A Beautiful Mind*, this default was still the classical story structure that presumed a neuro-normative protagonist. More than twenty years after the release of these films, viewers' new "default" mode of engaging with protagonists with a mental illness is to preemptively relegate them to an unreliable narrative instance. When *TWitW*'s second twist calls out viewers on their jumping to conclusions, it also "call[s them out] for more awareness of (various) patterns *underlying* the interpretive activity" (Korthals Altes, "What" 74, emphasis added). These patterns do not concern disentangling double structures and hidden plants but viewers' own involvement in creating the character trope that Anna has been cast in.

This reframing of the twist structure as inciting, rather than inhibiting, reflection about the role of mental illness in these films also gives way to a different perspective on the plot-twist blueprint. Twist films allow viewers to reflect not just on the values and normative ideas they bring to the narrative but also on the ones that govern classical storytelling. Juxtaposing different perspectives and value regimes encourages reflection about these naturalized processes, inviting a "*meta*-attitude" to "reconstruct and reflect on one's own interpretive steps" (Korthals Altes, *Ethos* 60) and the cognitive waymarkers guiding their way. In the case of *TWitW*, viewers' reconstruction of their interpretive steps leads them to acknowledge that they have spoken the verdict without having considered all the evidence, consigning Anna to the role of the "mad(wo)man" despite her numerous pleas to be believed. The film, then,

allows viewers to question their interpretive stance and value regime that draw on the "usual categories of sane/insane" (Elsaesser 98) and turns them upside down. Effectively, they have to realize that not Anna is the unreliable narrator of *TWitW* but they are.

Conclusion

One of the primary talents of a successful storyteller is the ability to orchestrate our expectations – to activate and adjust them; to satisfy, thwart, or constrain them; to bring them to consciousness or cause us to rethink them" (Berliner 193) – although I called *TWitW* not an outstanding film at the beginning of this essay, the way the film orchestrates viewers' expectations to bring the underlying patterns of their meaning-making efforts to their awareness does stand out from other plot-twist films. While the conventionalized blueprint of twist movies ostensibly casts neuro-non-normative protagonists in the ever-same role of the unreliable narrator, *TWitW*'s play on audiences' cognitive processes and generic expectations shows that this convention could likewise be of viewers' own making. The film invites them to reflect on their default mode of interpretation, which creates suspicion of protagonists because of the perceived non-normativity of their mental state. In doing so, the film also invites viewers to question the enculturated cognitive underpinnings of their interpretive steps, which has the potential to remediate the role of mental illness in these films: from a pathological reading, via one that acknowledges viewers' role in creating narrative unreliability, to one that questions the enculturated narrative of mental illness as the unreliable Other.

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Shifts in Consciousness in Game-Based Narratives

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Abstract

Becoming engaged in narrative worlds involves shifts in consciousness. Individuals who are transported into narrative worlds focus their attention on the events occurring in the story rather than the world around them. Similarly, audiences who identify with characters mentally experience story events from the perspective of a main character. We consider these processes in the context of *actual play*, an entertainment genre featuring the performance of a tabletop role playing game for an audience. Events in actual play narratives occur through improvised player choices and game mechanics (e.g., dice rolls). Thus, stories may contain unexpected events, presenting a challenge to narrative engagement. Furthermore, performers interact both as themselves and as their role-play character. Audience members may identify with both the characters and performers, sometimes with rapid transitions between the two. We explore the implications of these complex types of narratives for understanding the way in which consciousness shifts occur in narrative engagement.

Keywords: actual play shows, role playing/improvised media, narrative engagement, narrative transportation, identification, parasocial interactions

In their leisure time, many individuals consciously choose to engage with stories or narratives. However, once they have decided to pick up a book, start a movie, or play a story-based game, their engagement with the story world involves both shifts in consciousness and unconscious processes. Here, we are using the term unconscious in the social psychological sense of the term, to indicate mental activities that occur relatively automatically and sometimes without the awareness of the individual (e.g., Bargh 2). In this paper, we will examine a relatively new form of media that merges gameplay and narrative to further consider these processes. This genre that has recently gained popularity is called actual play. Actual play can be defined as the mediated or recorded presentation of tabletop role-playing by a cast of players for an audience (Blau 32). We describe this genre in more detail in the sections below.

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We will focus on two primary types of narrative immersion: transportation into narrative worlds and identification with characters. Transportation into narrative worlds was defined by Green and Brock (701) as a state of cognitive, emotional, and imagery engagement into stories. This type of engagement has also been called narrative involvement, absorption, or immersion. It is similar to Csikszentmihalyi's concept of flow, which occurs when individuals are engaged in intrinsically motivated activities; it involves an intense focus and loss of self-consciousness (Nakamura and Czikszentmihalyi 90). Individuals who are transported or immersed into narrative worlds focus their attention on the events occurring in the story rather than the physical world around them (Green amd Brock 702). Identification refers to taking the perspective of a character; in a sense, the audience member's consciousness merges with the thoughts and goals of the character (e.g., Cohen 251).

Our focus in the present paper lies in the cognitive shifts of individuals' conscious attention between the story and the external world or their self-concept. We draw on theories of narrative and character involvement to discuss these shifts as occurring on a spectrum of consciousness, where consciousness is defined by awareness of the self or thoughts related to the real world. Thus, following their traditional theoretical postulations, narrative involvement processes would lie on the far end of the spectrum as unconscious processes. In the following sections, we first describe these initial postulations, then discuss recent research findings that demonstrate the role of "conscious" self- and real world-referencing in these processes, proposing a more dynamic view of story involvement as involving varying levels of conscious versus unconscious processing. Finally, we describe the genre of actual play as a novel type of narrative where the shifts along this spectrum of consciousness may be particularly pronounced and fruitful for future exploration.

Transportation into Narrative Worlds

The original conceptualization of narrative transportation suggested that individuals' attention was completely absorbed by the narrative world; that is, much as when a person travels to a different physical location, being transported meant that one was completely mentally removed from the real world in favor of the story world. Experiences such as losing track of time when reading (for example, staying up far later than intended to finish an exciting novel) or failing to observe events or people in the physical world (for example, missing one's bus stop when listening to an audiobook) illustrate this type of mental focus.

There remains some debate about whether transportation is best conceptualized as a matter of degree or whether it should be considered a discrete mental state. Conceptually, the analogy of mentally traveling to a narrative world suggests that individuals are either in one mental "place" or another; that is, they are either transported or they are not, although they may shift into and out of a transported state. This possibility is also supported by individuals' subjective experience of feeling completely within a narrative world when they are deeply transported. However, empirically, transportation has been measured using a continuous self-report scale, with which participants can rate whether they experienced higher or lower levels of cognitive, emotional, or imagery engagement on a series of items related to the narrative (Green and Brock 704). Readers generally select values across the range of the scale rather than only choosing the endpoints of "not at all" or "very much". Research findings have shown different narrative effects from individuals who report being more versus less transported into a narrative (van Laer et al. 808), with narrative impact such as attitude or belief change occurring more for individuals who report higher transportation. Additionally, although attention is not the same as immersion, studies have shown that individuals' attention can vary across the course of a story, with greater attention at points of suspense, for example (Bezdek and Gerrig 80).

Furthermore, more recent perspectives have highlighted the dynamic nature of transportation. As part of the narrative experience, individuals may imagine story events, but also think about events from their own lives. Bilandzic proposed that experiential closeness, defined as personal experience with situations, may combine with the mediated closeness (transportation) to provide enhanced narrative engagement (339). This enhancement occurs when the remembered personal experiences are consistent with the story content; if the story is inconsistent with one's personal experiences (for example, if an author makes errors in the description of a familiar location), the immersion experience may be disrupted instead. Empirically, Tchernev and colleagues measured the dynamic nature of transportation into narratives by using continuous self-report measures of attention and presence. They found that people's attention to a story varies over time, but that people who were more (rather than less) transported also had more thoughts about themselves and the real world (325). The transition back and forth between these types of thoughts can happen quickly and seamlessly, and generally may enhance rather than detract from the narrative experience (330). Indeed, the integration of the story world and the person's own experiences seems to lead to greater narrative impact (that is, a stronger effect of the story on an individual's attitudes or beliefs). Strange and Leung highlighted the important role of personal resonance (or "remindings" 437) in narrative influence, and other work has confirmed that narratives can be persuasive through the mental process of self-referencing (e.g., Escalas 422; de Graaf 483). The rapid and automatic shift between story-related attention and self-related thoughts may lead into a more conscious process of self-referencing, in which individuals more fully consider and express the links between the story and their own lives.

The shifts in attention over time may be idiosyncratic, as when a particular narrative event or detail reminds a person of something from their own life (e.g., a story set in a person's hometown may prompt memories from their childhood). However, differences in attention can

also be driven by features of the text. As noted above, using reaction time and memory measures, Bezdek and Gerrig found that attention was higher during suspenseful points of a narrative (80).

Identification with Characters

Individuals may experience transportation into a narrative world as a whole, but they also mentally engage with characters within that world through identification and other character-related processes. Cohen summarizes early conceptualizations of identification by describing it as "an imaginative experience in which a person surrenders consciousness of his or her own identity and experiences the world through someone else's point of view" (248). Similar to transportation, identification is also a dynamic process (Cohen 250). Individuals may identify with multiple characters over the course of the narrative. (In practice, however, much social science research has studied identification by measuring overall identification with a main character.) These shifts in perspective may occur relatively automatically or unconsciously.

Identification with characters is closely related to empathy, as both involve taking the perspective of another and feeling emotions related to another's experience. Consistent with the resonance and self-referencing ideas discussed above, Dill-Shackleford and colleagues suggest that narrative audiences can also experience empathy both for the story characters and for themselves (641). They call this process dual empathy, which can occur when the narrative prompts autobiographical thoughts.

Although empathy can be manipulated in experimental contexts by encouraging individuals to take the perspective of another person (Toi and Batson 281), identifying with characters often happens automatically and unconsciously. Audiences respond to the situation or personality of the character just as they respond to people in the real world. However, a more

long-term and potentially more conscious form of identification has been termed wishful identification (Hoffner and Buchanan 327). Wishful identification occurs when a person wants to or attempts to become like a character (as when a child dresses up as a favorite superhero and imagines having the character's powers). Thus, the unconscious connections that may form during narrative experience may be continued afterwards through conscious and intentional efforts.

Identification with characters has received a significant amount of attention in the research literature, but audience members can engage with characters in other ways as well. For example, Polichak and Gerrig proposed that readers sometimes act as side participants: people who are observing an interaction (in this case, between narrative characters) and have the potential to participate in the interaction (73). In this situation, audience members may react in ways that indicate their mental participation in narrative events, such as wanting to yell, "watch out!" to a horror movie character who does not see a monster approaching (81). The desire to warn the character may occur relatively automatically, even though audience members could consciously report that they know the events are completely fictional and the character cannot hear them. Such experiences are a blend of conscious and unconscious processes. Similarly, audience members can develop an imagined sense of closeness with media figures. These parasocial interactions or parasocial relationships can be related to both characters or media personalities (Giles 294). In a parasocial relationship, the audience member feels like a character is a friend, even though this relationship is only one-sided.

Tabletop-Roleplaying Games and the Actual Play Genre

The narrative engagement processes described above have largely been explored in the context of traditional stories (e.g., relatively linear narratives created by an author or a script-writing team). However, narratives are also present in less-traditional forms, such as role-

playing games. Tabletop role-playing games (TTRPGs), whose origins are traditionally traced to the flagship *Dungeons & Dragons,* which is still considered a leader in the genre, have occupied space as a subculture phenomenon for close to half a century (Bowman 11). While the general term "role-playing game" can refer to various types of play variations and mediated experiences (e.g., a genre of video games, "live-action" roleplaying or LARP), in this overview we will focus solely on tabletop, sometimes also referred to as "pen-and-paper" (11), roleplaying games and the novel entertainment media genre of *actual play* that the mediated performance of TTRPGs for an audience has given rise to.

Characterized as "neither wholly games nor wholly narratives" (Cover 174), and often examined as collective storytelling experiences, TTRPGs can be defined as games in which a number of players take up the roles of fictional characters within an imaginary environment that allows them certain freedoms of action and movement (Fine 6). When examined through a narrative lens as shared storytelling experiences, TTRPGs can also be defined as "a story with a group for an author, a story that grows organically and is acted out, is experienced by its creators" (Schick 11). The core structure of a TTRPG, as exemplified by genre originator *Dungeons & Dragons,* can be summed up as including a group of players who each create and control a fictional character, alongside a player who serves as arbiter of the story world and events, with all players using a mix of improvisation and the rules of a game system to act out the unfolding story events (Zagal and Deterling 27). The arbiter player is variably known as a dungeon or game master, facilitator, director, etc. depending on the terminology of a given game, and takes charge of managing the application of game rules, the unfolding of story events, the structure and development of the fictional world, and the actions of all non-player characters (NPCs). The shared storytelling in a TTRPG occurs verbally, with players describing their characters' intended actions and the game master applying the rules and mechanics (which often involve the rolling of dice) of the game alongside improvised

judgements, to determine the outcomes of those actions (27). Thus, the type of storytelling in TTRPGs is both quantified and interactive, with the outcomes of actions being determined by numbers or quantities that correspond to certain rules, but also depending on in-the-moment decisions and improvisation by all players involved.

The convergence of technological development and participatory culture has allowed for tabletop RPGs to evolve from their original form of analog experiences into a multimillion-dollar entertainment industry (Jones 5). Over the past two decades, the need for a physical tabletop around which players can gather has faded and increasingly popular online tools that facilitate game play, as well as streaming platforms like Twitch and YouTube, have promoted both the direct individual play experience and the broadcasting of tabletop RPGs to a global audience. These developments have given rise to a fascinating new cultural phenomenon called actual play.

Actual play as an entertainment media genre can be defined as the performance of a tabletop RPG for an audience, presented in an audio or audio-visual form (Hope 56). Actual play shows like *Critical Role* (Critical Role Productions), *Dimension 20* (Dropout), and *The Adventure Zone* (Maximum Fun Network) have contributed to the proliferation and increased popularity of tabletop RPGs like *Dungeons and Dragons* and *Pathfinder* (Farough and Futter). The genre has even entered into mainstream media popularity with traditional media adaptations of actual play storylines into animated series (Ishwar) and graphic novels (McMillan).

While playing a tabletop RPG itself can produce an immersive narrative experience (Bowman 381), actual play shows have transformed TTRPG play into a performance genre made for a much larger-scale audience than the traditional experience of a narrative shared solely between the group of players who are co-creating it (Hope 60). With an estimated aggregated number of 19.5 million views across Twitch and YouTube in 2019 (Farough and

Futter) actual play shows have turned TTRPGs into a type of popular consumable narrative for mass audiences (Jones 5).

The storytelling rules of TTRPGs are followed in actual play shows. Actual play features a performing group, comprised of players who portray individual characters, and a game master who acts in a referee-like role, controlling the world of the game and all characters not embodied by the players. As a fictional storytelling format, actual play media can offer its audience members a transportive narrative experience, but there are several unique aspects of the genre that may influence narrative involvement processes. In the following sections we discuss some possible effects in two types of these processes: involvement into the narrative, or narrative transportation (Green amd Brock 701) and character-related involvement such as identification (Cohen 245), as well as parasocial relationships (Horton and Wohl 215).

The Unique Narrative Features of Actual Play

We believe that actual play, as a distinct media genre, offers a type of narrative experience that differs from that of traditional entertainment media in at least two ways. First, while they feature fictional stories, actual play shows are not created by script writers and acted out by performers (Blau 32). Rather, as described above, the performing group which creates the story is comprised of players who portray individual characters, and a game master who controls the world of the game and all characters not embodied by the players. The players' narrative experiences are unscripted and spontaneous. While some main narrative elements may be planned by the game master, the players decide how their characters will respond to them, often improvising whole scenes. The choices made by players may in turn make the game master change their initially planned plot, resulting in the unfolding of an entirely different narrative arc than the one that was initially intended (36).

Second, while story outcomes in other forms of narrative media (e.g., TV dramas) are – at least in their traditional forms – decided deliberately by script writers, who weigh how each development would fit with various character motivations and within the broader narrative of the show, events in actual play are resolved according to the game rules, which most often involve the rolling of dice. Characters in tabletop RPGs have specific gameplay characteristics that correspond to their role in the narrative and can influence the results of dice rolls (for example, characters with different abilities are able to add points to their dice rolls under relevant circumstances, such as a cleric character in a situation that calls for wisdom or a fighter character in an attack situation; Bowman 25). However, ultimately the success or failure of an intended action is "strongly determined by the outcome of [dice] rolls" (Blau 49). In other words, character actions and the following narrative developments are not predetermined or planned in accordance with storyteller decisions about what is logical or enjoyable, but are instead the results of chance.

For example, in the *Sophomore Year* season of *Dimension 20*'s *Fantasy High* campaign (Dropout), self-assured noble heir Fabian Seacaster (played by Lou Wilson) confidently takes on a fight with one of his father's rivals, supported by a group of subordinates (non-player characters controlled by the game master). Due to player Lou Wilson's consistently low dice roll results throughout this scene, Fabian – whose class (character type) is fighter, granting him sufficient prowess in battle – suffers a heavy defeat, with most of the subordinate characters being killed, while Fabian himself narrowly escapes with heavy injuries. A few episodes later, now in the company of the other main characters, Fabian meets this rival once again, but instead of a spectacular confrontation between the two, as it might have been framed in a traditional heroic narrative, the ensuing battle proceeds with very little participation from Fabian, whose player is unable to achieve a high enough dice roll to have his character shake off the effects of a stunning spell that has been cast on him. Instead, the rival is killed by another main

character. These events heavily influenced the direction of Fabian's character arc on the show, even having an impact on the character in terms of game mechanics, as both player and dungeon master agreed to make changes to the character's class and remove some of his abilities—a change that, while not impossible, is uncommon. However, it was seen as necessary to fit the new narrative development. Thus, although it is an intrinsic part of the TTRPG experience and a core means of the co-constructing of stories in these games, the "element of chance" (49) is the second of the unique features that sets actual play apart from all other narrative formats.

In the framework of traditional narrative experiences, dramatic shifts in the story such as those induced by chance failures associated with the mechanics of a game could create notable narrative inconsistencies. Narrative coherence is often considered to be a central element of good stories (e.g., Ryan 371). A change in story direction from a dice roll could possibly interfere with audiences' unconscious construction of mental models that are key to an immersive story experience (Busselle and Bilandzic 256). While audience members may not be actively monitoring every aspect of a story and considering how realistic it is while watching, narrative elements that shift their cognitive resources away from pure comprehension have been shown to diminish engagement with the story, which in turn diminishes its effects (273).

Thus, we might expect that inconsistent plot developments, due to the potential breach in internal logic expectations that they create, could be judged as disruptive to continued narrative immersion because they would provoke an active (i.e., conscious) deliberation of its realism that would take audience members out of the story world (Busselle and Bilandzic 268). However, our recent research demonstrates that when viewers or listeners of actual play shows were asked to recall a moment when a storyline changed due to an unexpected dice roll result, participants judged the realism of the following narrative events as consistently high. In a

thematic analysis of open-ended responses, we found that the continued consistency of the protagonists' characterization was of paramount importance for respondents, who were more inclined to make allowances for plot inconsistencies in relation to an actual play show's genre and tone (e.g., more or less comedic).

Because actual play stories are continuously unfolding as co-created sequences of events centered around the core group of player characters, it is possible that viewers have established schemas corresponding to this type of narrative, allowing them to remain immersed in it, even through dramatic shifts in the larger plot structure that would be severely disruptive in traditional entertainment media genres. This finding illustrates the important role of individuals' expectations in shaping their narrative experience; a conscious understanding of the loosely-structured nature of actual play narratives helps audiences maintain their transportation during story-viewing, even under circumstances that would otherwise be considered barriers to narrative engagement. (Of course, a skilled game master will try to adapt to the unexpected plot developments and maintain the flow of the story, but they cannot always anticipate or fully compensate for sudden changes of fortune for the characters.)

Beyond plot shifts, other disruptive story elements could be character actions that are inconsistent with their motivations or flaws in the plot that defy real world knowledge or genre conventions. Because genre conventions serve as one type of schema that allows audience members to anticipate the nature of a story they are about to experience, they can help audience members orient themselves in the logic of a story world. The constraints imposed by different genres can also act as delineations of the verisimilitude of a story (Segal 65), creating implicit expectations of what is realistic within its world and drawing boundaries on what elements may be considered disruptive to the specific context of narrative transportation. For example, time travel might not be considered unrealistic in the context of a science fiction story, but would be highly unrealistic in most other genres. A story element that violates expected conventions

is jarring to audience members, breaking the immersion, shifting audience members to a conscious questioning of the narrative development, and often leading to dissatisfaction with the narrative experience. In the case of actual play shows which often present fantasy narratives, genre conventions are often the only orienting factor for audiences, as the logic and expectations of the real world are not applicable to the story at hand.

It could thus be argued that it is not only the genre and story conventions of actual play that make up audience members' schemas. Hope notes that – much like Brechtian theater where pleasure is drawn not only from the story but from understanding the workings behind it – actual play audiences might derive enjoyment from their exposure to the building blocks of the story (i.e., the players behind the characters and the mechanics of the game that contribute to narrative developments) (71).

A related perspective from Kuijpers and colleagues differentiates between story world absorption (similar to transportation) and artifact absorption, in which readers or audiences shift their conscious attention to the craftsmanship or aesthetic properties of the narrative. Artifact absorption can lead to appreciation or reflection (Kuijpers et al. 39). They argue that techniques such as foregrounding or defamiliarization draw readers' attention to the beauty or novelty of a particular part of a narrative, which can lead to seeing the world in a new way (Hakemulder 197). These techniques shift the consciousness of the reader out of the storyworld – the reader may stop to think more deeply about a unique wording or description – but into artifact absorption. Artifact absorption is still a type of engagement with the text, but it requires more conscious thought. While their analysis focuses primarily on literary texts, the idea that the process of engaging with a narrative might involve both immersion in the plot itself and attention to the craftsmanship of the narrative is also relevant to actual play narratives.

Indeed, Hope argues that unlike the more passive consumption of traditional TV, the increased cognitive work that audience members need to perform to organize the co-occurring

narrative, game rules and player interactions, can facilitate the experience of flow – a state which has been likened to narrative transportation in previous work (Busselle and Billandzic 273; Green 248). Thus, while they are just as immersive as traditional narratives, we argue that actual play, with its "exposed architecture" (Hope 71), sometimes engages audiences in a more conscious type of cognitive processing by making them process not only the unfolding story, but also the performers and gameplay rules that contribute to its development. In fact, when describing factors that contributed toward maintaining a high narrative consistency, participants commonly referred to the improvisational expertise and TTRPG rule-related knowledge of the performers.

For example, in relation to the events from the show *Fantasy High* described above, some participants pointed out that player Lou Wilson consistently chose reactions and outcomes that would be the most in-character, despite the fact that these choices were strategically suboptimal in the fight. This display of performer expertise maintained a strong consistency of character and kept the viewers interested and invested in Fabian's narrative arc. Conversely, instances where performers display a lack of expertise or professionalism (e.g., inserting out-of-character humor in serious in-character scenes between other players, demonstrating a severe lack of effort or knowledge related to working with the rules of the game system used in the show) were emphasized as much more disruptive than possible narrative inconsistencies owed to the element of chance. This finding illustrates the boundary conditions of audience members' tolerance of inconsistency in this genre. Specifically, unexpected changes in plot are accepted (likely relatively unconsciously), but elements that violate character consistency are consciously rejected.

Interestingly, however, the interruption of narrative events by out-of-character social interactions is a common and expected element of TTRPG play, and thus of actual play shows. Audience enjoyment does not appear to be disrupted by shifts in focus between the performers

themselves and the characters they play. Therefore, even out-of-character comedic interludes may not prompt negative consciousness shifts in audience members, particularly if they are working with a genre schema which allows them to anticipate such events as a regular part of the show format. Audience members appear to easily and fluently follow switches between different types of interactions (e.g., players conversing as themselves versus players acting as their characters; see below) and movements in and out of the story being portrayed, and enjoy these different layers as long as players maintain the consistency of their characters.

Additionally, many actual play viewers and listeners are also TTRPG players themselves, thus likely maintaining a certain schema related to appropriate and companionable behaviors from fellow players. Thus, the particular emphasis on lack of professionalism and bad player etiquette may be connected to processes of self-referencing and the activation of viewers' real-world experiences and knowledge when it comes to the degree and severity of out-of-character interruptions.

Actual Play and Relationships with Performers and Characters

The above discussion leads us to a second unique characteristic of the actual play format: the audience's heightened awareness of the performers behind the characters. Whereas identification with characters is often an unconscious process, people may make more conscious judgments about the performers themselves. This distinguishable presence of both performers and the characters they portray within the actual play format, as well as the oscillation between the flow of the two types of stories that occur through character interactions and the real-world interactions between the players, offer a new avenue for the investigation of processes of audience involvement with media personages, such as character identification (Cohen 245), parasocial interaction, and parasocial relationships (Horton and Wohl 215), as well as the interplay between these processes.

Unlike traditional entertainment media genres such as TV shows and movies where actors on screen only ever embody the characters they are playing, the actual play format offers what Blau calls a "story-in-story" (48), which includes events from both the narrative and the real-world interactions between players who are creating the narrative together. In her analysis, Blau emphasizes that traditional entertainment formats such as TV shows and films employ heavy editing and strict formats of sequential shots to shift the focus to select characters and aid story flow, unlike actual play's static panel shot format and minimal use of editing (39). Actual play viewers are most often presented with the full line-up of the show's cast, with each member appearing in a static position on screen (for example, sitting at a particular place around a table). With all performers on screen the whole time, actual play viewers are able to observe a much broader set of events instead of only the selection of events that are germane to the fictional plot of the show and thus choose which events to set their focus on (49). For example, players might talk among each other "out of character" (e.g., as themselves) to determine a new course of action or ask for a rule clarification. They may also engage in unrelated social interactions. As Blau asserts, player personalities can become nearly as important to viewer enjoyment as the personalities of the characters they are portraying, because of how regularly their presence is felt on-screen.

This analysis can be further complicated by the increasing prevalence of audio-only actual play shows, in which listeners are not presented with any visuals that would allow them to shift their attention to a part of the screen unrelated to the panel where the narrative is occurring. However, in podcast-form actual play shows, out-of-character interruptions and unrelated social interactions become much more central, likely occupying the listener's full attention and directly inciting processing shifts by provoking a more conscious processing of the diegetic layering of the game.

The situations described above create the possibility for the alternating occurrence of two very different modes of relating to on-screen personas. Within the story, viewers may come to strongly identify with a character, a process which supposes a loss of self-awareness and a cognitive merging with the character's perspective (Cohen 251). Conversely, when in-character moments are replaced by out-of-character interactions between players, viewers might experience parasocial connection to these performers – a more "conscious" process of one-sided attachment which differs from the absorbing experience of identification. In the following sections, we offer examples of audience experiences with actual play characters and performers which might contribute to shifts along the spectrum of conscious narrative processing.

Hope contributes a related perspective (58), using the application of frame models as it has previously been applied to tabletop RPGs by Fine (186) to propose three primary frames of the actual play experience: the narrative frame (i.e., all actions that encompass the narrative diegesis), the gameplay frame (i.e., actions related to the clarification of rules and game mechanics, and the use of dice to decide action outcomes), and the social frame (the interactions and relationships between players that fall outside of the narrative and game context). Rather than clearly distinguished and separated by strong boundaries, these frames interact with one another and the transitions between them may be unnoticeable even between performers (Hope 59), contributing to a shift in audiences' perceptions as well. For example, in an early episode of *The Adventure Zone*'s *Balance* season, player Justin McElroy, whose character, Taako, is the only member of the character group who noticed a figure hiding in the shadows, accidentally addresses fellow player Clint McElroy (his real-life father) directly – rather than in-character – to relay the information. This event prompted a comedic in-character reaction by the other two players, because the cast, while related in real life, portray a group of characters who have no family ties.

Justin McElroy [as Taako]: Dad, there's a guy over here with a cane.

Clint McElroy [in-character]: Is your father here?

Travis McElroy [in-character]: He's your dad? ("Here there be Gerblins: Chapter Five")

Such blurring of the lines between in- and out-of-character interactions is common and may even have an impact on in-character interaction (e.g., an interaction like the one presented above becoming fully incorporated into the narrative frame and informing future narrative events such as references or character decisions) (Hope 59). The usually fluid shift between experiential frames likely also contributes to audience members' own continued unconscious involvement, but interruption (or a break in the frame; Marsden and Mason 168) due to the mismatch between frames adopted by different performers could also disrupt this process. In the episode, the interaction between the McElroy family members described above quickly turns into a short discussion about the use of character voices – an element that Marsden and Mason (169) argue could be a further means for performers to foster a closer audience connection. It is possible that such a discussion, with its emphasis on the performers' use of a specific tone and cadence which signify a shift into the narrative frame, could impact audience members' future unconscious processing of the narrative, giving them another cue that helps distinguish between frames. At the same time, the on-screen effort from the McElroys to resolve the frame break in the moment is also conducive to fostering a more direct and conscious connection with audience members, as it demonstrates their awareness not only of their responsibility as players in the game, but also as performers (Hope 60; Marsden and Mason 169). However, this emphasis could also cause any mistakes in the use of a character voice versus the performer's own following this on-screen conversation to result in more disruptions, as listeners are likely to shift to a fully conscious processing in an attempt to dispel confusion and ascertain the correct frame of reference.

While Hope asserts that performers intentionally emphasize the narrative frame to reduce distraction and maintain audience engagement (64), she also notes that out-of-character interactions between them are part of the actual play spectacle and are enjoyed by audiences, rather than merely tolerated (70). This engagement with the real-life personas behind the characters can contribute to the establishing or strengthening of parasocial relationships. Even beyond the experience of watching, this type of parasocial engagement may also lead to an increase in conscious actions or thoughts related to fan behavior (such as seeking out more information about the performers or watching them in other shows).

Thus, a final element of the interplay between characters, performers, and audience members in actual play is the possibility of direct audience interaction and involvement. The live broadcast format of some actual play shows conducted over streaming services such as Twitch.tv or YouTube allows for direct interaction with viewers using these platforms' chat systems. While the possible differences in modality between actual play shows and the fact that cast members are most likely to focus on their performance rather than audience interaction mean that these interactions are not very common, this element has contributed to scholarly analysis of the genre through the lens of a comparison with other new streaming formats (Dandrow 122) such as let's play (i.e., a live-streamed or recorded play of a video game that usually includes entertaining commentary from the player, Glass 81). Recently, scholars have begun examining mediated relationships with popular personas on streaming platforms, proposing novel forms of parasocial relationships that account for the possibility of direct interactions between performers and audience members which nevertheless are unlikely to lead to real social relationships. One proposal is for the concept of semi-parasocial interactions, or attempts at directly interacting with a media figure, such as through fan mail or social media comments with the belief that they might be seen (Thelwall et al. 33).

In addition to interactions with performers, audience members may also be able to directly contribute to the creation of the story or its world. For example, a recurring non-player character on *Critical Role* who appeared in over a dozen episodes of the show's second campaign, was created with input from audience members, while one viewer incentive adopted in early seasons of *The Adventure Zone* was the naming of newly introduced non-player characters using show viewers' names as found on social media. These very conscious forms of engagement may contribute to non-conscious forms of engagement by making the show more personally relevant to audience members. The heightened personal relevance may lead them to pay closer attention to the shows and thus experience even higher narrative engagement.

It becomes evident from this overview that, while actual play may resemble traditional narrative entertainment formats, one of the defining aspects that sets it apart is the dynamic co-existence between performers and the characters they portray that it creates. As players on screen shift between the narrative, gameplay, and social frames, they oscillate between embodying and then shedding the persona of their narrative characters, which creates an entirely new context for the experience of mediated relationships by the audience and offers a possibility for a new type of interplay between parasocial and identification processes. It could be, as Tukachinsky and colleagues propose, that identification is a dynamic, non-constant process (875), in which case audience members should be able to easily shift between identifying with characters within the narrative and experiencing parasocial interactions with the players when they shift to a non-narrative frame.

Character involvement processes can also be experienced independently of one another and with different characters. For example, Tukachinsky and colleagues posit that parasocial interaction involves the perception of a mediated figure as a distinct persona during mediated exposure, making it unlikely to overlap with the experience of merging perspectives associated with character identification (887). Thus, it is also possible that viewers may experience

parasocial interaction with certain characters while deeply identifying with the perspectives of others. Alternatively, Brown proposes that parasocial interaction and parasocial relationships may lead (1) to stronger transportation into the narrative, with the two processes mutually reinforcing each other and (2) to identification as a more intense form of psychological involvement (273). These processes could likely occur with both characters and performers in actual play as audience members experience the shifts between different experiential frames and levels of self-reflexivity.

It is also possible that parasocial relationships with certain actual play performers could affect the levels of identification with the characters they portray. That is, an audience member's conscious thoughts or feelings about a performer might influence their reactions to the characters played by that performer (for instance, either facilitating or hindering the typically unconscious process of identification). Thus, it would be important to also examine what outcomes of consuming actual play emerge from the formation of these mediated relationships. The possibility for audience members to intentionally choose to shift their attention away from the narrative frame and toward extraneous social interactions (Blau 48) and its specific precursors and effects can also be tested in this context. Additional complexities may also emerge; for example, some audience members may experience wishful identification (the desire to be like another individual or character) with an especially skilled game master or a talented performer.

Furthermore, while actual play narratives do not typically have an underlying message or persuasive goal, there is an extensive body of evidence that suggests that stories can change individuals' real-world beliefs. Individuals may adopt ideas from narratives even when the stories are intended purely as entertainment. Such change may be either conscious or unconscious. Consciously, individuals may think carefully about ideas presented in a story. For example, readers of *Orange is the New Black,* a story about the author's time in a women's

prison, might reconsider their views on the causes of crime or the need for prison reform. Other types of changes might happen without awareness. Implicit attitudes are unconscious associations that individuals form in their minds, either through experience or through media exposure (Payne and Dal Cin 292). For example, if a particular series always features women as a certain type of character (such as a healer), viewers might begin to associate women with that role. Such associations may also influence individuals' behavior without their conscious awareness. These processes have been studied extensively in the areas of prejudice and discrimination (Kurdi 569).

Conclusion

Recent research into narrative engagement experiences with traditional media (e.g., novels, TV shows, films) has demonstrated the dynamic nature of such involvement through shifts in consciousness, pointing to their contribution to enhanced, rather than diminished, narrative engagement experiences. In this chapter we discussed the novel narrative genre of actual play and its unique features that introduce various new considerations into the already dynamic and complex processes examined by narrative researchers. That actual play has become a successful and increasingly popular genre points to the need to closely examine its unique features and integrate them into existing theorizations on narrative processing. While the conventions of TTRPGs and the unusual shift between in-character narrative and out-of-character performer interactions may constitute a barrier to entry for some viewers or listeners, the interplay between narrative and character involvement processes that can stimulate shifts between conscious and unconscious processing may enhance narrative experiences and enjoyment. This may be a fruitful arena to explore the nature and boundary conditions of various types of narrative engagement, and we encourage further inquiry into this genre.

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Towards Triangulating Epistemology of Narrative Experience

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Abstract

Stories people tell each other are fundamental constituents of shared cultures, such as oral traditions, texts, algorithms, and audiovisual artefacts. While there is a body of literature elaborating on how stories are shared, how these stories first emerge deep in an individual human mind is still largely an unexplored area. To suggest a way to access the preconscious roots of mediated experience, we introduce an epistemology that makes iterative cross-references between three different manifestations of mediated experience and in this manner contributes to the explanatory depth of each: 1) experience as it is *self-indicated* by first-person, 2) as it is *mediated* to second persons, and 3) how it is *observable* as psycho-physiological activity in all involved persons. We focus on *narration* as a universal sense-making function that organizes and articulates individual experience all the way to communicative and cultural manifestations of experience. Focused to experience of film narration in particular, we assume that each of the following methodologies gives access to one of the mentioned manifestations of experience: self-reported *descriptions,,* annotations of *film narration,* and *neurophenomenology* and its specific film-focused subdiscipline, *neurocinematics.* We maintain that no two out of these suffice to explain each other but a third is always needed for contextualized and holistic understanding. Theoretically, our approach is based on the *conceptualization* of mind as a fully integrated system, part and parcel with both its body and environment.

Keywords: autonarration, communicative narration, narrative sense-making, triangulation, manifestations of experience, neurocinematics, phenomenology, film annotation

Introduction

The motivation for our approach to narrative experience arises from the apparent failure of film studies, psychology, cultural studies – or philosophy for that matter – to address the relation of elemental embodied experience, or core experience, and narration. To address this from a new angle, we conceive of narration as something more fundamental than its common reference. It rests, as we suggest, on *autonarration,* elemental explanatory mental construction that is not yet but only prepares for shareability. It organises and ties together introspection, perception, cognition and environmental orientation into solid awareness of self within its temporal and spatial context.

Such a pre-verbal process would constitute *a core cognitive function that serves* "telling apart", "drawing golden threads", "filling-in" and causative construction, altogether describable as *making sense of an individual's situatedness in the world.* We consider this process, for which there is range of arguments to mention, as what organises the elements of experience and only secondarily and gradually extends to communicable and eventually culturable forms, referred to as *communicative* narration. We trust that such an extended and encompassing conception of narration can serve as the integrating concept that brings together recent developments in phenomenology, cognitive science, neurosciences. Focusing into *narrative experience in film*, we argue for autonarrative experience as the pillar on which communicative film narration, a form of communicative or mediated narration builds. It is also the film medium in particular that allows for deepening the epistemic understanding of this continuum better than some other medium, thanks to its temporality on one hand, and its embodied nature on the other.

Indeed, ours is a holistic and systemic approach whose roots can be traced back to the *autopoiesis* theory of Maturana and Varela, a biology-inspired account that describes a living organism within the big picture of an intercoupled brain-body-world system, a model that may be extended all the way to explaining social and societal organisation. From the experience point of view, such an autopoietic entity is not only a reactive agent that forms anticipations based on past experiences, but is *actively* involved (en-active) in constructing the world in perception and making experiences happen. This interaction relies on *embodied intersubjectivity* (di Paolo and de Jaegher 1), the prerequisite of sharing experiences due to 1) isofunctional biological bodies, as well as 2) shared cultural and social contexts (Tikka and Kaipainen, "Intersubjectivity").

The autopoiesis theory has led further to the definition of *enactive cognitive science* of Varela, Rosch, and Thompson. It is a description of mind as emergent from the

engagement of the body-brain system with its environment. Further, the enactive cognitive science (Varela et al.) implies that experience must manifest itself in motor behaviour to which core self extends (Gallagher). Related bodily functions may to some extent be observed by means of biophysiological and neuroscientific methods (for review see e.g. Frewen et al; Northoff et al.).

Beyond autopoiesis, enactive cognitive science draws from the hole tradition of phenomenology since William James (1890), Edmund Husserl (1991) and Maurice Merleau-Ponty (1962) (see reviews of Baggio; Petitot et al.; Vörös, respectively), and a long history of ideas opposing the blunt dualism of the once mainstream of cognitive science, then called cognitivism. The work by Varela and colleagues have inspired a range of cross-disciplinary holistic insights into media and arts, such as the formulation of enactive cinema (Tikka, *Enactive Cinema*), enactive media (Tikka, "Enactive Media"; Kaipainen et al., "Enactive Systems"), and enactive authorship (Tikka, "Screendance"). Other systemic ideas have been discussed in ecological psychology (Anderson), bio-cultural theory (Grodal), neurofilmology (D'Aloia and Eugeni; Eugeni), relation of the film viewer and the narrative world (Hven), and "narrative complexity" as a metalevel system (Grishakova and Poulaki). Elsewhere, contemporary experiential phenomenology is developing methods to trace regularities and categories of experience in a manner generalizable across individuals (Valenzuela-Moguillansky & Demšaradd).

Our argumentation assumes that both autonarration and communicative narration rely on the common denominator of the embodied foundation that eventually allows intersubjective shareability (Tikka and Kaipainen, "The Unfolding Now"). The advantage of the narrative approach is that it draws a continuum of sense-making through three different manifestations of experience, (1) the one indicated by first-person awareness of a pre-verbal experience – neurally perceived and "told apart" as *an event*, – offering the objectification

that is prerequisite for (2) another, which is communicable and mediatable to others in terms of *structured narrative artefacts* such as texts or films that can be analysed in terms of shareable events, and (3) yet one, the manifestation of experience as it can be traced by means of *psycho-physiological observations* of the experiencer's mind-body system, also analysable into components with distinct psychofunctional purposes, such as neural mirroring of a screen character's gesture. While events as they appear in these manifestations do not necessarily directly match, we trust they do so to a sufficient extent in order to allow initial cross-referential definition and that their mappings will improve through iteration.

We suggest an epistemology of narrative experience that assumes the mentioned manifestations of the phenomenon, and proceeds toward a big picture via iterative cross-referencing and mutual definition between them. This way we also hope to be answering the neurofilmological call for "a shared and consistent epistemological framework" between natural sciences and film studies (D'Aloia and Eugeni 14). Reflecting what is called triangulation in social sciences (see e.g. Olsen), or in film studies (Smith), we trust that iterative cross-referencing each manifestation of the phenomenon of narrative experience against two others secures a way toward an encompassing explanation of the phenomenon. Of course, the roots of the triangulating epistemology approach can be traced back to Charles Peirce (see Hoopes).

Methodologically, among various kinds of narrative media, we will focus on mediation of experiences via films, and not, for example, books or folklore, because films have particular advantages for modeling our approach. We endorse Steffen Hven's ecological film theory, which argues that the viewer's experience is inseparably woven together with the narrative world, materialised via affordances of the audiovisual medium (3). In such a system, narrative is not "a passive container of the events, situations, characters, and actions of the film", instead, it is an "affectively charged environment that does not host events as much as

it generates them" (7). In line with Varela and colleagues, we interpret the interrelation between the experiencer and the narrative environment as that of mutual co-determination, where neither of the parties is considered pre-given but emergent at the given moment (202).

Experiential process

The epistemology we are sketching involves cross-referencing and integrating diverse manifestations of core experience. We formulate this by assuming a continuous process of narrative experience that starts from constructing structured self-awareness by way of narration and continues via intersubjective mediation all the way to cultural narratives.

In what follows, we will first define what we mean by core experience as the assumed starting point, and relying on this then discuss the holistic procedural dynamics of narration in terms of following manifestations:

(1) Core experience ↾ (2) Autonarration ↾ (3) Communicative narration ↾ [Cultural narration][1]

We take that the possibility of identifying and referring to manifestations of the structure of experience in all the three manifestations (first-person descriptions of awareness mediated in structured narratives and observed in physiological phenomena) opens the door to new insights. We trust that despite the ephemeral nature of the structure, there is regularity across time in how these manifestations relate to each other.

Core experience

We consider core experience as nearly synonymous to the phenomenological notion of "pure experience". In James's words: "The instant field of the present is always experienced in its 'pure' state, plain unqualified actuality, a simple that, as yet

[1] Although we recognize cultural narration as part of the ecology of an individual, it is a topic too broad to the current discussion, hence the brackets.

undifferentiated into thing and thought, and only virtually classifiable as objective fact or as some one's opinion about fact" ("A World" 564). This sense is also in line with how Damasio in current neuroscience elaborates the link between and "transient core self" and "core consciousness", both regarded as primordial processes of "life regulation", such that allow the core self to become aware of "things and events inside and outside the organisms" (1879–80).

So defined, core experience is hidden from the first-person subject themself. On this level, what we discuss as experience involves a range of simultaneous neural and other physiological signals, all of which one cannot possibly be aware of simultaneously. Thereagainst, the neural and viscerosomatic functions that co-constitute preconceptual experience may well allow observation. The human perceptual-cognitive system automatically tells signals apart of the overall confusion, analyse their mutual relations, and infer their implications to self even before categories and verbal expressions are available, as was already proposed by James (1904). In this view, core experience emerges within a complex self-organising system, thanks to its embodied signal-processing, which – as we claim – amounts to elementary autonarration.

We have previously presented our model of the *narrative nowness* (Kauttonen et al., "Model of Narrative Nowness") which owes to Varela's interpretation of Husserl's time phenomenology (Varela. "The Specious Present"), which may be interpreted as a suggestion for a temporal structure of experience. There, *retention* is the backward looking context, which in turn readily implies *protention*, anticipation of what is coming. To that structure Varela adds even another dimension, the continuum from "prereflective affective substrate" to "consciousness, the involved self" (Varela. ibid 304). In our interpretation all these elements are superimposed in the experience of *nowness* at any given time and context**.** It is worth pointing out that what we refer to as "structure of experience" is only a transient

emergence in time. Applying Varela's description, it is through chained *retentions and retentions of retention*s that narratives gain their function of explanation-to-self and further allow *protentive* anticipation and intention (Tikka and Kaipainen, "Phenomenological Considerations").

Note that by adopting this path of explanation we deliberately withhold from conceptualizing the opposition of unconsciousness and consciousness (for review, see Kuhn) as given *explanatory* terms. Rather, we regard both of them as mere descriptive qualities of the core of experience, the phenomenon we aim to *explain* by reference to narrative sense-making as a core cognitive function of the homo narrans.

Autonarration

In our interpretation, core experience is the ground level that contains everything before it is gradually structured by *autonarration* (Tikka and Kaipainen, "The Unfolding Now"). This idea draws from a range of previous ideas, such as William James' "stream of consciousness" ("The Stream") or Lev Vygotsky's concept of "inner speech" (226) among a number of related ideas, with the reservation made that unlike these predecessors, autonarration does not require verbalization. It may be proper to give the credits of the idea of self as a narrator or storyteller to Jerome Bruner, the pioneer, innovator, epistemological and methodological elaborator of narrative psychology (Vassilieva, *Narrative Psychology* 13). As he formulates it, "we *become* the autobiographical narratives by which we 'tell about' our lives" (Bruner 694; italics in original). Autonarration may also be associated with what Maturana and Varela describe as self-determination (*autopoiesis*) of a living being. While the world outside does not readily afford sharp-edged *event*s, it is the central task of autonarration to "tell apart" events from the surrounding complexity.

What we call autonarratives are composed of emergent (self-constructed) categories of events, people, objects and conditions, and may take the form of apparent causalities, hierarchies, part-whole relationships, mental maps or other explanatory associations. This constructive function is like connecting dots between separate phenomena in order to construct (and experience) a bigger pattern, that is, an event or a sequence of events in Gestalt theory (e.g. Wertheimer). In another direction, it can also be associated with automated segmentation of events, as observed in the human brain when engaged with narratives, supports our assumption of events emerging in the process (Zacks et al.). Eisenstein, in turn, talks about "pre-logical sensuous thought" (cited in Vassilieva, "Eisenstein/ Vygotsky /Luria's project"). Yet another way to characterize autonarration is to regard it as continuous *simulation* of the world (see Tikka "Cinema as Externalization"; *Enactive Cinema*; and Mar and Oatley). Eventually, autonarration builds timeless objectifications of senses-made, turned to categories via enactive processes of distinction and comparison, that is communicative narration, to be discussed below. The individual's narrative activity extends to communicative narration. While autonarration is preverbal and pre-reflective, embodied intersubjectivity (di Paolo; de Jaegher) paves way to communicative narration.

Relating autonarrative sense-making to machine learning, it may be reasonable and timely to think about sense-making in terms of self-organization, or *unsupervised learning*, computationally modelled by Kohonen among others. This process groups items according to their feature-based similarity *without predetermined category labels* (for review see e.g. Celebi and Aydin).

In sum, we suggest that it has explanatory value to distinguish the embodied, preverbal – preconscious if you wish – organization of events within the surrounding sensory complexity as autonarration, the prerequisite of communicative narration.

Communicative narration

There may be experiential events, but there are no shareable names to them before a common reference is negotiated between individuals who tell about their experience of it to each other. The emergence of communicative narration is made very concrete by the neural phenomenon of mirroring, in which the observer's brain enacts similar neural operations as if herself being involved in the same motor operation (Gallese and Goldman; Hari et al.; Sinigaglia). Because even uttering words involves muscular motion, it should not be far out to assume that another person's words can be somehow mirrored or simulated. Perhaps – slightly simplifying – hearing and seeing somebody say "I love you" on screen affords the feeling of self articulating those words as a muscular activity, thus anchoring the experience to one's own embodied experience (a viable hypothesis). The so-called *theory-of-mind* refers to a somewhat more developed skill, which allows other peoples' mental states to be labelled even if they do not directly correspond to one's own (see Byom and Mutlu for review). These basic mechanisms equip the *homo narrans* with the means to translate its individual autonarratives into elaborate structures of language, images, gestures, sounds and other techniques of communication and signification, ultimately extending to mediated cultures of narratives. All of this contributes to social construction of reality as Berger and Luckmann regard it, and ultimately as "worldmaking" in the sense of Goodman. Herman's idea of constructing comprehension of the (story)world in cognitive narratology is also aligned.

We suggest the autonarrative process that tells apart and makes sense of the complex experience extends further to sharing ("telling") this analysis further, thanks to the intersubjective embodiedness as the common denominator. At least illusions of objectivity arise when individuals can label the shared experience with some mutually observable means, maybe a pantomimic gesture (Ferretti; Arbib), or mediate narrative artefacts (Fingerhut), or when they can establish a shared object of focus, i.e. *deixis* (Tikka and Kaipainen,

"Intersubjectivity"). Embodied states of human situatedness in the world (e.g. being under, or behind, or close to, hiding) offer plenty of affordances for such shareability, as Lakoff and Johnson's theory of metaphors suggests. But also internal biophysical responses to emotional events like humiliation (sweat, blushing) or tension (pinch in the belly) carry potentials for sharing meaning via intersubjective embodiment. Building on the metaphor theory of Lakoff and Johnson, Coëgnarts and Kravaja argue that films elicit intersubjectively shared emotions and narrative sense-making via culturally shared embodied image schemas, such as above.

As a timely computational perspective, shared signifiers of communicative narration may also serve as category labels that can be applied in *supervised learning* (Linnainmaa; Rumelhart et al.), the basis of the kind of machine learning popularly referred to as AI ("artificial intelligence").

Methodologies to access manifestations of sensemaking experience

Within the fields of cognitive psychology and neuroscience there is demand for methods that would allow scientifically valid systematisation of subjective experiences in experimental context, as proposed by the experimental phenomenologist Ihde. As a starting point, the research program of *neurophenomenology* (Varela, "Neurophenomenology") suggests defining mutual constraints of neuroscientific and phenomenological methods in order to devise rigorous study of emergent structures in first-person experience. In the field of film studies, the paradigm of neurocinematics (Hasson et al., "Neurocinematics") faces similar issues concerning the collection and analysis of subjective experiences of the viewers.

The concrete methodical advantage that comes from the study field of narrative film practices is that named film events are indexed with running *clock time* (later, indexed as **t**), that to some extent may correlate with the time of narrative experience of the film viewer, in particular, via the synchronized psychophysiological manifestations of that experience.

Although in the present discussion, time **t** is applied as a conceptual handle to the synchronicity of event manifestations, in practical experimental designs it may be necessary to determine in more detail the time structure of the narrative events (e.g. start-, peak-, and end-times).

Another methodical advantage of neurocinematics is that the film medium provides a constrained and well-defined narrative context (later, indexed as **c**), the key to understanding individual experiences in controllable and documented narratives. In this discussion, however, for clarity, we do not (yet) break the context down into its constituents, whether time-span structures, hierarchies, causational assumptions, inferential chains, or semiotic structures. For the time being, we also must leave it open which discipline(s) might provide the most relevant means for a holistic description of narrative context.

Annotation by narrative practice and research

The most obvious way to start the study of narrative experience of film is to the map and name the events and other narrative structures. It is possible to ask professional filmmakers or researchers of narration to annotate in the footage moments of experientially significant events (Kauttonen et al., "Optimizing Methods"; Rosic and Tikka), that is what happens and when. This might involve identification and categorization of social events, such as a touch, or rejection, or it could mark a turn in the plot, or a cue associated with a threat or anticipation of violence, like a sudden glimpse of a gun in the bedroom drawer. Although this kind of description is not guaranteed to be fully objective, the assumption is that these annotations, although subjectively picked, rely on the professional skills of the filmmakers to reflect common, that is, shareable, understandings. Automated annotation of film footage (see e.g. Pustu-Iren et al.) relying on machine learning is an increasingly viable way of annotating

common labels of events, however critical attention must be paid to whose expertise the learning data represent.

As an example of the methodological role of annotations, the puzzle film *Memento* (directed by Christopher Nolan) has a reverse narrative structure that reveals the chain of prior events in stepwise manner, allowing moments at which new essential details of context force the experiencer to make new context-based inferences (Kauttonen et al., "Brain Mechanisms"). Thanks to its special narrative structure, *Memento* allows for annotating the repeating time points where specific types of plot-related and significant cognitive revelations ("a-ha moments") occur, for reference against both self-indicated experience and its psycho-physiological manifestations.

How about the structure of annotation more generally? In studies of viewer experience, the structure might optimally emerge in the bottom-up direction, that is, from perceptually and cognitively obvious and communicable features toward more abstract events. The annotation methodology would then benefit from both phenomenological analysis as well as psychophysiological observations of sense-making, quite centrally event detection itself ("telling apart"). In contrast, whenever the focus turns to the filmmaker's experience, then the "*designed nature of the mediated experience"* (Eugeni 420) justifies a top-down structure of annotation, a semiotic or narratological analysis of that design, or what constitutes "experiential heuristics" (Lotman et al.) of creative minds.

Microphenomenology

Recent developments in phenomenology have introduced ways to break the barrier between the preverbal and verbal without contaminating the described experience with externally given formulations. One of the promising methods is the interview-based methodology of micro-phenomenology, the study of lived experience (Petitmengin),

developed to gain experiential data in ways close to the standards of cognitive sciences. Micro-phenomenology does so via a refined and rigorous interview and analysis technique. In the interview the interviewer supports the interviewee to attend to a remembered experience in a way that allows the articulation of usually unnoticed embodied dimensions of experience. In the analysis those are systematically compared across participants to reveal generic structures of experience types. It provides an analytic tool that intends to derive generic structures from data beyond purely subjective reports (see Petitmengin; Heimann; Heimann et al.; Rosic). The method allows the description of embodied manifestations of experiences as they freshly emerge in the experiencer's mind.

Neurocinematics, the neurophenomenology of cinema

We regard neurocinematics as a subfield of neurophenomenology. A range of neural phenomena related to experience are observable by means of brain imaging. One of the promises associated with neurophenomenology is to overcome the prevailing suspicion related to introspection as a valid method within psychological sciences. Experiences are, after all, also physiological phenomena. The mission of neurophenomenology is thus to identify mutual constraints of both neuroscientific and phenomenological approaches (see Valenzuela-Moguillansky and Demšar). While cognitive neuroscience has accumulated new knowledge by using context-rich life-simulating films as stimuli in neuroimaging experiments (Jaaskelainen et al., "Neural Processing"; Tikka et al., "Narrative Simulation"), the benefit of neurosciences to the field of film studies has been more indirect (e.g. Fingerhut and Heimann). Unlike the pioneers of neurocinematics, in particular Hasson , who applied film materials as stimuli for neuroscience (see "Neurocinematics"), we believe the main contribution of neurocinematics to understanding film comes through deepening understanding of the embodied experience of film. This contrasts with the conventions of

film studies that are based on external third person /expert) analyses of film narrative, assuming shareability but not explaining it.

Our goal is to apply methods of this already established field in order to open access to the embodied aspects of experience. The central challenges of the approach are to map experiential structures on neural activity, and vice versa, neural activity on experiential structures and functions. The latter include predictive experiential functions such as surprise, curiosity, and suspense. With the examples given below we hope to highlight the potentials of neuroscientific methods to explain phenomenology and practice of film.

Concerning temporal structures of experience we assume: a) nowness (immediately present context); b) retention (narrative memory); and c) protention (narrative anticipations) (for a neurophenomenological overview on experiential time, see Varela, “The Specious Present”; Tikka and Kaipainen, “Phenomenological Considerations”; Kauttonen et al., “Model of Narrative Nowness”). Historically, “surprise”-like effects (against anticipations) were already observed within the rather classic designs of the mismatch-negativity (MMN) paradigm using magnetoencephalography, starting from the 1980s (see Garrido et al. for a review). The standard setting of this paradigm was to prime the experiment with an anticipation-evoking pattern, e.g. a music in a particular key, and then probe the effect of a tone that does not belong to the key. While the extent to which this simplifying paradigm creates insights into narrative sense-making is limited to the duration of the priming sequence (seconds), thus hardly amounting to meaningful narrative context, these priming experiments may be considered early predecessors to experiments with narrative contexts created by a whole night film.

In experimental designs of psychology, the explanatory role of *context* has since the early 2000s been limited to immediate temporal conditioning called *priming before* presenting the stimulus. As a radical departure from this, studying human cognition by means

of film narratives has amounted to significantly deepening explanation of experience as a function of context. However, this approach has been constrained by significant technical challenges related to large amounts of resulting data . However, advancing computational and analytical methods are making it possible to apply films as stimuli for brain-imaging experiments with extensive narrative contexts, such that simulate broad contexts of life, as Tikka suggests in *Enactive Cinema*.

A corpus of evidence has already been accumulated that throws light on understanding how narrative contexts of long durations affect neural activity, and even on how individual experiences become socially shared (for reviews, see Jääskeläinen et al., "Neural Processing"; "Movies and Narratives"). To our best knowledge, Jääskeläinen and colleagues were first to present a full-length Hollywood film for test participants. Their clever experiment design presented most of the film outside of the fMEG scanner and only the last 20 minutes were presented inside it (Jääskeläinen et al., "Inter-subject Synchronization"). There is a number of findings of time-sensitive temporal hierarchies that support temporal segmentation and prediction in film viewing (Bartels and Zeki; Hasson et al., "A Hierarchy"; for a review see Wolff et al.). Also the temporal distance between the moment of experience and the anticipated event seems to matter: the regions in the back of the brain are shown to anticipate the immediate future, while longer-term predictions are made in the more frontal parts of the brain (Lee et al.).

Lahnakoski and colleagues have specifically shown that inserting a psychological context (for example, the characterization of the protagonist as crime detective vs. interior designer) into a film viewing task evokes specific brain activations in individuals with similar perspectives "Synchronous Brain Activity". Generally, regarding the structure of context embedded to the stimulus, the dynamics of retention and protention suggested by Varela ("The Specious Present") may serve as a guideline of hypothesis formation, also with

bearings on established psychological paradigms. If the predicted event – implied by the retentive context – leads to a reaction of release (e.g., suspense), reward (e.g., surprise), or disappointment (e.g., mismatch), this event can be associated with psychophysiological activations, and also be related to the self-indicated description of the experience (see e.g. Berliner; Bermejo-Berros et al.).

Against this background we consider as one of our highlights the neurocinematic study focusing on narrative construction on a high cognitive level using the film *Memento* (as already mentioned), which all subjects view in the scanner. In this study a kind of "aha" effect was captured in the film viewers' neuroimaging data, showing a distinct neural finger pattern activation when new information of the plot was revealed that changed the previous cued narrative understanding of the story (Kauttonen et al., "Brain Mechanisms").

Even the immediate presence of certain kinds of context stimuli can to some extent be identified in neural activity. Activations specific to motor simulation were observed in the fMRI scans of spectators watching the experimental silent film *At Land* (Maya Deren 1944) in which the narrative is carried by the protagonist moving in an obscure but determined manner, including running, climbing, jumping, and crawling (Tikka, "Screendance"; Kauttonen et al., "Comparing Functional Connectivity"). In another study using magnetoencephalography (MEG) and self-ratings of the viewers, body activities of the protagonist of the film *At Land* were shown to induce fine-grained and time-varying vicarious fluctuations detectable on the sensorimotor cortex (Lankinen et al.).

Altogether, there is already a significant corpus of findings concerning neural manifestations of narrative sense-making. Based on established knowledge, it seems conceivable that the emergent process of autonarrative sense-making is a whole-brain phenomenon, while the cognitive organisation of that complexity for communicative narration takes place via more specialised functional connections. As a holistic neuro-

hypothesis, one of the central neural functional networks regularly detected in neuroimaging studies on film viewing could play a crucial role in these cognitive sense-making processes, namely the *default mode network* (DMN) (Tikka et al., "Narrative Comprehension"). DMN may be the key mediator between preconscious emergence of awareness and its formulation to shared narratives. It is "an active and dynamic 'sense-making' network that integrates incoming extrinsic information with prior intrinsic information to form rich, context-dependent models of situations as they unfold over time" (Yeshurun et al. 181). Autonarration can also be associated with mirroring motor involvement, which is at least a hypothetical core function of pre-verbal autonarration (Gallese, "Naturalizing"). Further, it is a reasonable hypothesis that the two brain areas that are generally associated with language, the Broca area (production) and the Wernicke area (comprehension), would be involved in communicative narration. Therefore activity in these areas might provide hints of when autonarration with no language involved turns into communicative narration with shareable names and categories.

Altogether, it may suffice to say that studies under a broad definition of neurocinematics has accumulated a significant amount of multidisciplinary knowhow that can potentially bridge the experience of narration and the art of narrating with embodied intersubjectivity. The epistemology implied will be elaborated below.

Epistemology: Cross-referencing event-related manifestations of narrative experience

The suggested epistemology of narrative experience implies establishing tentative explanatory ties between phenomenological inquiry, cognitive neuroscience, and narrative practices in order to gain indirect insights to the inaccessible core experience, and elaborate them iteratively. The questions to address in this section relate to matching against each other the three manifestations of experience: (1) first-person description of how she becomes aware

of an experience thanks to autonarration, (2) psychophysiological observations of how such autonarration manifests in the body-brain system of typical subjects as event-related activity that can be associated with certain emotio-cognitive or social functions thus allowing embodied intersubjective reference to events, and further (3) third-person apparently objective descriptions of how those events are organized into narratives. None of the mentioned has exhaustive self-explanatory value without cross-reference to other manifestations..

To distinguish precisely determined events within such experience, the mentioned descriptive and observable manifestations of experience are referred to with **E,** with index **s** referring to subjective**, m** for mediated and **p** for its psychophysiological manifestation**.** The pre-requirement of the proposed epistemologyis that triangulation between the manifestations of experience is synchronised to clock time **t.** Thus our notation for the three manifestations at **t** is **Est, Emt and Ept,** correspondingly**.** However, they stay meaningless without sharing also context **c**. The manifestations defined so as to allow cross-referencing are as follows:

1) Self-indicated event **Esct** of an individual **s**, an identified experiential entity that correlates to context **c** at time **t** in core experience, partially accessible by means of phenomenological inquiry.

2) Mediated event **Emct** accessible via intersubjectively shared descriptive means of medium **m** (e.g. film footage, script, or annotation) conveying narrative context **c** at time **t**.

3) Psycho-physiological activity corresponding to event **Epct** of an individual **s** when engaged with context **c** at time **t**, partially accessible via physiological measures and observations.

Regarding index **c**, it is a shorthand for a range of things that can constitute the context. Narrative context can relate to, for example, to clue-related events, such as "encounter with X" or "gun revealed", or psycho-social events such as "deceit", "justice delivered" or "disappointment", or they may be related with apparent moments of tension release, such as "just-in-time-escape". Notably, what constitutes a significant context is not a momentarily experienced event but an accumulated history of that specific event, with all possible associations that an individual **s** may relate to it. However, out of all possible context factors, here we focus only on what can be controlled by the methodology we rely on, that is, narrative contexts that can be mediated by film footage. Each of these manifestations will be discussed in more detail below.

Experience as self-indicated event

The self-indicated experiential event **Es** is assumed to be constructed by autonarration. It corresponds to a state of awareness such that allows for indicative description of a manifestation of experience. We trust that rigorous reflective descriptions of **Es**, when associated with equally rigorous detailed annotation of the mediated event **Em** in specific context **c**, may allow for phenomenologically informed insights to the shared experience. Ideally, analytical inferences based on subjective self-indication **Es** would not only have to build on analysis of verbal evocation of the lived experience (e.g. micro-phenomenology) but it also may take into account the analysis of bodily movements (e.g. Carmichael and Mizrahi; Hall et al.) that accompany the experiencer's verbal account. Then, a data consisting of co-occurrences of **Esc** and **Emc** in shared context **c,** collected over a sufficient number of subjects, would imply intersubjective embodiment. This would justify seeking for explanatory references also between **Estc** and **Eptc**, allowing insights to the core experience.

A range of observable psychophysiological activity **Ep** can in principle provide hints of pre-verbal experience associated with **Es**. A methodical challenge, however, is how to determine the point of synchrony **t**, or a time interval t when **Est** is regarded to take place. This is non-trivial because any verbal report would always refer to a memory of something that happened in the past, leaving it open when the experience starts, ends or climaxes. There may be ways to go around this, perhaps indicating reference time **t** with some kinds of buttons or sliders (see Lahnakoski et al., "Stimulus-related"). This also relates to the length of the retentive context. In principle, an individual's everyday experience has an infinitely long context; it may go all the way back to birth, and in the evolutionary perspective even beyond (Vassilieva, *Narrative Psychology*), in that case obviously going beyond control of psychophysiological experiments.

Another way to synchronise **Eptc** with **Estc** is co-registration, that is, applying psychophysiological methods, e.g. electroencephalography (EEG) simultaneously with some attention-indicating methodology like eye-movement tracking (e.g. Ceh et al). Besides verbalised accounts of **Estc**, there may be other ways to self-indicate core experience, perhaps more directly related to motor related simulation. The established mirror neuron system, already discussed as a neural prerequisite of communicative narration, implies that mirroring of another person's movements might be an important part of the preverbal **Estc**, hence likely traceable as **Eptc**.

Experience related to mediated event

A mediated event **Emtc**, such as an excerpt from cinema, allows sharing the same narrative context with many people, resulting in intersubjective correlation of physiological responses in their body-brain system, that is, **Eptc**. In experimental settings, film narratives are applied to stage the conditions of the experience. Films contextualise receding events,

locations, epochs, or even the great narrative of a nation as the background against which the individual experiences the narratively mediated events.

Besides intersubjective sharing by common embodiment, we suggest that the key for sharing narratives is passed temporal context, in terms of the Varelian-Husserlian structure of experience retention, thus per definition a necessary structural condition of an individual's experience **Estc**. If the experiencer accepts context **c** mediated by **Emtc** as a substitute for her own experiential retention just as if it was her own experience, she will seamlessly interpret it as a ground for certain protentive anticipation. In addition, cinematic settings are usually designed to refer to commonly recognizable experiences such as the threat of danger or violence, poverty, or the desire for love. Every fan of Westerns may confirm that genre conventions can create very strong predictability. Thus, knowing the narrative structure implies a certain *structure of experience*.

To recognize the limitations of this approach, it is crucial to point out that context **c** is only a rough simplification standing for what constitutes an enormous complexity, consisting of a chain of events that has started already long ago, in principle the big bang and the entire evolution of species since. Back to the time scale of a movie, **Emtc** can refer to events that were shown in the beginning of the film two hours ago. At the same time the film medium itself can compress a lifetime or the history of a nation to one narration, from a selected point of view of course. Inversely, this must also mean that there can be cases in which experiencer **x** fails to share a **Ept** with other subjects, possibly due to individual context **cx**, perhaps due to a "bad day" or even some childhood trauma that happened to be teared open by the narrative. In sum, studying **Estc** in synchrony with the annotated **Emtc** may reveal experience-determining factors in the narrative context.

Below we will discuss what the co-occurrence of **Eptc** with **Emtc** and **Estc** might imply**,** besides intersubjective embodiment.

Embodiment of narrative experience

We have put forward the hypothesis that narrative experience **Estc** is fundamentally embodied, and it should therefore manifest as psychophysiological activity. It may not be directly possible to confirm or falsify this hypothesis but triangulation study is more likely to shed light on what conditions the intersubjective embodiment hypothesis holds, and perhaps to what degree other factors, such as mediated narrative context, may override it.

The embodied manifestation of subjective experience **Estc** is to a degree objectively observable. Unlike traditional psychophysiological experiments with simple sensory stimuli without context, narrative experience at time **t** assumes the stimulus to include narrative context **c** mediated by medium **m**. Further, we have assumed that **c** is a simulation of situations and chains of events such that the experiencer can identify with, and therefore successful **Emtc** can evoke a holistic experience as if being there and living by herself the at time t.

Concerning **Estc,** the observation of it in synchrony with **Eptc** allows therefore explanatory embodied implications beyond self-reported descriptions of the experience. The measurable aspects may manifest identifying with the situation and the persons, for example in terms of mirroring or theory-of-mind, or indications of tension vs. release, among a range of describable emotional aspects.

For both mentioned manifestations at time t, the mediated experience **Emtc** provides a shared narrative context explicitly spelled out. It is part and parcel of the same narrative experience, relating to the communicative and thereby also cognitive aspect of it. In terms of **Eptc** data, one has to assume that the psycho-physiological manifestation contains traces of every level of narrative sense-making from pure experience to autonarration to communicative narration, through an extended period of time, altogether amounting to great

complexity. Analysing it presupposes a well-structured analysis of the narrative mediated by **Emtc.**

We have introduced neurocinematics as a paradigm that analyses the relations between **Emtc** and **Eptc** with narrative context **c** as the key**.** The paradigm can combine experience from narrative practice as a potential way to provide relevant analyses of the complexity of the narrative. Context **c** may refer to, say, contextualizing elements being planted, such that create narrative tension and expectations over time, maybe fears of identification, which later either realize, or cause surprise or disappointment, for example. As indicated earlier, **c** is only a shorthand to a range of other variables regarding narrative structure, temporal distance of contexts, individual contexts from daily social encounters, films seen, books read, all the way to events on the level of life-story.

A central challenge is to find out what constitutes event E in each manifestation. Under the neurophenomenological research umbrella, following Varela's model of the structure of experience, we depict four dimensional axes (x, y) that intersect in the point of experiential time **t**. Both axes form a continuum, one from "trajectories of retention" to "open horizon of anticipation" and the other from "prereflective, affective substrate" to "conscious, reflective self" (Varela, "the Specious Present" 304). We take that at any time **t**, the entire experiential space fuzzily limited by these two continua is involved in the physiological activity **Eptc**, however, typically distributed across networks of the brain's anatomical structures which are to an extent known and identifiable, thanks to neuroscientific litterature.

In the proposed triangulation, the self-indicated event **Estc** in itself may not be much more than an observation of something meaningful that can be *told apart* of everything else going on, thanks to dedicated sensory-neural mechanisms, but it is likely to refer to a rich spectrum of embodied and mediated characteristics. However, it does not yet provide a language and conceptualization to describe that something in a shareable manner. It is only

via the communicable and mediated narration that **Estc** gets associated with the shareable event **Emtc** with a name, conceptualization and a category, also informing embodied faculties with a potential of being observed in terms of known anatomic-functional networks of the brain.

In order to imagine how the embodied experience **Eptc** plays together with **Estc** and **Emtc,** consider experience **E** in narrative context **c** = "rejection" in a film setting, **Est[rejection]** that the experiencer may describe in rough terms as "makes me cry", or "upsetting", but for which there is not necessarily a sufficient verbal description. There is also the film medium that builds the communicable story context **Emt[rejection],** against which the feeling appears reasonably interpretable ("she was lied to"). But even if such a parallelism can be established, it is not enough to explain how and why the experiencer feels the event that way, or what other embodied feelings may be involved. However, the synchronous match of **Est[rejection]** with **Emt[rejection]** provides a starting point to search for corresponding embodied processes that constitute the **Ept[rejection],** in a concretely defined time range, the potential neural networks that delimit the search of involved psychophysiological co-determinants of the experience.

For example, they may involve pointers to the feeling of being moved, maybe tear secretion, facial muscle activity known to be typical of the experience of rejection, or indications of musculo-neural mirroring of motor gestures associated with being scared or angry. There may be a traceable burst of adrenaline or neurotransmitters with a known psychological relation to the emotions involved.

Altogether, through analysing *the embodiment of narrative experience* significant explanatory value can be gained that may complement simplified verbalizations of **Estc**, ideally constituting a spectrum of *embodied semantics,* which in turn makes possible the design of **Emtc,** mediating the simulated experience at time **t** in context **c**.

Discussion and conclusion

We not only associate narration with holistic sense-making, but we also relate experience with sense-making. We have taken the liberty of rewording the story of how an individual's sense and awareness of the environment and its event-based structure might emerge, first as what we call autonarration which forms the foundation of interpersonal communicative narration, and from which eventually cultural narration emerges, although we left the last step to a mere proposition to be discussed elsewhere. To understand the role of narration through this continuum, we have sketched an epistemology that accumulates knowledge by way of interrelating three mutually complementary perspectives to the process of narration: 1) an individual's self-indication of her preverbal core experience; 2) the experience as it is mediated to others by means of verbal and visual communication; and 3) the manifestation of both as embodied activations. Therefore each of the manifestations of this process can contribute to the big picture by filling explanatory gaps left by the two other manifestations in relation to each other. The triangulating epistemology can proceed via making iterative references between the manifestations of the phenomenon. This involves cross-disciplinary data collection and analysis. Relating to the discussion initiated by Kuhn on the instrumental criteria for an explanatory theory of consciousness (see "A Landscape of Consciousness"), the insights gained are not anchored to simplifying ontological assumptions but rather geared to dynamics of how objectifications of experience take shape. Neither does the sketched epistemology assert causal relations, but is rather an effort to describe how apparent causalities are constructed by way of narration.

For methodological reasons, we have mostly focused on film narrative as the medium that carries contextualized experiences. Firstly, the film medium conveys a narrative context that serves as a simulation of life, potentially referring to the experiencer's embodied experience. Secondly, the film medium comes with *time index* **t** that allows – with certain

limitations – for synchronizing the temporally unfolding cinematic medium with three different manifestations of the narrative experience: 1) phenomenological analysis of how an individual feels and describes an event, 2) the psychophysiological observations of how the species-specific system generally implements that event-related feeling, and 3) professional annotations of how these events are conceived of and communicated by the cinematic medium?

We have referred to a corpus of seminal findings in neurocinematics in which the cinematic narrative events and the psychophysiological events related to that experience have been mapped against each other and discussed on their implications. In order to gain more explanatory depth beyond these event-physiology mappings, we have suggested phenomenological analysis of those experiential events (1) as well as deepening the understanding of the temporal structure of the narratives that condition the experiential events (3).

The critic of our approach will be right to make the point that trusting an *event* as the unit of narrative sense-making is elliptic since event-definition is also the object of constant sense-making and experience. However, this kind of epistemological self-reference reflects the very foundation of our approach, that is, the dynamic nature of autopoietic self-determination as it is described by Maturana and Varela (“Autopoiesis”). The critic might also point out that the methods applied in neurocinematics have so far been limited to identifying similarities between film viewers (e.g. intersubject correlation, Hasson et al., “Intersubject Synchronization”) and therefore less focused on accessing idiosyncratic experiences. However, any verbal reports of experience would in any case rely on objectification by means of intersubjectively generalizing language. In our conceptualization, individual autonarration and communicative narration not only follow each other in a sequence, but they also co-occur and define each other. Further, even in neuroimaging, novel

methods that allow for accessing idiosyncratic aspects of experience are gradually emerging (see Finn).

Obviously, we are aware of the numerous challenges in designing experiments with multiple different manifestations with potentially incommensurable methodologies. One way to start resolving such emerging issues is their analysis in terms of mutual constraints (Varela, "Neurophenomenology"). Another non-trivial challenge is how to avoid experimental biases that are induced to the design and interpretation of data (see e.g. Holman et al.). Yet another concern, well recognized in contemporary psychology, is how to secure the replicability of the studies (e.g. Adali and Calhoun).

We are positive that experimental phenomenology, descriptive film studies and neurocinematics will, if epistemologically and methodically coordinated, be able to bridge current gaps in understanding narration and experience to start with, and narrative experience as the resulting encompassing phenomenon.

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A Case for Embodied Cognitivism: The Cognitive Unconscious Basis of Cinematic Communication

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Abstract

This article examines the role of the unconscious in cinematic communication from an embodied cognitive perspective. Drawing on insights from perceptual psychology, art psychology, cognitive film theory, and neuroscience, it argues that both the creation and reception of cinematic art are rooted in cognitive unconscious structures of shared bodily knowledge, involving both bottom-up processes and predictive inferences. To support this, the research program of embodied cognition is explored in relation to the triad of filmmaker, film, and spectator. The resulting dynamic framework is then illustrated through a specific film analysis.

Keywords: affordances, cognitive unconscious, embodied cognition, film analysis, image schemas, metaphor, perceptual meaning, visual thinking

Introduction

The question of whether the unconscious influences our viewing experience has long intrigued both filmmakers and theorists. In the 1920s, the first notable influence of the concept of the unconscious on filmmaking came through the Surrealist movement, which was deeply inspired by Freudian psychoanalysis (Creed 75). Artists and filmmakers like Luis Buñuel and Salvador Dalí embraced irrational, dreamlike sequences in their works to evoke the workings of the unconscious mind. While this was an artistic, rather than strictly theoretical, application of Freud's ideas to film, it was in the 1970s that psychoanalysis became fully integrated into film theory. This period coincided with the rise of structuralism and post-structuralism in the humanities, which sought to uncover the deeper structures and mechanisms underlying culture and society. From the 1970s to the 1990s, psychoanalysis became one of the dominant approaches in film theory with scholars such as Christian Metz, Jean-Louis Baudry, and Laura Mulvey exploring the kinship between the visual properties of cinema and unconscious mental states in different, but related

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directions, while also expanding on Lacanian theory to explore the construction of the viewer in terms of questions of identification, ideology and gender (Creed 78).

In recent decades, however, with the advent of the cognitive sciences, psychoanalytic theory has faced significant criticism from various scholars and intellectual traditions, both within and outside of film theory. The critiques often focus on its scientific validity, and its broader theoretical assumptions (e.g., Allen; Carroll *Mystifying*; Prince). Most revealingly, the cognitive sciences also provided a new understanding of the unconscious (Kihlstrom; Stein). As the American cognitive linguist George Lakoff put it:

> To Freud, unconscious thought was thought that could, in principle, be brought to consciousness. It was thought that was, to a large extent, repressed – too painful to be brought to consciousness. The cognitive unconscious is not like this at all. The kind of unconscious thinking studied by cognitive science cannot be done consciously. It is thinking that is extremely fast, automatic, effortless, and completely normal. It is what we call 'common sense'". ("How Unconscious" 89)

Here, the unconscious refers to mental processes that occur outside of conscious awareness but still influence conscious thoughts, behavior, and decision-making. Rather than being about repressed desires and irrational behavior, the cognitive unconscious emphasizes that many of our mental activities – like perception, memory, and reasoning – operate automatically, without conscious effort or awareness.

In this process metaphors are given a central role, as they are believed to be crucial in how we comprehend and organize abstract concepts. Lakoff and philosopher Mark Johnson, in their seminal work *Metaphors We Live By* (1980), argue that metaphors are not just figures of speech but fundamental to human thought. They are so ingrained in our thinking and communication that we use them automatically without being aware of their metaphorical nature. For example, the metaphor "time is money" is based on our everyday experience of

time as a resource that can be spent or saved. We unconsciously use this metaphor to structure how we think about time, but we do not actively reflect on its metaphorical roots. Moreover, these conceptual metaphors, as they coin them, are fundamentally embodied. They are not governed by the kind of structures we find in language proper. Rather they are strongly conditioned by our bodies and the environments in which they operate. This view adheres to the broader research program of embodied cognition and links our faculties of thought to our sensorimotor faculties and sensorimotor experiences (e.g., Claxton; Gibbs; Johnson and Schulkin; Lakoff and Johnson *Philosophy*; Tversky; Seth).

In this article, we adopt the embodied cognitive perspective on the unconscious as a theoretical basis to reconsider its role in cinematic communication. By this, we refer to film's ability to convey or "communicate thoughts about its subject matter", which Berys Gaut describes as the medium's "representational capacity" (Gaut 24).[1] To explore this idea, we will develop an argument based on two central points.

First, we propose that our embodied interactions with the world create recurring patterns of sensorimotor experience, known as "image schemas", which form the foundation of the cognitive unconscious (Hampe; Hedblom; Lakoff *Women*; Johnson *The Body*). These schemas serve as the primary format through which perceptual meaning is understood, representing the earliest forms of meaning in the mind. Additionally, the brain relies on this bottom-up perceptual information to make rapid, unconscious top-down inferences about what we perceive through sight, sound, or other sensory experiences. Perception, therefore, is

[1] Here, we use the term "representation" in a broad sense to refer to "the intention as well as level of competence to represent or compose a theme" (Golomb, "Art and the Young" 120). Later we will also use the term in a cognitive sense to refer to the representations of the mind (i.e., "mental representations"). In explaining the nature of film's representational capacity, it has long been the academic fashion to model it on linguistic meaning. This semiotic view conceives cinematic communication as a process of decoding signs whereby the meaning of a work is derived simply by looking at the objective language-based rules of the form (e.g., Carroll *Structural*; Metz). More recently, cognitive film scholars have criticized such a view for it implies that meaning operates in a realm of disembodied relational constructions since our own embodied minds are not seen to motivate the meaning of signifiers (e.g., Coëgnarts; Coëgnarts and Kravanja; D'Aloia; D'Aloia and Verstegen; Fahlenbrach).

not a passive reception of sensory data but an active process involving the brain's inferences and predictions, shaped by prior embodied knowledge and contextual cues (Seth).

The second argument, building on the first, is that both the creation and reception of cinematic art are fundamentally grounded in these cognitive unconscious structures of shared bodily knowledge. This involves a combination of bottom-up processes and predictive inferences. The representational meanings transmitted through a film's formal design reflect the deeply embodied processes of the human brain, echoing the ways we engage with the world in everyday life. Through this shared embodied knowledge, filmmakers are able to communicate with audiences in a powerful, unconscious, and perceptual manner (Coëgnarts "Shaping Films").

We conclude the article by illustrating these theoretical points with a brief case study of cinematic art, demonstrating how our framework applies to the analysis of film.

The cognitive unconscious basis of cinematic communication: A theoretical outline

Cinematic communication can be understood broadly through two key relationships, which also underpin any mode of expression: the relationship between the filmmaker (the author) and the film (the art work), and the relationship between the film and its audience (the spectator). The first concerns the film's creation, while the second addresses its reception. In the following sections, we explore how both relationships are shaped by the concept of embodied cognition, using it as a theoretical framework to explore the cognitive unconscious foundations of cinematic communication. Figure 1 visually supports this argument by illustrating the connection between mind and world as the primary embodied relationship that underpins the other two. Because both filmmakers and viewers share a similar bodily makeup, at least in a general sense, a connection is formed among the three elements of the triad:

filmmaker, film, and viewer.[2] This triadic relationship introduces the phenomenological concept of intersubjectivity, which we will explore in greater depth in the fourth and final part of the model.

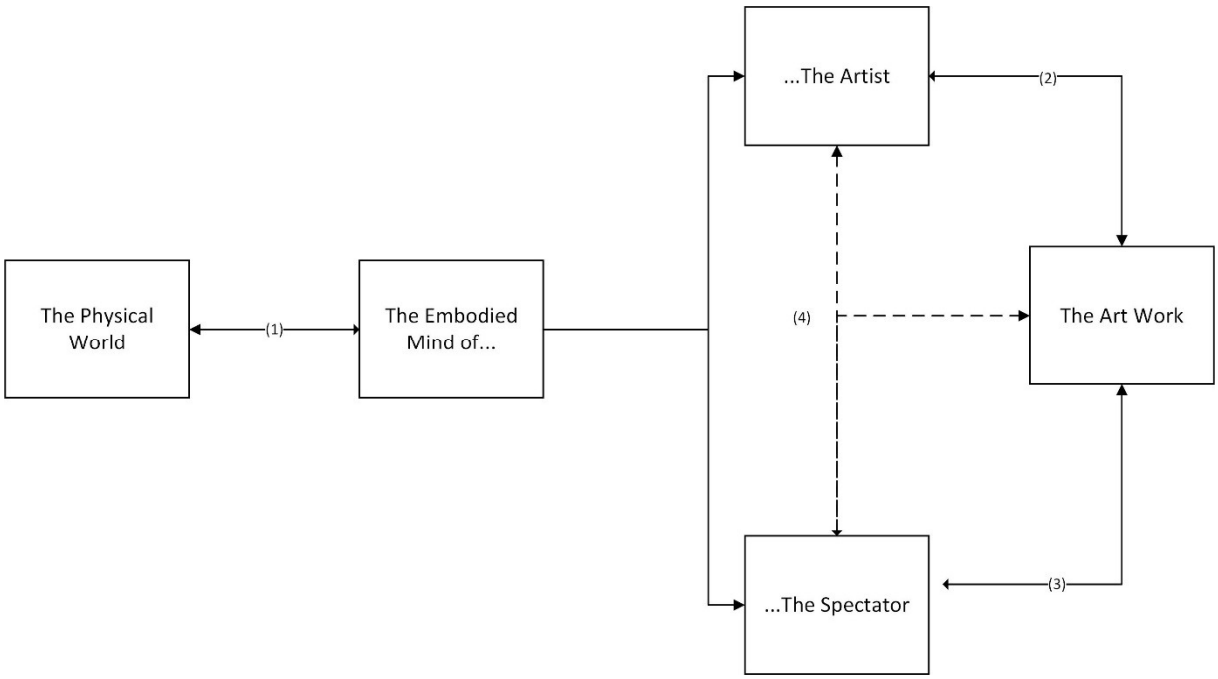

Figure 1. The embodied cognitive foundation of cinematic communication.

World and mind

To grasp the cognitive unconscious foundation of cinematic communication, it is essential to understand how the mind interacts with the physical world. This relationship can be described in two directions: from the world to the mind ("outside-in") and from the mind to the world ("inside-out").[3] The first direction highlights the role of the bodily unconscious in forming mental representations, while the second focuses on how the embodied mind unconsciously shapes our perception of the environment.

1. From world to mind ("the outside-in")

[2] The idea of using the triadic relation between artist, work, and audience as the structural foundation for this article, came from John Dewey (*Art and Experience* 110-111).
[3] The distinction between the "outside-in" and the "inside-out" is borrowed from Anil Seth.

To begin understanding the first vector (world → mind), we can look to James J. Gibson's influential concept of bodily affordances. Gibson introduced the notion of affordance to highlight the complementary relationship between an organism and its environment. "The affordances of the environment," Gibson writes, "are what it offers the animal, what it provides or furnishes, either for good or ill" (119). This is how, for instance, physical properties of terrestrial surfaces (i.e., horizontal, nearly flat and sufficiently extended) afford support as well as opportunities for action: they are "climb-on-able or fall-off-able or get-underneath-able or bump-into-able relative to the animal" (120). Different layouts afford different physical encounters and different embodied abilities. As such, Gibson writes, an affordance oscillates in two directions, to the environment and to the observer. This "reciprocity", as he calls it, makes an affordance "neither objective nor subjective" (155).

In its coupling of the organism to the environment, which gives rise to what John Dewey calls "the live creature", and its cutting across the subjective-objective dichotomy, Gibson's ecological theory of affordances already anticipated one of the core non-dualistic assumptions of embodied cognition, namely that the nature of conceptual organization depends fundamentally on the interaction with the physical world. In his book *Being You: A New Science of Consciousness* (2021), neuroscientist Anil Seth takes this claim to be the core idea of his theory of consciousness and self, which he coins the "Beast Machine Theory". Critically alluding to Descartes' dualism, he asserts that "our conscious experience of the world around us, and of ourselves within it, happens with, through, and because of our living bodies." We cannot understand the nature and origin of consciousness and self, unless we consider ourselves as living acting creatures in the world.[4]

Reconsidering the mind in terms of the body, however, entails that we radically

[4] In philosophy this idea has been best expressed in the view of the American pragmatist John Dewey. In an oft-quoted passage from *Art and Experience* the author writes: "Life goes on in an environment; not merely *in* it but because of it, through interaction with it" (19, italics in the original).

rethink, as Johnson (*The Meaning* 132-133) does, the classical representational theory of mind. This theory, which forms the basis of classical cognitivism (e.g., Chomsky; Fodor), conceives mental representations as abstract symbol-like entities ("concepts" or indeed "representations" in our "minds") that have the capacity to be about something in the world. Thinking then is "a matter of manipulating these entities by surveying their properties, discerning their relations to each other and to mind-external objects, and arranging them in internal acts of judgment" (132). As Johnson has repeatedly stressed throughout his work, such a view is of no use in explaining the kind of organism-environment interactions that Gibson was writing about.[5] Instead of abstract mental processes, which are describable in disembodied computational terms, we need a conception of the mind that considers mental representations in light of their intrinsic ties to the body's action, and sensorimotor experience. The challenge of embodied cognition, as Johnson (*The Meaning* 136) highlights, is then to explain how the features of meaning-making "emerge from our bodily experience (i.e., sensorimotor activity) and yet serve as the foundation for abstract thought."

One framework that has been proposed in this regard is Jane Mandler's theory of perceptual meaning analysis (59-91). This model aims to capture the process by means of which the perceptual information, as afforded by the environment, becomes conceptualized. As she argues, the capacity to engage in perceptual meaning analysis already starts at an early age as human infants analyze objects and events into spatial and analog redescriptions (91). Adopting the terminology of Lakoff and Johnson, Mandler calls these redescriptions, which enable nonverbal thought, "image schemas". Image schemas provide the cognitive unconscious format in which perceptual information is couched. They are conceived as unconscious because they are fundamental cognitive structures that shape how we understand and interact with the world, often without us being aware of them. They are patterns of

[5] For this reason Johnson is hesitant to use the concept of representation for it all too easily evokes the idea of concepts in the mind that, like language, refer to a state of affairs outside of the mind.

sensory-motor experiences formed early in life through repeated bodily interactions with the environment. Since these schemas arise from such basic, pre-verbal experiences, they operate beneath the level of conscious thought, guiding perception, reasoning, and action automatically.[6] They are also representations, but in a limited sense that is "acceptable" from an experientialist point of view (Johnson, *The Meaning* 133). A typical example of an image schema would be the container image schema, the inside-outside logic of which has been claimed to play a significant role in our metaphorical reasoning about abstract phenomena such as time, emotions and mental faculties (Johnson, *The Body* 22-23, *The Meaning* 138-139; Lakoff 271-273; Lakoff and Johnson, *Philosophy* 31-32). This cognitive mechanism lies at the heart of Conceptual Metaphor Theory and entails that humans think about abstract things in terms of more familiar concrete concepts that are deeply rooted in embodiment (Lakoff and Johnson, *Metaphors*). As we already stressed above, metaphor is not merely a linguistic feature, but a fundamental part of our everyday life that is deeply grounded in our conceptual system. This is how, for example, sentences such as "I am *in* love" or "Times *flies by*" become manifestations of a pre-conceptual way of spatialization that is founded on the logic of image schemas. As we shall see further below, it is precisely this sort of visual thinking that art psychologists such as Arnheim and Argenton have identified as crucial for the unfolding of artistic activity.

2. From mind to world ("the inside-out")

Our perception of the world does not only involve bottom-up processes, it is also construed by top-down expectations or predictions formed by the embodied memory of the "live creature". In other words, the mind also construes our perception of the world (mind →

[6] Also here it is informative to quote John Dewey: "There are common patterns in various experiences, no matter how unlike they are to one another in the details of their subject matter. … The outline of the common pattern is set by the fact that every experience is the result of interaction between a live creature and some aspect of the world in which he lives" (45).

world). Perception begins with the operation of the information derived from perceptual meaning analysis (prior embodied knowledge) that generates an embodied mental model through which the visual world is apprehended. To couch this "inside-out" process we may resort to the theory of unconscious inferences as it was first introduced by the German physicist and physician Hermann von Helmholtz. Helmholtz proposed that some of our visual perceptions result from unconscious inferences in which sensory clues are interpreted to form hypotheses about the perceptual world (Kandel 202-203; Seth). Thus, the inferential view of perception suggests that perception is not merely the passive recording of incoming sensory data but involves the brain making inferences and predictions based on prior knowledge, expectations, and contextual information. Before we perceive an object, our brain has to infer what that object might be (i.e., creating an hypothesis), based on information from the senses. Above we have seen how this sensorial information can be couched by a process called perceptual meaning analysis that operates at a pre-conscious level. In the history of cognitive science, however, the inferential view of perception has often been perceived as disembodied due to the strong emphasis that traditional cognitive science has placed on computational and representational (linguistic) approaches (e.g., Chomsky; Fodor). This may give the impression that the body's sensorimotor interactions do not play a prominent role in shaping perception.

More recently, however, this perceived disembodiment in the inferential view has been challenged by scholars who recognize the cognitive unconscious influence of the body on perceptual processes. Anil Seth, whom we already introduced above, advocates an inferential account of consciousness and selfhood that is explicitly motivated by the theme of embodiment. Seth makes the fundamental case that all our experiences are always and everywhere grounded in a projection of brain-based perceptual expectations onto and into our sensory environment. As he argues, these predictions about the noisy, shapeless and

ambiguous sensory flow together sculpt an optimal perceptual inference (a best guess) about the most likely hidden cause for the observed data. The result of these predictive processes, which the author further describes in Bayesian terms, is a vivid perceptual picture, which Seth calls a "controlled hallucination" that arises "with, through, and because of our living bodies" (7). To reveal the effect of top-down knowledge on perception, and to show how perceptual expectations shape conscious experiences, the author offers multiple examples of visual stimuli such as the famous two-tone (aka "Mooney") image and the phenomenon of pareidolia.

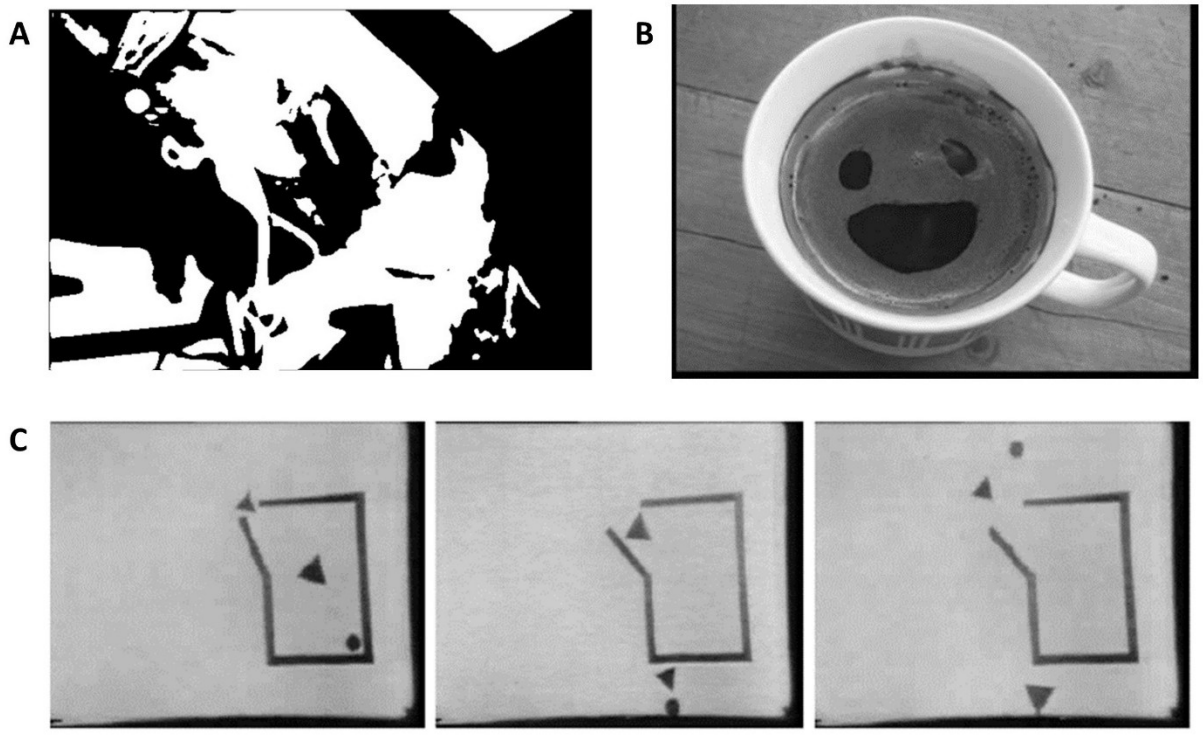

Figure 2. A, the famous two-tone (aka "Mooney") image (after Teufel, Dakin and Fletcher), B, the phenomenon of pareidolia (right), and C, screenshots of Heider and Simmel's 1944 classic animation experiment.

In the first example the subject is first instructed to take a look at the two-tone image in Figure 2A, which appears as a series of meaningless black and white patches.[7] Then, the

[7] This figure is taken, with permission, from Teufel, Dakin and Fletcher.

reader is instructed to look at another image before returning back.[8] While the sensory input has not changed at all from the first viewing, the two-tone image now suddenly resolves into a coherent scene. As Seth explains: "All that's changed are your brain's predictions about the causes of this sensory data, and this changes what you consciously see" (92). It is in a similar sense that the author also makes reference to the phenomenon of pareidolia, the human tendency of seeing images (from the Greek "eidos") or meaningful patterns in things beside or beyond ("para") what is visually given. This is how, for instance, our brain is attuned to see faces everywhere, the significance of which "means that our brains come preloaded with strong face-related prior expectations" (123). Both examples are closely related to what in Gestalt psychology is known as closure, the illusion of seeing an incomplete stimulus as though it were whole (Zettl 123).[9] While Seth only cites static images to make his claim, his list of examples could easily be extended with cases drawn from animation and moving images. A rich line of research worth mentioning are the experiments that began with the classic works of Albert Michotte as well as Fritz Heider and Marianne Simmel. These studies in perceptual psychology show how simple and schematic visual displays consisting of moving 2-D geometric shapes yield percepts with high-level properties such as causality and animacy (for a review, see Coëgnarts and Slugan). When respondents were asked to describe Heider and Simmel's 1944 classic animation (see Figure 2C), the majority of people would not only provide an objective description of the screened kinematics, they would also interpret the geometrical figures as being alive and having personality traits, emotions and intentional states. The significance of such phenomena stems from the fact that these readings appear to be largely perceptual in nature. We will see further below how this inferential

[8] The other figure can be accessed at the following URL: https://www.nature.com/articles/s41598-018-28845-5 Both figures are also included in Seth's book (95).

[9] The famous psychologist of art Richard Wollheim has coined this fundamental perceptual capacity "seeing-in". He believed that artists rely upon the spectator "to have and to use" this capacity when beholding their creations (45). Wollheim explicates the twofoldness of "seeing-in" as follows: "When seeing-in two things happen: I am visually aware of the surface I look at, and I discern something standing out in front of, or (in certain cases) receding behind, something else."

perceptual tendency of pattern recognition also extends into our experience of watching films, but before delving into this discussion, we need to consider first how works of art are themselves shaped by the preconceptual structures of the embodied mind of the artist.

The author and the work

If we accept a definition of the mind that foregrounds the significant role of bodily-based representations or schemata in perceptual thinking, then how should we consider its implications for symbolic artistic activities such as painting, sculpturing and filmmaking, the main focus of this article. Here we shift the focus from the relation between the world and the human mind to the connection between the embodied mind of the artist and the work of art. In starting to unfold this relationship it is worth reviving a rich line of thinking about art psychology and art education that may have been overshadowed by the long-year dominance of linguistic models in our theoretical apprehension of art and mind, but that certainly deserves renewed recognition in the light of the current embodied cognition and neuroscientific research landscape. I am referring to such authors as Rudolf Arnheim (*Art and Visual*; *Visual Thinking*), Richard Wollheim, Claire Golomb (*The Development*; *The Child's Creation*), Henry Schaefer-Simmern and Alberto Argenton (see also Messina-Argenton et. al.), who all defended a robust mentalistic conception of artful representation that is strongly rooted in the non-dualistic notion of visual thinking, that is, the assumption that thinking does not take place outside the realm of visual experience, but within (Arnheim *Visual Thinking*).[10] Similar to the ideas of Gestalt psychology and Mandler's perceptual meaning analysis, Argenton, for example, suggests that meaning is extracted from perception before it is processed at a higher cognitive level. This means that perceptual meaning is not dependent on

[10] While Arnheim stressed visual thinking, or thinking in images, thinking nowadays is usually considered multimodal, meaning that cognition works "with multimodal simulations that are based on the partial re-enactment of neural networks which supported perceptual, motor, and introspective states during the person's experience of the world, body, and mind" (Iachini 17).

language or abstract thought, but is instead rooted in immediate sensory experience. It refers to what the shape of an artistic work "considered as Gestalt, contains and transmits" and which "we first and spontaneously grasp, even if we know nothing about the subject, the style or the culturally given meanings that the shape itself might represent" (Messina-Argenton et. al. viii). This implies that perceptual meaning operates largely at a cognitive unconscious level. Since meaning is derived directly from perception without the need for cognitive reflection or linguistic interpretation, it suggests that much of this meaning-making process happens automatically and unconsciously. Individuals often grasp the meaning of visual stimuli without being aware of the mental processes involved, as the brain quickly organizes and interprets the sensory input into meaningful patterns.

Moreover, Argenton, like Arnheim, maintained the view that the perceptual aspect or meaning "must necessarily have been grasped" in order to grasp what he calls the "representational meaning" of a work of art. The representational meaning "is believed to be the 'true' and 'unique' or, in any case, the 'most relevant' meaning that the artistic work contains, and therefore the comprehension or the 'enjoyment' of the work itself is often believed to be or should be exclusively based on it" (Messina-Argenton et. al. ix). Arnheim's rich body of work further illustrates this point by revealing how thematic themes and thoughts, what he refers to as "the deepest significance", are conveyed to the eye with striking immediacy through the perceptual qualities of the compositional design (*Art and Visual* 458). This encompasses the influential impact of numerous works of art, such as Rembrandt's *Christ at Emmaus*, Vermeer's *A Woman Weighing Gold*, and Corot's *Mother and Child on the Beach* (*Visual Thinking* 268-273). "Each successful work," Arnheim writes, "presents a skeleton of forces whose meaning can be read as directly as that inherent in Michelangelo's story of the first man" (*Art and Visual* 461).

More recently, cognitive film scholars have extended a similar line of thinking to film studies by demonstrating how representational meanings of narrative cinema are fleshed out metaphorically by dynamic embodied patterns in the films' aesthetic form and compositional design (e.g., Coëgnarts; Coëgnarts and Kravanja; Ortiz). Likewise, these embodied cognitive structures can subtly shape our conceptual response to cinematic storytelling without us being consciously aware of their influence. In the next section I will offer a concrete case analysis, in the spirit of the writers above, to demonstrate how perceptual meaning governs meaning-making in film. However, at the same time we should be aware of the additional complexities that such a theoretical endeavor entails. For one there are the temporal complications of film. Film differs from the arts of space (painting, sculpture, architecture) in that it "does not portray human life as a closed system in which all relevant forces are shown together in a single visual configuration," nor does it share its function "of letting our mind cope with the flight of events which in our daily lives are consumed by the very moment that generated them" (Arnheim, "Visual Dynamics" 590). That is, film is an art medium that presents its events sequentially rather than simultaneously. Bringing the element of time into the scope of embodied visual thinking implies that we go beyond the visual dynamics of the supposedly static arts to also include the sequential patterning of movement. Here lies a crucial role for the concept of rhythm that John Dewey believed to be grounded in the basic patterns of what we already identified earlier as the coupling of the organism or "live creature" and its environment.[11]

Another important issue that lies beyond the scope of this article, but that should be addressed is the issue of authorship (see also Coëgnarts "Shaping Films"). If the work of art can be seen as a manifestation of a process of embodied visual thinking that can be attributed

[11] For long the concept of rhythm has been labelled in film studies as complex and impenetrable. An exception in this regard is the insightful work of Karen Pearlman who is specifically interested in untangling the concept in relation to editing.

to the artful intentions of the individual mind of the author, then how should we understand this claim in relation to an art medium such as film that is often the result of a collective effort whereby different contributions are made by subgroups and individuals? Addressing this complex topic requires that we look beyond a purely individualistic notion of filmmaking by developing a "distributed" account of embodied visual thinking, along the lines of the recent model proposed by Pearlman and Sutton. Informed by the theme of embodied cognition, these scholars argue that creativity in filmmaking practice is fundamentally spread "across the brains, bodies, and tools of collaborators who 'make' the film together" (87). Their notion of "distributed creativity" may offer a promising perspective worthy of further exploration.

Work and spectator

Moving away from the relationship between the author and his or her work, we now move to the relationship between the work and the spectator. At this stage the perceiver interacts with a work of art that has now become part of the live creature's perceptual environment. Above we have characterized this interaction as inferential: the brain constantly uses inferences and guesses based on prior embodied experiences to reconstruct and complete the external world. In the field of art studies this inferential approach has an equivalent in Ernst Gombrich's well-known concept of the "beholder's share". Building upon the ideas of Helmholtz, Gombrich put forward the idea that creativity and invention is inherent in visual perception, arguing that the beholder uses a combination of Gestalt principles and hypothesis testing in viewing a work of art. In film studies this idea has been well couched by the oeuvre of Julian Hochberg and his wife Virginia Brooks (see also Tan). Together they explored the operation of mental unconscious structures, that is, of "visual knowledge, not given in the stimulus display", in viewing films, by conducting various introspective experiments

(Hochberg 240), such as the cross experiment, here illustrated in figure 3 (after Tan 6). Part A depicts a sequence of eight random static shots that does not seem to make sense at first sight. However, when this sequence is preceded by the insertion of part B (i), a static preview of the entire geometrical object (a cross), the subsequent individual shots are readily understood as consecutive parts of that object (i.e., clockwise rotations offering subsequent views of corners), and the sequence becomes better distinguishable than other ones. This is because the viewer can now test each successive view as to whether it fits the mental schematic map of the remembered cross in some regular order.[12]

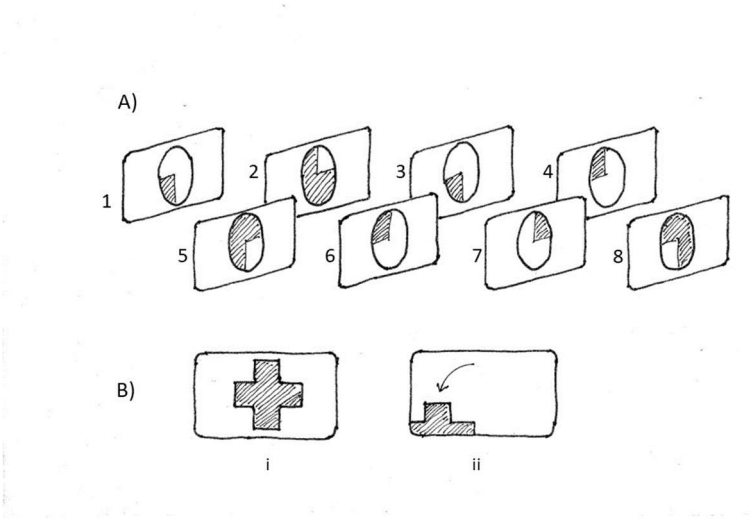

Figure 3. Hochberg's cross experiment (after Tan 6)

While Hochberg and Brooks applied an inferential approach to the perception of motion pictures, film scholar David Bordwell provided an influential constructive approach to narrative comprehension that paved the way for cognitive film studies. Following the footsteps of Gombrich, Bordwell challenged psychoanalytical definitions of the film spectator by asserting that viewers are not passive agents, but active spectators who construe

[12] Notice the similarity in how editing in classical narrative cinema works. Commenting on Hochberg's experiment, Ed Tan observes: "The presentation of an overall view in so-called 'establishing shots' followed by a 'break-down' of its object into subsequently presented part views is a cornerstone procedure in classical continuity film style" (5).

the story (or fabula) out of cues provided by the film's formal design.[13] "Meanings are not found, but made", as his decisive and oft-repeated statement makes clear. Over the years Bordwell's inferential approach, however, has also met with some criticism. At the time he presented his inferential view of film spectatorship, he was still very much under the influence of first-generation cognitive models of mental representations, defined by Bordwell himself as a "kind of propositional syntax that underlies inference-making" ("A Case of Cognitivism" 23). This has led some scholars to perceive his model as disembodied (e.g., Buckland).[14] In view of his later writings, however, this seems somewhat unfair given that Bordwell repeatedly stressed that the body and bottom-up processes most likely play a significant role in inference-making.[15] As Daniel Reynolds comments, "the tent he erects is big enough to accommodate ideas from Johnson and Churchland," two advocates of embodied cognition (100). Moreover, we have seen above how the inferential view of perception and the theme of embodied cognition do not have to exclude each other. As research in cognitive science progresses, there is a growing recognition of the need for a more comprehensive understanding that bridges both internal cognitive processes and the embodied aspects of perception, providing a more nuanced and holistic perspective on how humans perceive and interact with their surroundings. In this sense, it might be worthwhile to consider how Bordwell's inferential view could be updated through the current embodied inferential lens of such novel scholars of consciousness as Anil Seth.

Another point of criticism that seems to bear more relevance in the light of the prior part of our theoretical outline (and the upcoming case-study in the next part) concerns the active role of the filmmaker in conveying the meanings of a film. While Bordwell covers the

[13] Early psychological film theory often considered the spectator as subjected to the unconscious processes invoked by the film's structure, such as identification, scopophilia (pleasure in looking), and voyeurism. The spectator was seen as a passive recipient of the film's visual and narrative structure, which works to create a sense of identification and illusion.

[14] For similar reasons the work of Hochberg has often been discussed in opposition to the "embodied" work of James J. Gibson.

[15] See, for instance, Bordwell's elaboration of Robin Horton's primary theory in his *Poetics of Cinema* (61).

many formal cues of filmmaking that guide the viewer in his or her ongoing inferential processes, he restrains himself from connecting those cues to an intersubjective process of cinematic communication that also values the embodied distributed mind of the film practitioner (in plural sense). In the literature, this has led some authors to argue that his approach to cinematic agency is "rather misanthropic", claiming that he "transfers" human activities and qualities to an "abstract process" (Kozloff 44). The film narrates itself or as Bordwell puts it: "narratives are 'organized' for perceivers but not 'sent' as part of a communication" (*Poetics* 128). "Authors may be the distal cause of what we see and hear in a screening, but they are not immediately present therein", as Livingston evaluates Bordwell's position (14). As such, it can be argued that Bordwell provides an asymmetrical view of the role of mentalism in cinematic narration: while his model convincingly acknowledges the role of the spectator's cognitive processes and mental representations in the construal of narratives, it does not grant equal weight to the role of artistic expressive intentions in the process of inference making in which the spectator is involved. This view is also shared by Thön who believes that Bordwell tends to focus too strongly on the recipient's activity at the expense of "questions connected to authorship, intended meaning, and the real or represented 'sources' of narrative representation" (130-131). While it might be proper to say that audiences do not directly perceive the author's active presence in the film's audio-visual design, whereas they directly perceive that display itself, "that does not mean," as Livingston aptly puts it, "that authorial intentions cannot play an effective role in the spectator's experience of the work" (14). You might think, for example, as the author adds, "that it is the authors of the film who design and construct its fabula, and what the spectators do, if they are competent and know how to pick up on the authorial design, is to discover and react to the story." This criticism is also echoed by Thomson-Jones who claims that "a critic who thinks,

contra Bordwell, that meanings are not made but found in the text can still allow that the process of finding them is active and inferential" (139).

This holds all the more true when we come to think, as the prior part has argued, that works of art emerge from creative mental processes that are grounded in cognitive unconscious structures of sensorimotor experience. As our case-study in the next part will illustrate, the formal cues activate embodied schemas allowing viewers to re-create or simulate the perceptual meanings that are couched or carried by them. In this sense film acts as a form of unconscious communication between the embodied mind of the artist and the embodied mind of the beholder. This, however, does not mean that meanings should be restricted to the intended meanings of the artists. It is rather that the meanings that are fleshed out in the work's design parallel the intrinsically embodied operations of every human brain in everyday life, and it is precisely this trade-off of shared embodied knowledge that makes it possible for artists to communicate with viewers in a very engaging unconscious and bodily way. Viewers are able to infer artistic intentions embedded in cinematic form because like "all art, or at any rate all great art," it presupposes, as Wollheim put it, "a common human nature" (8).

Embodied intersubjectivity

If art has the capacity of engaging us at an embodied level to fulfill some artistic purposes then the idea arises of an experiential and interpersonal connection between the artist and the beholder that is mediated through the bodily cognitive underpinnings of the work of art. In film theory the theme of connectedness has gained much prominence in phenomenological accounts of film spectatorship, most notably in the work of Vivian Sobchack whose writings draw heavily on Merleau-Ponty's existential phenomenology to describe the embodied and intersubjective foundations of cinematic communication. The

latter is possible, she argues, because of "this mutual capacity for and possession of experience through common structures of embodied existence, through similar modes of being-in-the-world" (*The Address* 5). More recently, such phenomenological claims have found empirical support in neuroscientific studies. Scholars working within the experimental framework of neurocinematics have applied neuroimaging methods to study the functional brain of film audiences, allowing general observations over individuals in terms of what is called "intersubject correlation" (Hasson et al.). Such dialogue between film studies and neurosciences also informs D'Aloia's and Eugeni's research program of neurofilmology that aims at bridging the dualistic opposition of two models of the viewer: "the viewer-as-mind (deriving from a cognitive/analytical approach) and the viewer-as-body (typical of the phenomenological/continental approach)" (9). As such, it advocates for a viewer-as-organism perspective that merges various approaches into a "cognitivist phenomenology", seeking to offer a "continental" foundation to the cognitive understanding of the film experience. While many studies still focus on neuro-physiological measurements of the viewer, Pia Tikka, a filmmaker herself, is keen to also include the embodied dynamics of the filmmaker in the process of simulating the experiences of the fictional protagonists and/or that of imagined viewers, a process she describes as "enactive authorship".

Another concept that has stirred the neuroaesthetic and neurocinematic debate is Vittorio Gallese's concept of embodied simulation. Fueled by its neural correlate, the mirror neuron system, this mechanism entails that "we do not just 'see' an action, an emotion, or a sensation. Side by side with the sensory description of the observed social stimuli, internal representations of the body states associated with actions, emotions, and sensations are evoked in the brain of the observer, as if he/she would be doing a similar action or experiencing a similar emotion or sensation" (527). Mirror neurons are likely the neural correlate of this mechanism. Aware of the implications this mechanism might have for our

understanding of art and film, Gallese teamed up with art historians (Freedberg and Gallese) and film scholars (Gallese and Guerra), to further the idea that a crucial element of esthetic response consists of the activation of embodied mechanisms encompassing the simulation of actions, emotions and corporeal sensation, and that these mechanisms are universal. Lending neuroscientific credence to Robert Vischer's concept of *Einfühlung* (empathy) and Aby Warburg's concept of *Pathosformel*, Gallese and his collaborators argue that the basic embodied level of reaction to images is essential to understanding the effectiveness both of everyday images and of works of art. Notably, Gallese and his colleagues seem to attack most 20th century art history and art criticism (including Gombrich) for neglecting the evidence for emotional, bodily and pre-cognitive responses and for privileging a fully cognitive and disembodied approach to aesthetics. Also here, we should point out that while Gombrich, as Bordwell did in film studies, may have emphasized the cognitive aspects of art at the expense of the sensory and embodied experiences, there is no reason to assume why the inferential, constructive approach to art cannot be aligned with the theme of embodiment, as the work of Seth already pointed out to us. While embodied simulation may provide a neurological framework for explaining why viewers correlate with the formal cues of works of art at the level of the brain, it does not further specify the kind of embodied meanings that are activated in the viewer by the filmmaker and that he or she re-creates and infers in the context of artful and cinematic communication. To provide such an example and to illustrate the overall argument of this article, we will now analyze a concrete case of embodied perceptual meaning-making in cinema.

A case of cinematic art: *Portrait of a Lady on Fire* (2019)

In the same way that Arnheim illustrated the dynamic contours of visual thinking in the non-temporal arts (painting and sculpture), I will now exemplify the workings of

embodied visual thinking in film. To this aim I will analyze a short scene from the acclaimed 2019 film *Portrait of a Lady on Fire* (Sciamma), which tells the story of a female painter, Marianne (henceforth, M), who gradually develops a reciprocal love for Héloïse (henceforth, H), a young woman who she is instructed to paint. The scene depicts one of the painting sessions near the middle of the film. On viewing the scene, we are inclined to think that the filmmaker intended to convey a reversal of emotional control between the two leading characters: from a state of M being in control over H to a state of H being in control over M. Following the terminology of Argenton we may term this the representational meaning of the scene, the content of which we may further specify through Schmid's minimal units of a narrative (3), namely as consisting of a temporal structure baring the following states: (1) the initial state (M has control over H), (2) the final state (H has control over M), and (3) a change of state that takes place between them (reversal of control) and that results from what we may term the Western folk theory of emotion according to which a cause (something that M utters towards H) leads to an emotion (inside H) leading in turn to some response (H reverses the situation). Following Lakoff and Johnson (*Philosophy* 170-172) we may call these sorts of concepts (e.g., states, change of states, causes) event structure concepts. They are fundamentally human concepts arising from human biology. Because their meanings have a rather impoverished literal (and thus skeletal) aspect, we reason about them using embodied metaphors that are formed below the level of conscious awareness. Similarly, we may argue that these concepts, which together constitute the representational meaning of the scene, are couched metaphorically by a perceptual structure embedded in the scene's formal design that goes beyond linguistic meaning and that reveals the imaginative and artful act of embodied schematic thinking in filmmaking. Because this logic is perceptual we make use of a visual diagram (see Figure 4) to capture its dynamic spatial features.[16] Let us take a closer look.

[16] Thus we give credence to Hochberg's and Brooks' claim that, in order to assess the dynamic logic of film

Figure 4. Perceptual meaning in *Portrait of a Lady on Fire*.

The initial state (I) is fleshed out by the primary correlation metaphor "importance is size" or "importance is graphic/visual weight" (Ortiz "Primary Metaphors" 1574) cued by the principle of shot size: because the two characters don't share the same graphic weight – M is captured in medium shot (A) giving her a more prominent visual presence than H who is shown in medium long shot (B) – we are cued to sense the inequality of their relationship, that of the painter/observer versus its subject. When M tells H that she can't make her smile because anger always seems to overtake her image, H is visibly upset by her words. When H denies this, M reacts by telling her that she can tell by the way she bites her lips when she is embarrassed and does not blink her eyes when she is annoyed. H now asks M to come over to stand in her place and to see things from her perspective. This is when things start to change; a change of state (II) which is not only cued through the performance of the actors, but also

form, "we need an annotation system better fitted by visual displays than by words. Perhaps it should consist of brief high points or action features economically sampled from the flow of events; it will be relatively schematic, since details are not normally maintained unless needed; it will be mostly ego-centered or camera-centered, with a definite viewpoint and 2D composition" (390).

by an embodied container logic, embedded in the formal design that consists of such dynamic patterns of containment as entry, exit, and enclosure (see also Coëgnarts *Film as Embodied*, 2019). The first pattern is cued by fixed-frame movement: M *enters* the personal space of H as if the available space in the long shot already anticipated her presence (C1). Once M is inside the space of H, the second pattern manifests itself as the frame now *closes in* on the two characters (C2). The latter pattern can be further seen as a cinematic manifestation of an embodied metaphor, which in the literature is known as the metaphor "increase in emotional intensity is increase of substance in a container" (Kövecses 64) a subtype of the more general metaphor "emotions are forces". According to this principle, humans have a natural tendency to conceptualize the rising of a strong emotion (e.g., joy, anger, fear) inside a person's body in terms of the increase of a substance inside a container. When there is very little substance in the container, the pressure is low and thus emotion is at low intensity. By contrast, with an increase of the substance, the pressure becomes higher, and thus also the intensity of the emotion. This results in either inaction (the substance does not go out of the container) or, as in our case, action (the substance does go out of the container). As H's control over M's feelings increase, the frame, which has been cued to be contingent with the character of H, tightens in a bit. Overwhelmed by emotions, M *exits* H's frame to return to her initial location (C3). The frame continues to *close in* on H (C4). The film, then, cuts to M again who is now no longer captured in medium shot, but in long shot (D). The initial state has turned into its reverse (III).

As viewers we are able to grasp this representational meaning because we share the bodily knowledge by means of which it is communicated to us at a perceptual level.[17] The visual stimuli are structured in such a way as to cue the viewer into re-creating the meanings

[17] It is important to note that the perceptual meaning structure analyzed here is not the sole factor influencing the representational meaning of the scene. It should be considered in relation to the scene's overall multimodal nature, which also includes the performances of the actors and their spoken dialogue.

embodied into the formal patterns. This re-creation entails that the viewer, while watching the excerpt, completes the pattern, making sense of it, by projecting their own strong embodied prior expectations (in the form of embodied mental schemata) into the scene. As Dewey writes: "The work of art is complete only as it works in the experience of others than the one who created it" (110). The diagram makes this clear. Thus, for example, when M walks out of the frame of the shot, "we do not think, without special reason, that her character has ceased to exist, rather we think that the character has moved into part of the fictional world that is not presently shown to us" (Thomson-Jones 138). In other words, we complete the scene by projecting our own bodily expectations into it. The viewer is impelled to do so because the filmmaker has created a careful and structured perceptual design that invites us to grasp the scene's perceptual logic, and through it, its representational content. While viewers may consciously engage with the film's content, much of their understanding of the scene's visual structure and meaning happens beneath awareness, driven by cognitive unconscious mechanisms that are shaped by prior embodied experiences.

Conclusion

In the introduction of his book *Being You* Seth notes that Freud, "despite his tarnished reputation among neuroscientists, was right about many things" (7). Looking back through the history of science, he identified three "strikes" against the perceived self-importance of the human species: Copernicus' heliocentric theory, Darwin's evolution theory and his own theory of the unconscious. "While he may have been off target in the details," Seth writes, "he was absolutely right to point out that a naturalistic explanation of mind and consciousness would be a further, and perhaps final, dethronement of humankind" (8). This article reexamined the role of the unconscious in cinematic communication through such a naturalistic framework. By integrating insights from embodied cognitive science, it

challenged the idea of cinematic communication as a purely linguistic or sign-based process. Instead, the article argued for an intersubjective model where representational meanings are grounded in perceptual meanings that arise from shared bodily knowledge and that largely operate at a cognitive unconscious level. Metaphors, grounded in sensorimotor experiences, play a central role in shaping our unconscious thought, which in turn influences how we engage with and interpret cinema. Through both theoretical exploration and a case study, this article highlighted how schemas, deeply tied to our embodied existence, underpin our experience of cinematic communication. Any attempt at providing an integrated theoretical account, however, is also bound to have its shortcomings. Let us highlight one of them by making a concluding remark about the nature of meaning in cinema. While this article has stressed the role of the cognitive unconscious in the cinematic representation of meaning, it should also be pointed out, however, that the meaning of a film should not be reduced to what the filmmaker(s) intentionally communicate(s), even if those meanings are fleshed out in the most definitive, fixed way; such was the case in the *Portrait* example. It may play a constitutional role in the meaning afforded by the artwork, but it can never be presented as the ultimate "true" meaning of the artwork (see also Coëgnarts "Shaping Films"). The meaning of the film is "what it does in, through, and to experience" to quote Johnson and Schulkin (51). Besides representations, films are also enactments, as Steffen Hven has recently put it. They embed its audience in "atmospheric, kinetic and multisensorial worlds." While it may be tempting to view the representational (analytical) and non-representational (phenomenological) aspects as opposing, a more fruitful approach would be to explore how different levels of embodiment interact in the dynamic and complex process of cinematic communication.

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The Quay Brothers: Composing Between Music and Dance

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Abstract

The films of Timothy and Stephen Quay, an invitation into strange and touching life-worlds, are, in their own words, more inspired by music and dance than by conventional cinema. Maurice Merleau-Ponty's body-centered phenomenology, Maxine Sheets-Johnstone's *thinking in movement*, Claire Petitmengin's *listening from within* and Robert Bresson's definition of film as *le cinématographe* (writing of movements), reveal an approach to film based on the perceiver's body as a sense of movement, resonating with and moving along with visual and audible dynamic movements. From this perspective music, choreography and film come together as compositional arts. *Institute Benjamenta* (1995) highlights the transmodality of visual and dynamic movements in the films of the Quay brothers. For this film, they incorporated Jankovski's music as an energetic canvas for their moving multi-layered audiovisual composition, evoking a dream-like life-world.

Keywords: Quay brothers, film music, thinking in movement, embodied listening, audiovisual composition, phenomenological approach to sound and listening in animation film

"Puppet animation is much closer to dance and music, which constitute our greatest sources of inspiration. Music has its own rules, to which narration could never comply. This particular approach to the story that we obtain through music, dance, the link between movement and music, the place of music in dance – all this stimulates our work much more than conventional cinema."[1]

Introduction

I still remember the first feeling I had when seeing the Quays' *Street of Crocodiles* (1986) in 2001. At that time, I was teaching music to animators and trying to stimulate my students to collaborate with composers. I very strongly resonated with *Street of Crocodiles*, not only because of its beauty, but especially because of the rhythm of the film

[1] Quays in booklet of the 2013 DVD edition *Les Frères Quay - Les Courts Métrages (1979-2003).*

and the way in which sound, music and images were interwoven. From my perspective as a musicologist and a dance improviser, I had the feeling that this film perfectly responded to my approach to film, an approach grounded in Mauricio Kagel's definition of musical composition and my dance training in Laban dance technique and movement analysis.

With an analysis of German-Argentinian composer Mauricio Kagel's *Match Für Drei Spieler* (1964), using Watzlawick's communication theory (see *Pragmatics*) rather than classical music-analytical tools, I discovered another dimension of what composition could mean. Although Kagel dreamed *Match* several times, he couldn't write down the score of this musical composition as long as he didn't implement the visible gestures he had seen in his dream (Huvenne *Interactie en Paradox*).

As a composer-philosopher, Kagel expanded the definition of musical composition towards the etymological meaning of *com-ponere* as "to put together". He developed his "Theatrum Instrumentorum" as a combination of images, gestures and sounds in musical, performative and audiovisual compositions. In his compositions, daily sounds are as much musical material as sounds produced with music instruments. In 1966, he also materialized *Match* as a film, com-posing the gestures of the musicians, the camera movements and his music.

In addition to this expanded definition of (musical) composition, my training in Laban dance technique and dance improvisation brought me on the path of *thinking in movement,* introduced by dance improviser and philosopher Maxine Sheets-Johnstone ("Thinking in Movement").[2] For her, thinking is not only tied to words or to the mind, but it is also something the body does. She states that thinking may be a process of making one's way in movement, just as moving may be a way in which a mindful body explores the world. For her,

[2] Sheets-Johnstone states that when we see, hear, feel a movement, we experience this bodily without reflecting on it. According to her, the strand of dynamic vitality is the most fundamental and primary content. Thinking in movement is always there and doesn't need thinking in concepts.

thinking in movement is a bodily phenomenon: she refers to Merleau-Ponty's writing about Cézanne's "thinking in painting" as a process in which "vision becomes gesture", not meaning that movement follows perception, but that perception is interlaced with movement (39). She uses *thinking in movement* to describe the essence of improvisational dance in which the creation takes place in the moment, on the spot, taking into account the world as it exists for me here and now. It is a process in which sense becomes motion and motion, sense. For her the world which she is perceiving is inseparable from the world in which she is moving, in the same way that the world she is exploring is inseparable from the world she is creating.

With this, she presents a non-verbal thinking, a bodily *logos*, a kinetic intelligence, forging a way in the world, shaping and being shaped by developing patterns surrounding it. For Sheets-Johnstone *thinking in movement* is not a matter of a symbol-making body, but of a body that does not mediate its way through the world but lives it directly. This brought me to the notion of *creating from within*, and consequently on the path of film as an audiovisual com-position of dynamic movements (Huvenne *The Audiovisual Chord*). In this approach the hierarchy between image and sound in film disappears. Instead, different sensorial impressions are brought together in one experience: the audience is (bodily) resonating with what is happening in film, without reflecting on it.[3] Such resonance triggers the unconscious, for example in the form of embodied memories that arise.

This was clearly the case when I saw (experienced) *Street of Crocodiles* by the Quay Brothers for the first time. Without really understanding what was happening, I was mesmerized not only by the rhythm of the rubber band machine revealing its "source" much later, but also by the transmitted energy in sound and music and the tied interaction between image, sound and music. In this film, movement, sound, light, the scanning of the presented

[3]The audience resonates with film sound and image as dynamic movements (forms of vitality) and experiences the film as a whole. See also Huvenne *The Audiovisual Chord*, pp. 59, 70, 114.

environment with the ear, the eye and even the body, evoking tactile and vital impressions and memories, come together. *Street of Crocodiles* triggers the exploration of another approach of sound and music in film, not any longer as an "added value" to the image (Chion 5).

In a talk with Larry Sider in 2001, who did the sound design for this film, I learned how important and specific the role music and movement was in Quays' creation process. This has also been emphasized by animation scholar Suzanne Buchan:

> "Their works are closer to music than to dialogue, closer to poetry than to literature, closer to experimental interior monologue than to conventional fictional narrative. ... They create a synesthetic, haptic world, a palimpsest of evocative sounds and images that meld music, literature, dance, architecture, graphic design, the sacred and the occult, pathology, and eroticism into often puzzling cinematic enigmas." (Buchan, *The Quay Brothers* 1–2)

But how could we understand an (animation) film being "closer to music than to dialogue"? Is it possible to create a narrative without words or to keep the attention of an audience without using a dialogue or words explaining what is happening? These questions lead us to the realm of the pre-reflective, in which the bodily resonance with what happens plays a crucial role.

In 2023, I had a public online talk with Timothy and Stephen Quay[4] about the implementation of music in their creation process. I was curious in how far Merleau-Ponty's phenomenology, Petitmengin et al's *listening from within* and Sheets-Johnstone's *thinking in movement*, were useful to better understand their fascinating creative process.

[4] Online talk with the Quay Brothers and Larry Sider during an online session organized by the *School of Sound* (30 Nov 2023).

The Quay brothers

Born as twin brothers in Philadelphia, Timothy and Stephen Quay, graduated in illustration at the Philadelphia College of Art. During their studies their interest for European art and film (Luis Buñuel, Andrei Tarkovsky and Sergei Parajanov) grew. In 1969, they moved to London continuing their training as illustrators. There, they started to make films, strongly influenced by literature and Eastern European culture (Buchan, *The Quay Brothers* 5-8).

This is made evident in their animation film *Street of Crocodiles* (1986), which is based on a text by Polish Jewish author Bruno Schulz, and their first live-action film *Institute Benjamenta* (1995), based on a novel by the Swiss author Robert Walser. Both texts are not plot-driven and evoke the experiences of the characters in a rather weird life-world. Reading *Street of Crocodiles* is an invitation to a sensorial journey into a "zone" that resembles a dream-world rather than "reality". Instead of re-writing the original texts into a film script, the Quays re-created the evoked life-worlds in their own, cinematic medium, in order to transport their audience to unexpected worlds, full of strange but at the same time recognizable experiences and feelings. They invite their audiences to open up their senses to be transported into a very sensitive, fantastic world which is deeply touching. But how is this possible? What is the Quays' secret to achieve this?

They themselves give us a serious hint by revealing how their creation process begins with an intense listening to the music by Leszek Jankovski, who composed for both films *Street of Crocodiles* and *Institute Benjamenta*.

> In a strange way, when we get Leszek's music, we play it again and again, and you take it deep inside your system. And I am convinced that when you start to animate, you're animating with that music in your film because you've taken it so deep. And sometimes you fail and you just can't. When [the film] comes back, and it is

> connected with the music, suddenly there's a revelation and then you know it has worked. (Quays in Buchan, *The Quay Brothers* 171)

The music by Leszek Jankovski

Overwhelmed by the eccentric music of the Polish musician and composer Leszek (Lech) Jankowski during a theater performance in London, the Quays asked him to collaborate on their next animation film (*Street of Crocodiles*). It was the first time they worked with a composer and the starting point of a longer collaboration with Jankovski, *Institute Benjamenta* included.

> We met him at a theatre performance of an avant-garde Polish theater group in London. He came along with three musicians, we watched the performance, sitting next to him. The next day we came back to record his music in order to have the sensuality of his music in our minds. … He was not a classical trained composer, he was more of a primitive, using more folk elements. The earthiness of his music appealed to us, as did the small instrumentation. We felt that it created the space for animation. ... We said to him "You know the work of Bruno Schulz, we don't have to tell you anything about him. So for *Crocodiles*, we suggest you to surprise us with a couple of pieces". And he sent three works to us. The first piece became the prelude for *Street of Crocodiles*. We felt that we were in good hands. (Quay brothers, School of Sound talk)

As the Quays asked Jankovski to base his compositions on original texts (Bruno Schulz and Robert Walser) instead of taking their images or their editing as the starting point of his composition,[5] his music was composed before the Quays started to develop their work. Appreciating the way his music evokes experienced spaces fitting the life-world they wanted

[5] In a classical workflow of film, the film music is usually created at the end of the creation process, when the image edit is already finished.

to create, the music became as or even more important as the text on which the film was based: “For us [Jankovski’s] music offered a conspiratorial climate in keeping with the Schulzian universe which effectively suspended time and allowed the music to secretly contaminate the images, the images to contaminate the music” (Quays in Buchan, *The Quay Brothers* 196).

Jankovski’s music is very dynamic, a mixture of musical composition and improvisation based on elements of jazz and folk music. He “com-poses” all kinds of sounds: musical sounds, sounds transcending the normal playing methods of music instruments, daily sounds and voices. In his music a combination of melodies, repeated intervals, rhythmical variations from very irregular to a measured 3⁄4 rhythm, come together in a cohe(a)rance. He is not afraid to combine very different musical lines, each with their own pace and dynamic progression. In this way, Jankowski uses a non-western or medieval form of polyphony: an endless freedom of intertwining auditory “lines” (melodies, voices, musical sounds, everyday sounds) and creating knots that can’t be taken apart. His pieces evoke events, atmospheres and situations in development. In fact, Jankovski composes *from within*: he creates musical spaces with energetic audible movements rather than using the referential framework of a dominant music system.

Resonating with Jankovski’s approach of composition and his way to create musical spaces, the Quays start from his music to create an imagined, virtual world without using words. As a consequence they invite their audience to co-create: “With animation there is not a lot of dialogue. It is a kind of a ballet. You hear the music, you see the decors and the lightning. It all melts together. As an audience you have to interpret it, you have to read what is happening” (Quay brothers, School of Sound talk).

They interlace Jankovski’s woven rather than constructed music with their own haptic images, movements of light, camera-movements, movements of objects or actors, editing,

sounds and voices. In turn, the music plays also a crucial role in the strongly embodied experience the film provokes and consequently in the projection of the film into the imagination of its audience. But how can this happen? Why it is so important that they first 'incorporate' the music before creating? How can we understand this?

Listening from within

To answer these questions, we have to realize that there are different "strategies" to listen to music: we can listen to measured rhythms, to the instruments, to the modes used in the music, to the melodies or musical themes giving structure to the music. All these strategies take an external reference into account: measured time, the orchestration, the music system, the musical structure, etc.

Jankovski's music, however, invites us to *listen from within* to the music as a *bodily felt sound* in the sense Claire Petitmengin et al., a group of psychiatrists, psychologists and philosophers propose it in their research report on embodied listening.[6] We are invited to bodily resonate and to move with the dynamic movements in the music without reflecting on it. In fact we know this all very well from listening to and enjoying music, without reflecting on the structure or the musical logic in a piece of music.

But what is interesting in the report of Petitmengin et al.'s research on *listening from within* in the context of the Quays' use of Jankowski's music is the revelation that bodily felt sound is characterized by its sensorial qualities and mostly described in terms of transmodal characteristics that can be transposed from one sense to another, as movement, intensity, rhythm. This means that in *listening to music from within* and resonating with the audible dynamic movements in the music, associations and imagery can arise in other modalities.

[6] *Listening from Within* (Petitmengin et al.) is a research report which brings more clarity to what embodied listening and felt sound might be. In their search for a description of what we live through when a sound occurs, Petitmengin et al. distinguish three modes of listening. The first one directs the attention to the source of the sound, the second one to the sonic characteristics of the sound (as in Pierre Schaeffer's reduced listening) and the third one is described as a "bodily resonance with the felt sound".

Isn't it this precisely what happens when the Quays incorporate (*listening from within to*) Jankovksi's music at the start of their creative process? Their resonance with the music triggers all their senses and with this a transmodal imagination. In their online talk with me they speak about the music provoking a psychological and physical rhythm. The incorporation of the music not only indirectly defines the flow and rhythm of the film, but is also decisive for the rhythm of the overall film experience in which all senses are unified.

So the incorporated music gives birth not only to the life-worlds evoked through the tremendously precise com-position of energetic movements, but also to the experience of the presented textures, images, light sequences, camera movements, movements of and between the characters etc, coming together in the body of the audience. This way they "have developed a style in which a film, which is of course an audiovisual medium, offers itself as richly to the senses of smell and touch as it does to vision and hearing" (Marks 127).

Maurice Merleau-Ponty's phenomenology

It is at this point that the body-centred phenomenology of Maurice Merleau-Ponty brings interesting insights into the Quay's approach to filmmaking through music and sound, and their way of creating **"**the experience of life-worlds evoked through energetic movements coming together in the audience's body" versus as well as "the rhythm of the overall film experience in which all senses are unified". The phenomenological framework is important in order to address the pre-reflective, and consequently, also unconscious aspects of (the Quay's) film experience.

Phenomenology starts with experience rather than the way given theoretical commitments guide our experience. This means that in phenomenology we are interested in how things appear as correlates of our experience (Gallager and Zahavi 10-25). This appearance is not an object in itself, but a phenomenon revealed through the senses of

(some)body. It is good to know that in phenomenology, an object, e.g. a table I see or a scream I hear, is not a given, but something that is *intentionally constituted* leading to the perception of something (the *intentional object*). This means that the same sound can lead in our perception to different intentional objects. So when I hear a scream, I can try to locate the scream, or to focus on the person who is screaming or on the intensity of the scream etc.

But in a phenomenological approach, experienced music or movement can be bodily felt without triggering an "intentional act", without constituting an intentional object. The scream is then experienced as a *felt sound*, resonating in the body of the one who experiences the scream.[7] This brings us to Merleau-Ponty's placement of the body at the centre of his *Phenomenology of Perception*, exploring and elaborating upon this idea of the body as a sense. For Merleau-Ponty, we move towards the world without reflecting on our paths or gestures, putting different impressions and experiences together without any external thought or predicted format. For him knowledge is anchored in a bodily first-person perspective with the world surrounding the body as a given. This presupposes that a pre-conceptual relation to the world exists, with movement as our first way to investigate and discover the world.

But how can the body be oriented towards a given world? How does the body know what to do without knowing the world? Merleau-Ponty's concept of the *body schema* addresses this question. *Body schema* is the personal experience of the body in the world, in the way a baby knows how to move without reflecting or without "knowing" the world. As a foundation for praxis, "the body schema is the global awareness of my posture in the intersensory world" (Merleau-Ponty, *Phenomenology* 102). In our body, a totality of lived significations is brought together. This is a pre-reflective given. However the body schema is dynamic. With new sensorial impressions and experiences, the body schema can change.

[7] Edmund Husserl, founder of the phenomenology, made a distinction between a perceptual experience, leading to a perception, and a kinaesthetic experience, which he defines as a co-functioning, non-thematic experience of the position and the movement of the body. Therefore he defines the body as a sense (Depreester 328).

With movement as the original manner of relating to an object and the body schema as the personal experience of the body in the world, it is possible to create *space from within*. For Merleau-Ponty space and movement are not primarily defined by an outer referential space but rather *from within*, through the moving body. And further on he states that projected concrete movements do provoke abstract movements. In this way abstract, non-physical, virtual *spaces* can be created *from within* (Merleau-Ponty, *Phenomenology* 114) as for example musical spaces.

And there is more: the body schema as the personal experience of the body in the world also unifies the *coexistence of all sensory impressions*. It is in our body that a totality of lived experiences is unified, in a passive synthesis of the experience. From this perspective the body of the perceiver is at the centre of perception.

> The senses translate each other without any need of an interpreter, they understand each other without having to pass through the idea. … My body is the place or, rather, the very actuality of the phenomenon of expression (Ausdruck); in my body, visual and auditory experience, for example, are pregnant with each other, and their expressive value grounds the pre-predicative unity of the perceived world, and, through this, its verbal expression (Darstellung) and intellectual signification (Bedeutung). My body is the common texture of all objects and is, at least with regard to the perceived world, the general instrument of my "understanding". (Merleau-Ponty, *Phenomenology* 244)

Coming back to the Quay's creation process, this means that Jankovski's bodily experienced music appeals to all their senses and triggers their imagination within the framework of the chosen texts. They invite their audience to experience and co-create their films with the audience's body as the general instrument of understanding.

Let us now go back to the Quays' work with the insight that before reflecting on what

is happening in their films, a pre-reflective kinaesthetic experience plays a crucial role in both their proper creation process and the audience's "understanding" of their work.

Street of Crocodiles **(1986)**

The original text, written by Bruno Schulz in 1934, already sets the tone. His writing is evocative with a focus on the experience of a situation: "Gestures hang in the air, movements are prematurely exhausted and cannot overcome a certain point of inertia. We have already noticed the great bravura and prodigality in intentions, projects, and anticipations which are one of the characteristics of the district. It is in fact no more than a fermentation of desires, prematurely aroused and therefore impotent and empty" (Schulz 81).

Victoria Nelson speaks about "the psychotopographic imagination in the work of Schulz that she attributes to interior psychic regions as we find them projected onto an outer landscape" (Nelson in Buchan, *The Quay Brothers* 63). For his part, David Goldfarb suggests to read the stories composing the *Street of Crocodiles* collection as dreams with an internal logic, making sense while they are happening, but falling apart when we try to explain their plots (Buchan, *The Quay Brothers* 71).

Indeed, Schulze's text invites the reader to go along with a character and his impressions of a visit to the *Street of Crocodiles.* He remains a stranger, observing but not really understanding the weird world which guides him to a dynamic sensory experience, as in a dream: bodily situated in an environment but at the same time looking from outside at the situation.

> Soon, a slender young man appeared, astonishingly servile, agile, and compliant, to satisfy one's requirements and to drown one in the smooth flow of his cheap sales talk. But when, talking all the time, he *unrolled* an enormous piece of cloth, *fitting*, *folding*, and *draping* the stream of material, *forming* it into imaginary jackets and trousers, that

> whole manipulation seemed suddenly unreal, a sham comedy, a screen ironically placed to hide the true meaning of things. (Schulz 76, my emphasis)

The way the Quays brought this scene in their animation, is remarkable and a good example of both: a *listening from within* to Jankovski's music, and paying attention to the verbs, the dynamic gestures, rather than to the evoked images in the text (*thinking in movement*).

In their film, the enormous piece of cloth is an organ, unrolled, fitting, folding, draping and forming it into an imaginary jacket. This results in a strange mixture of associations rather than in a rational understanding of the scene. As an audience, we are fascinated and touched by the haptic and at the same time fugitive qualities in the image, moved and guided by the rhythm of the music and the gestures which started the moment the tailor appears. Later on he uses one of his needles as a baton to define the pace of this scene. The audience moves along and accepts the most peculiar images and gestures as part of the proposed living environment.

This approach contrasts with Suzanne Buchan's descriptions of *Street of Crocodiles*, because she is still using the visual frame of the film as a reference, as it becomes evident from her description of another scene.

> Silent, sombre blackness fades up to an abstract composition of rough vertical and horizontal rectangular forms that frame thick and mottled glass panes. The camera pans up, to the left, back to the right and down again. The rhythmic sound of a tram passing in the distance suggests an open, off-screen space. Slightly visible in the lower left, a movement commences: slowly, ponderously, a rotating form rises like a behemoth from its fixings, a thick, oily screw which doggedly emerges from its invisible existence below the visible surface. Eerie, restrained and cyclical music accompanies this unfamiliar and compelling vision. (Buchan, "The Animated Spectator" 17-18)

Starting from an embodied experience of what is happening in the scenes brings us

closer to the evocation of imagination when perceiving a film. Not defining images in relation to the screen, but in relation to the way our attention is captured, makes it possible to have an insight in what the co-creation of the film by the audience could be. As phenomenologist and film scholar Vivian Sobchack elaborates, the imaginative power of sound as an energetic movement and the film text as a potentiality of meanings, occur in the perception of the listener/spectator. "We do not experience any movie only through our eyes. We see and comprehend and feel films with our entire bodily being, informed by the full history and carnal knowledge of our acculturated sensorium" (Sobchack, "When the Ear Dreams" 63). This is in line with Merleau-Ponty's views on film music[8]: the music in film has to make us physically sensitive to the internal rhythm of the image without trying to translate its sentimental, dramatic or poetic content, and the meaning of the film is incorporated into its rhythm. It is through the temporal or spatial arrangement of its elements and through perception that we can understand the meaning of cinema (Merleau-Ponty, "The Film" 48-59). In turn, the audience moves with the intention of the filmmaker to co-constitute the meaning of the film as a whole: the body of the listener/spectator first of all resonates and moves with this multitude of impressions and dynamic movements.

Film: an audiovisual composition of dynamic movements?

In a classical approach of film and in most film theories, a hierarchy between image and sound is introduced. However, sound or music are not obliged to refer to the image on screen. Meaning can arise in the experience and perception of the audience, which forms its own narrative from the com-position of sound and image. The editor/sound designer Walter Murch calls this a dance between sound and image. From the perspective of editing (composition) the film, meaning arises passively (as in passive genesis and passive synthesis in

[8] He discusses the music of Maurice Jaubert in *Zéro De Conduit* (1933) by Jean Vigo.

phenomenology), without reflecting on it.[9] In a more radical way, the French filmmaker Robert Bresson speaks about *le cinématographe*: the "writing" of audible and visual movements, without introducing a hierarchy between them. Bresson evokes a life-world with images and sounds before meaning can be formed.

In his film *A Man Escaped* (1956), Bresson invites his audience to experience the life-world of the main character, Fontaine, who wants to escape from jail. As an audience we move, feel, look and listen with Fontaine. Our body empathetically "understands" through movement before we consciously reflect. Bresson stresses that the experience and perception of a film is not dependent on a "logical organization" but on the invitation to passively experience the essence of the film. He emphasizes the importance of intuitive editing and with this, film as a *composition from within*.

This refers to Francisco Varela's *view from within*. It refers to a particular mode of relationship with one's experience, consisting in coming into close contact with it or 'dwelling in' it. (Petitmengin et al. 7-13) *Composition from within* refers to a particular mode of relationship of the filmmakers with their own experience.

From a phenomenological perspective we can say that Bresson is aware of the importance of the body as a sense of movement, unifying the sensorial impressions in one experience or perception.[10] He is also aware of the uniqueness, complementarity and interrelationship of sensorial experiences in the film as a whole: "Not by showing things, but by my sensation of things, by making people feel how I feel … to make people have the same sensation that I have in the face of things" (Cardullo 165).

This quote brings us back to the work of the Quays: instead of telling a story, they invite their audience to participate in their work, bringing the sensorial impressions together in

[9] Passivity in this context does not mean a state of inactivity, but rather a state of being involuntarily influenced and affected by something on an aesthetic level – a state of sensory resonance.
[10] Maurice Merleau-Ponty put the body at the center of his Phenomenology of Perception exploring and elaborating upon the idea of the body as a sense.

the experience and perception of their film.

Institute Benjamenta (1995)

With *Institute Benjamenta*, the Quays realized their first feature film with live actors. Jankovski sent twenty pieces of music before they started the film. Some of them immediately found their place in the film, others were used during the shooting. The film is about a school for servants: the titular Institute Benjamenta. Brother and sister Benjamenta run the school. Herr Benjamenta is the director, and Lisa the teacher. The film begins when Jakob von Gunten arrives and enrolls in the Institute.

The Quays wanted to stay within their creative world of animated films in which image, sound and music are the most important filmic elements instead of narration and dialogue. Therefore, the film's decor, light, music and sound were developed before thinking about the role of speech in it, as in a choreography.

> The element of "choreography" in its widest sense appealed to us not only in terms of literal movement, but because ballet doesn't use dialogue but for the most part music only and it tells its stories via gesture and music and décor. (Quay Brothers, interview to Greg Klymkiw)

Choreography

In its widest sense, choreography could, as cinematography does, refer to the "writing of (dance) movement". But in choreography we focus more on moving bodies and the creation of an interhuman sphere.[11] A dancer is able to create projected virtual spaces through

[11] Inspired by Gaston Bachelard's theory of imagination and space as experienced, the philosopher Peter Sloterdijk defines interhuman, intercordial and interfacial spheres as dynamic spheres, not referring to visual spaces: "We are in an outside that carries inner worlds. ... This place that bears the name 'sphere.' The sphere is the interior, disclosed, shared realm inhabited by humans. ... Living in spheres means creating the dimension in which humans can be contained." (Sloterdijk 27-28)

movement. Moving with the gestures of the dancer, the audience pre-reflectively experiences the virtual space, created *from within*.[12]

This happens also in *Institute Benjamenta*. In fact the Quays use every filmic element to create the life-world of the institute: every movement in this film has its proper quality. But it is interesting how the live action is choreographed. They collaborated with the choreographer Kim Brandstrup who asked the actors to improvise with objects and situations like the forks on the table or the folding of the napkins.

During the film we can follow how the arrival of Jakob little by little changes the existing "order" of the institute. Lisa, the impeccable teacher, slowly loses her grip on the situation. We can can understand this through the changing dynamics in the interhuman spheres being "choreographies in its widest sense", interlacing visual movements, sounds and music.

To be more precise, Lisa's lessons are presented as a choreography based on an "endless" repetition of sentences and exercises that her students have to incorporate. An entanglement of movements and spoken sentences first unfold in relation to a free-jazzy music combined with a steady rhythm and sounds that could be from the environment. A visible, but inaudible, clapping of two blackboard wipers together, is apparently the sign for the class to begin their class choreography. The music, a waltz, first accompanying as much the choreography of the camera movement as that of the students, takes over after while, as a resonance of the whole scene in which everything is in movement. This multitude of energetic movements touches us. It is quite impressive how the Quays expand the possibilities of "movement" as filmic elements. They are not afraid of combining those movements without caring about the synchronization between sound and image. Lisa is moving through this entanglement of movements. She is ruling the class, being at a distance,

[12] See also Huvenne, *Embodied Listening*.

observing, connected but still controlling the situation. She is walking, moving among the students, correcting some of the gestures. At a certain moment, the music takes over by getting louder and faster. The camera brings Lisa and Jakob together in the frame. At the end of the scene, Lisa's hand slides over the blackboard erasing what is written on it. She is absorbed in her movement, turned inward. Suddenly a glance towards the class seems to wake her up. Two firm taps on the board with her stick brings us back to the external space, to the "reality". But her eyes are moving, not fixed any more.

Later in the film we see Lisa in front of her students, staying close to her blackboard. We hear guitar music reminiscent of Satie's *Gymnopedies*. The students make a rocking movement by shifting their weight from one foot to the other. This is audible in the creaking of the floor. Lisa tries to catch the attention of her students. She utters the words "Can you hear me?" Her voice betrays her inner state of desperation. Her students "answer" with a choir singing, repeating a descending melodic line which gets louder and louder, as does their rocking movement. This floods Lisa's position and "space". She bursts out in tears and hurts herself. Jakob looks at this. Without any sound, her cane falls.

It is difficult to describe this scene in concepts and words. There is too much going on at the same time. But I hope, I made clear that it is in the intertwining of visible and audible gestures, that meaning arises. As an audience, we move with the gestures, we *think in movement* in a pre-reflective but also in a pre-verbal way. As Sheets-Johnstone observes,

> An existentially resonant body creates a particular dynamic world with no intermediates. The world it creates is neither the given world nor an immutable or factitious world, but a protean world created moment by moment. ... In short, to have meaning is not necessarily to refer and neither is it necessarily to have a verbal label. (*The Corporeal Turn* 35)

In another scene from *Institute Benjamenta*, when Lisa is looking in a mirror after a

conversation with her brother, the music creates a "choreography" of Lisa's inner movements: Lisa walks to the mirror saying "Dead, to be nothing more than dead and smiling". We hear a bird and chirping crickets. The music begins. Rather than evoking a sentiment or an emotion, a musical space is created with two melodic lines: a long bowed melodic line that becomes louder with an increasingly "dirty" texture, and a strummed repetitive melody on the guitar. The guitar starts when Lisa looks in the mirror with an impassive face. Here, it is the camera movement and the light that are choreographed, rather than Lisa. The guitar music stops when she looks down. The long bowed musical line brings us to a blurred image of Jakob at a desk and Lisa opening the doors behind him.

This scene reveals how music is guiding our body to bring the different sensorial impressions together without reflecting on it: from the moment before she looks in the mirror until the moment she opens the doors behind Jakob.

In the next scene, Lisa invites Jakob to follow her. Now, the music plays a crucial role in the experience of the interhuman sphere between Jakob and Lisa. Following the development of this interhuman sphere in the course of the film gives us the ingredients to co-create the essence of the narrative, and the relationship between the characters, in *Institute Benjamenta.*

Creation of the interhuman sphere between Jakob and Lisa

In the beginning of the film, at the moment when Jakob enters the classroom for the first time, Lisa is an authority, ruling the class and preparing her students to become good servants. But the first time Jakob enters, something changes. Her voice sounds loud and affirmative, "filling" the space and dominating the classroom. The classroom itself is marked by the ticking of the clock. This rhythm relates to Lisa's footsteps which are also connected to the interhuman space Lisa creates while circling around Jakob, inspecting his body. A cer-

tain intimacy occurs when she touches him twice on his cheek with her cane, which makes an audible fleshy-sounding tick.

In this scene, we are confronted with two kinds of spaces: the visible space of the institute and the interhuman sphere *created from within* through Lisa's movements. Her voice, her steps and the ticking clock seem to be part of the external space. She is acting, and Jakob is undergoing/ a recipient of her acts. She is supposed to have everything under control. She is speaking, Jakob is listening. We hear no sounds from the others in the classroom. But the intimacy of the interhuman sphere between Jakob and Lisa seems to be the first crack in Lisa's impeccable attitude and authority as a teacher. Also, the fact that Jacob is not reacting is an interesting element: he is apparently not moved by what is happening, he is only observing the situation.

A little later in the film, Jakob throws himself at Lisa's feet, grabs her ankles and shouts that she will never have to complain about his behavior again. Lisa is caught in a double position: she doesn't immediately reject Jakob's behavior but instantly reasserts her authority when her brother intervenes. While she is looking at her brother, the music begins: a brass instrument introduces a slow pendulum movement between two pitches a second apart. This rocking back and forth, combined with a rather melodic up and down strumming of a guitar which finishes with three plucked chords leaving an open musical space, has an immediate impact on the scene.

The pendulum movement begins during the exchange of glances between Lisa and Herr Benjamenta, while the strumming begins at the moment that Lisa looks at her students. A whispered "go" from Lisa, brings us to the staircase: Lisa is leading Jakob to his room. The second time, Lisa's "go" is an order. We hear the music and their steps together.

Without giving a fixed interpretation to the music and the sound, it is clear that the music directs our attention to what is happening between the people in *Institute Benjamenta*.

It engages the audience to make an arc from the relation Lisa-Herr Benjamenta towards Lisa-Jakob. Also, the use of the voice is remarkable in this scene. The two times Lisa utters "go", are situated in two totally different virtual spaces: the first time she whispers, as if speaking to herself, the second time she is giving an order to Jakob.

In the next scene, situated after the mirror scene, Lisa's and Jakob's intimacy reaches its peak. Staying behind Jacob, she blindfolds him. Her breath expresses her state of being. After leading Jakob through a zero on the blackboard, they enter a different world. We hear her steps on a metal circular staircase leading to an unknown space.

The musical space is non-referential[13] as is the rhythm. The harp is used as a guitar, full of glissandi and arpeggios and crystal-clear strumming. The musical space is augmented in a reverberation, which also defines the acoustics of the lived space on screen. Visually, we follow how Lisa leads Jakob, with the music presenting their interhuman experienced space. As an audience we move with Jakob and undergo the situation. We are moved by everything: the music, the inexperienced open attitude of Jakob, who is just following the instructions of his teacher, the extreme intimacy between Jakob and Lisa as he gently touches her pubis with his head, combined with Lisa's words ("It is still there Jakob. It is still waiting. I can't feel you Jakob") expressing her inhibition to satisfy her desire.

In the last scene between Lisa and Jakob, the music sounds very gently in a "limping" rhythm. Lisa circles around him uttering "Goodbye Jakob, kiss me, Jakob, just once, be soft." Jakob moves together with her in a slow dance. She continues to speak. "It's beautiful, isn't it, not to want anything more". Then she walks away. Her footsteps are audible.

[13] The French composer Pierre Boulez identifies musical space and rhythm, where the audience cannot any more recognize a mode or a measured rhythm, instead can only experience smooth spaces and rhythms. In their turn, Gilles Deleuze and following him, Laura Marks will speak about smooth space as an experienced space with no external references: a space created from within. (See also Huvenne, *The Audiovisual Chord* 132-133)

Conclusion

Impressed by my first experience of *Street of Crocodiles* by the Quay Brothers and discovering the importance of music at the start of their creative process, I asked the question if it is possible to create a narrative without words or to keep the attention of an audience without using a dialogue or words to explain what is happening. This guided me to the realm of the pre-reflective, in which the bodily resonance with what happens plays a crucial role. With Merleau-Ponty's body-centered phenomenological approach to film, the notion of *thinking in movement* (Sheets-Johnstone), *listening from within* (Petitmengin et al.) and Bresson's *cinematographe*, I proposed to focus on the dynamic movements in the broadest sense of the term, and on the body as a sense of movement, at the center of film experience and perception.

With their first live action film, Institute Benjamenta as a case study, I elaborated on Quay brothers' fascination with choreography in its widest sense. Institute Benjamenta is not only a revelation of a rich spectrum of choreographies in film in relation to Jankovski's music they used as a starting point in their creative process, but it also transports the audience into a constantly changing dynamic in the interhuman spheres between the characters. Transported through those changing virtual interhuman spaces, a narration arises. In this way, the Quays' films are sensory and moving journeys, inviting the audience to create their own narrative - rather than being narrative-driven.

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The Cinematic Brain: Between Deleuze and Bellour

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Abstract

This article aims to make some sense of Gilles Deleuze's conception of the brain and show how it not only provides a framework for his film-philosophy, but also connects issues raised in his cinema books to the major abiding themes of his overall project. I consider in detail how the work of Raymond Bellour elucidates the contours of Deleuze's concept of the brain by showing the various ways in which it builds upon ideas from science, philosophy, and art (including, of course, film). It also shows how the cinematic brain, no longer conceived as a mere fleshy organ, provides one way to theorize an expanded notion of cinema to include video and new electronic media. This brain also provides clues to both Deleuze's and Bellour's non-Freudian concepts of the unconscious. However, while Bellour perhaps goes the furthest in describing the contours of the Deleuzian brain, his reliance on hypnosis – which he employs in order to move beyond psychoanalysis – ultimately betrays key aspects of Deleuze's cinematic philosophy, especially the ethical and political implications we find in the conclusion of *Cinema 2*.

Keywords: Deleuze, Bellour, cinema, brain, unconscious

In the conclusion of his last major work *What is Philosophy?*, co-authored with Félix Guattari in 1991, Gilles Deleuze uses the figure of the brain as a trope to explicate some of the abiding themes of his philosophical project. But this interest in the brain can be traced back to Deleuze's second book on cinema, published six years earlier, in which it is employed in order to sidestep both computational thinking and the psychoanalytic subject. He was familiar with the current neuroscientific research of that time – preempting the neurohumanities by two decades – and was indeed interested in the "microbiology of the brain". In this respect, he was especially drawn to the "uncertain", "probabilistic", "semi-aleatory" and ultimately disjunctive logic of neuronal synapses, which may facilitate an understanding of how "any new thought traces uncharted channels directly through its matter, twisting, folding, fissuring it. It's amazing how [the Belgian artist and poet Henri] Michaux

already does this. New connections, new pathways, new synapses" (Deleuze, *Negotiations* 149). However, he ultimately claims that brain science itself is more or less complicit with "the same postulates of the most stubborn logic", which is only able to reproduce, at the level of thought, the philosophical "model of recognition" and the communicative formation of "opinions" (Deleuze and Guattari 209). Thus the notion of the brain he and Guattari put forth is not simply the "objectified brain", not the fleshy organ consisting of "organic connections" that has become a "constituted object of science" (Deleuze and Guattari 209). They utilize the synaptic logic of "fissures", "hiatuses", and "intervals" – a paradoxical logic that they characterize with the term "machinic"-- as a part of their conception of a "nonobjectifiable brain" (Deleuze and Guattari 209). In this article, I'd like to show how the work of French film theorist Raymond Bellour, including his deep interest in Michaux, helps to further explain this somewhat enigmatic concept. If we follow the trajectory of Bellour's film theory, it also culminates in a concept of the cinematic brain. Drawing heavily on Deleuze, Bellour elucidates more clearly and specifically the theoretical contours of this cinematic brain than Deleuze's somewhat impressionistic and speculative musings. Like Deleuze, Bellour posits a theory that attempts to move beyond psychoanalysis. In Deleuze, instead of a Freudian unconscious, we find Leibnizian concepts like the "dark chamber" and "dark consciousness" as well as a cinematic brain that is the "hidden side of all circuits" (Deleuze, *Negotiations* 61). In Bellour, the body-brain is the "machinic unconscious" of the cinematic apparatus, and the cinematic experience is likened not to the dream state, as in Christian Metz, but to the phenomena of hypnosis (Bellour, *Le Corps* 132). However, as we shall see, this recourse to hypnosis is fundamentally incompatible with Deleuze's philosophy, which instead points to a radically disjunctive notion of subjectivity that is "out of our heads" (Noë) in a completely different way.

In 1985, Raymond Bellour exclaimed in a short essay that "there are no longer, or should no longer be, any analyses of films. There are just gestures. Free gestures, made possible now because one day a new intellectual practice that had to be called film analysis allowed … for the *stopping* of films" (Bellour, "Analysis" 54). This statement announces a fundamental shift in Bellour's thinking from being committed to a Metzian-style analysis of film in the 1970s to his two volume *L'entre-images* project of the 1990s, which attempts to reframe film theory first from the point of view of photography and video and then from the even broader landscape of painting, literature, and the emergence of digital media. For Bellour, the dream of structural film analysis was already "in flames" – due to theoretical and technical issues, that is, the failure of structuralism and the increasingly widespread use of video – in the mid 80s, precisely at the moment when Deleuze was publishing his two volume film-philosophy.[1] This coincidence is significant because Deleuze will become important, perhaps even central, to Bellour's newly reformulated engagement with film. While there is no direct reference to Deleuze in this short but transitional text, Bellour's move beyond Metz ultimately comes down to the same theoretical issue underlying Deleuze's philosophy of cinema: film always exceeds and resists being reduced to merely linguistic operations. However, two years later, Bellour began to write essays – which would appear again as central chapters in his first *L'entre-images* volume – directly and heavily influenced by Deleuze's cinema books.[2] One gets the sense that Deleuze's powerful alternative to structural film theory, along with the slow demise of the medium of film in the face of video and new media, together forced Bellour to rethink his whole theoretical landscape from the ground up. Indeed, he does speak about his encounter with Deleuze's cinema books as an "event" and has spoken about

[1] Deleuze's *Cinema 1* and *Cinema 2* were published in 1983 and 1985, respectively. Deleuze also published a direct critique of structuralism in 1972 (Deleuze, *Desert* 170-192), a critique which was positively replaced in the *Cinema* books by Peirce's non-linguistic semiotics.

[2] See especially the chapters "La Durée-cristal" and "L'Interruption, l'Instant" in *L'entre-images*. Bellour also cites *Logic of Sense* and *Anti-Oedipus* in his *Analysis of Film* and was therefore already a reader of Deleuze in the 1970s.

"the astonishment and the stupefaction which were mine when I first read these books which passed like a meteorite through the sky of cinema theory" (Bellour, "Thinking" 56).

I will briefly discuss Bellour's idea of "between-images" (*entre-images*) and his newer project on the "body of cinema" (*corps du cinéma*), which are both secretly bolstered by his most abiding interest: the work of Henri Michaux. Although Bellour is widely known as a film theorist, Michaux has proven to be his most sustained commitment. From writing one of his earliest books on *Henri Michaux ou Une Mesure de l'Être* (Gallimard 1965), to editing the three-volume Pléiade edition of Michaux's works (Gallimard 1998-2004), to publishing a recent book entitled *Lire Michaux* (Gallimard 2011), Bellour's career as a film theorist has been both haunted and overshadowed by the presence of this "angel of the bizarre" (Blanchot 222). This is not surprising since, in his own way, Michaux opens up both the possibilities for understanding a certain conception of the cinematic as well as for conceiving of "signs" beyond the confines of language. Michaux was constantly striving for his poetry and artwork to be "cinematic", but lamented that cinema "blessed with motion, seems to have far more success when it came to expressing" the vibrational movements that connect us directly with the "cinematic" mechanisms of the brain (Michaux, *Emergences* 66).[3]

While Bellour's early film theory might be understood as an attempt to answer Bazin's question "What is Cinema?" his more recent work displaces the very importance of this type of formalist query by analyzing the relations between film and other, what I would call, cinematic media. Therefore, in the first volume of *L'entre-images*, he is primarily interested in understanding "what happened to cinema when it became impossible for it to separate itself from a double pressure: one that seemed to emerge from its own interior [still photography] and the other which modified it through its (direct or indirect) collusion with video" (Bellour, *L'entre-images* 14). Indeed, his term *entre-images* itself highlights this broader field

[3] For more on the characterization of Michaux's art as cinematic see Hetrick "Cinematic Gestures".

of cinematic relations and, in the introduction to the first volume, he defines the spaces between photography, film, and video by the "elective gestures of the consciousness of the image, of both its destiny and its survival". Furthermore, the metaphorical space of this "common gesture" is actually the "between-times of the fixed image and the movement image" (Bellour, *L'entre-images* 12-13). Already we recognize Deleuze in the background, but the conceptual inheritance can be made even more direct if we consider a phrase from the preface Deleuze wrote for Serge Daney's 1986 *Ciné-Journal*. Daney was an editor at *Cahiers du cinéma* from 1964 to 1981 and co-founded the magazine *Trafic* in 1991 with his longtime friend Raymond Bellour. So it is without question that Bellour would have read Deleuze's words in this preface describing the "new relations between images" produced by the situation of post-war cinema (Deleuze, *Negotiations* 71). Therefore, while Bellour doesn't offer a history of *entre-images*, he invokes in an impressionistic way the impact different media have had on the formal integrity of film. Furthermore, the theoretical framework he constructs is not entirely original, but rather one that strongly leans upon and extends the work of Deleuze. Given these two points, he defines his task quite modestly as an attempt "to formulate an experience [of *entre-images*], to construct it bit by bit, beginning from the moment when it was admitted that we had entered, through video and everything that it brings, into another time of the image" (Bellour, *L'entre-images* 15). That is, his approach is synthetic, or constructivist, rather than analytic: the mass of gestures between and within images makes impossible the project of a structural analysis of film, which depends so much upon the stopping of movement with the freeze-frame. Bellour often refers to cinematic gestures, which we can understand as a step towards his concept of the "body" of cinema but, for now, point to the inhuman lines between images since – to quote the opening sentence of volume two – "without a doubt, we know less and less what is the image, an image, what are the images" (Bellour, *L'entre-images 2* 9). Bellour realizes that the advent of digital imagery has irrevocably flat-

tened the classical hierarchy of the arts and that we are now in a situation in which a multiplicity of various types of images are able to circulate on the same plane. And while he never expresses a nostalgia for film, he does remain faithful to it as a point of orientation for his investigations, albeit a point that has to be continually qualified as "Cinema and …", "Cinema, Beyond", "Of an Other Cinema". The difference between his conception of *entre-images* and my own conception of the cinematic is that the latter refuses any trace of a privileging of film as well as any discussion of "stable" images; a cinematic image is never a mere snapshot or freeze-frame, but always itself an *entre-image* or, more precisely, a movement-image. The task of Bellour's *entre-images* project involves "discerning mixtures between images … so diverse that words sometimes fail to name them… All images, including those of painting and the computer", not to mention those evoked by the "words" of the second volume's subtitle. And he vaguely describes his method as one that "draws lines of flight of a universe-infusion, bringing together works never before seen in this regard" (Bellour, *L'entre-images* 9). This last rather abstract statement gains more traction when compared to Deleuze's own method of cartographic analysis:

> In a multiplicity what counts are not the terms or the elements, but what there is "between," the between, a set of relations which are not separable from each other… A line does not go from one point to another, but passes between the points, ceaselessly bifurcating and diverging, like one of Pollock's lines. To extract the concepts which correspond to a multiplicity is to trace the lines of which it is made up, to determine the nature of these lines, to see how they become entangled. (Deleuze and Parnet viii)

The longest chapter of the second volume, entitled simply "The Chamber", illustrates just how far Bellour is willing to take this mixing of images. Over the course of the essay, the chamber becomes populated by a whole melange of different *entre-images* from the likes of

Fritz Lang, Samuel Beckett, Michael Snow, James Turrell, François Truffaut, Maurice Blanchot, Nam June Paik, Lewis Carroll, Chris Marker, Herman Melville, Dan Graham, Marcel Proust, Bill Viola, Emily Bronte, Vito Acconci, Stan Brakhage, Franz Kafka, Marguerite Duras, Virginia Woolf, Alfred Hitchcock, Edgar Allan Poe, and Bruce Nauman, amongst others. Rather than analyze the lines circulating between these various images, which Bellour does with real aplomb, our purpose here is only to extract his theoretical framework.

The essay begins by briefly placing the cinema hall within the lineage of spectacle spaces from the traditional theater to the contemporary living room, where the flat-screen television now functions as a fourth wall. But a more theoretical conception of the chamber quickly emerges:

> Cinema is a chamber because it reconstructs, abstractly and physically, sensory data from the perspective of the body-subject that has surrendered to it. It is dark chamber continually traversed by a singular clarity through which all the world is given, a point of view that varies only in proportion to the fixity of the eye that receives. (Bellour, *L'entre-images 2* 281)

This statement implicitly but immediately evokes Deleuze's Leibnizian description of the "dark chamber" of an individuated monad, which is "lined only with a taut screen variegated by folds" (Deleuze, *Fold* 4. Translation modified). Twenty pages later, Bellour finally admits this connection to Deleuze, to whom the essay is dedicated, when he claims that Deleuze has given us two philosophical conceptions of the chamber (Bellour, *L'entre-images 2* 304-5). The first appears in his analysis of Beckett's *Film* which, Deleuze argues, successively pushes to the limit and exhausts the three types of cinematic images – action, perception, and affection – to the point that the character "becomes-imperceptible." The silent film begins with broken gestural movements of the camera that directly push the character, who is actively try-

ing to escape its gaze, to run along a wall and then up the zigzagging stairs of an apartment building into a small room. Here, the character's "perceptions become things that in turn perceive him" and, in a paranoid frenzy, he attempts to expel this perception in things by veiling the mirror, covering the furniture, tearing up photographs, and removing the animals (Deleuze, *Essays* 24-25). Exhausted, he finally falls asleep in a rocking chair. But when he awakes, the camera is staring straight at him and, with an extreme close-up exhibiting his unbearable shock, he dies. But this affection-image becomes, according to Deleuze, a virtual *espacequelconque* which "has already begun to move in the mind".

> He is like a cork floating on a tempestuous ocean: he no longer moves, but is an element that moves.... The chamber has lost its partitions, and releases an atom into the luminous void, an impersonal yet singular atom that no longer has a self by which it might distinguish itself from or merge with others. (Deleuze, *Essays* 26. Translation modified)

The second image of a chamber appears at the conclusion of Deleuze's book on Foucault which in many ways is a prelude to the themes he will work out, through a reading of Leibniz, two years later in *The Fold*. At the limit of Foucauldian cartography, at the very edge of what counts as knowledge:

> We immerse ourselves from stratum to stratum, we cross the surfaces, scenes and curves, we follow the fissure, in order to reach an interior of the world … we look for a central chamber, afraid that there will be no one there and that man's soul will reveal nothing but an immense and terrifying void … and reach an outside, an atmospheric element, a "non-stratified substance" that would be capable of explaining how the forms of knowledge can embrace and intertwine on each stratum, from one edge of the fissure to the other… This informal out-

> side is a battle, a turbulent, stormy zone where particular points and the relations of forces between these points are tossed about. Strata merely collected and solidified the visual dust and the sonic echo of the battle raging above them. But, up above, the particular features have no form and are neither bodies nor speaking persons. (Deleuze, *Foucault* 121)

As Bellour quickly points out, this "savage line of the outside" that leads to the central chamber is the line that has been continuously drawn and redrawn in the work of Henri Michaux; simply put, it is "the line of Michaux"(Bellour, *L'entre-images 2* 305).[4] Quite remarkably, in a few pages the cinematic chamber transforms from a physical space that is able to accommodate a variety of *entre-images* to a space that houses the "cortical foldings … of the brain" in which these images are pulverized even further to the point at which they become formless and unrecognizable as individual entities (Deleuze, *Foucault* 119). At this point, Bellour also notes that the "La chambre" is also the title of a short text Michaux wrote as part of his *Un certain Plume*. In this prose poem – a singular snapshot in the life of Michaux's alter-ego, Monsieur Plume – Bellour explains that "all events of the world, from the outside to the interior of the chamber, and from this interior-exterior to inside the mental chamber of the immobile body in action, acquire a ghostly quality relating to their speed" (Bellour, *L'entre-images 2* 308). Therefore, by decentering the theoretical discussion to the space between images, Bellour offers us both a postmedia concept of the cinematic that is expanded beyond technical constraints to include photography, film, and video as well as a sur-biological conception of the brain that is dislocated from the head, thereby displacing the Freudian notion of the unconscious.

[4] Curiously, Deleuze himself leans heavily upon Michaux in the last paragraph of his book on *Foucault* when describing this line – "Michaux's line of 'a thousand aberrations' with its growing molecular speed" – which circulates within the central chamber (Deleuze, *Foucault* 122-123). And even though he follows Deleuze on this line, Bellour also puts forth the obvious question: "Why does this book of philosophy, on a philosopher ... end on a writer-painter with this image of a central chamber?" (Bellour, "Image" 7).

What exactly is the relation between *entre-images* and the "mental chamber of the immobile body in action", which seems to lie at the theoretical heart of Bellour's analysis? For the answer, we have to fast-forward ten years to Bellour's magnum opus *Le Corps du Cinéma: Hypnoses, Émotions, Animalités*. The book begins with an epigraph quoting Henri Michaux: "The unfolding alone is important. The rest is but an epiphenomenon". For our purposes here, we can perhaps zoom out and bracket the multitude of *entre-images* Bellour cites in order to fully unfold the ur-image that is Henri Michaux, who lies hidden within the dark chambers of all his books. We can see how Bellour's theoretical problem is framed and reframed simply by looking at the titles of two central chapters from *L'entre-images 2* and *Le Corps du Cinéma*: his thought moves from "Folding the Image" to "Unfolding the Emotions", respectively. In the Prologue to *Le Corps du Cinéma* – albeit using language that directly evokes his previous work, which glosses the cinema as a dark Leibnizian chamber circulating with *entre-images* – Bellour calls cinema "a particular image mixed with many others in the grand Baroque house of images" (*Le Corps* 14). But his focus is now slightly different, since the "dark chamber" is folded into a new concept of the "body of cinema". This lexical transformation allows him to take another step closer to the heart of *entre-images*, that is, to the forces and affects that course between them.

Here we should pause to make explicit the fact that the obscure and infinitely variegated chamber of an individuated monad serves to replace the Freudian unconscious. From his earliest writings, Deleuze can be seen mining the dark corners of the history of thought for conceptions of the unconscious that have been occluded by the dominance of psychoanalysis. "Freudian methodologies are appropriate mainly for young neurotics whose disorders are related to personal reminiscences … loving, making oneself lovable, adapting, etc." (Deleuze, "Sacher-Masoch" 133). Deleuze is instead interested in "active approaches to the unconscious", which acknowledge that all processes of individuation involve not only neuro-

sis but, more profoundly, "a fundamental psychotic moment", a fractured sense of self (Kerslake 3). Psychoanalysis (but also cognitive science) cannot adequately deal with this predicament and can only serve to reduce existence to the frivolities of an imagined and reified conception of "I". Several minor figures populate Deleuze's theory of the unconscious, but arguably the most important are Henri Bergson – who does not explicitly use that word but who's idea of the virtual lays the groundwork to move beyond Freud (Deleuze, *Bergsonism* 56) – and Gottfried Leibniz, who develops an early idea of the virtual in which is enfolded the multitude of things that are not immediately available to conscious perception and which is described as a "screen in a dark room" (Leibniz 144). Bellour's work helps to further elucidate these ideas. His notion of a machinic unconscious, for example, refers to the virtual or normally occluded elements of the body-brain, which is itself understood as a non-technological and non-biological apparatus that encompasses all the disjunctive or machinic flows between cinema and spectator.[5] However, Bellour ultimately betrays the theoretical and political potential of these ideas by subtly reverting back to an attenuated notion of the cinematic that focuses on film and, more problematically, a non-Freudian concept of the unconscious that he derives from the tradition of hypnosis.

In *Le Corps du Cinéma*, cinema is reconceived as a sensitive material, as an inhuman body—or rather an apparatus that enfolds both the body of film(s) and the body of the spectator(s)—that is alive to the extent that camera movements along with the acts of framing, cutting, and montage constitute a kind of "breathing" of the film. Bellour hopes that such an approach might enable him to better understand what exactly takes place in the dark cinema hall and, in particular, in the intimate foldings between the spectator and the images on screen:

> There are two bodies of cinema, constantly twisting and informing each other. The body of films, all films one by one, shot by shot, composed and decom-

[5] For more on the concept of the machinic, see Hetrick "Machinic Animism".

> posed. The body of the spectator, affected by the vision of each film, indexed as an immense theater of memory which is then reflected back to all films. The body of cinema is the virtual place of their conjunction. (Bellour, *Le Corps* 16)

The virtual point of encounter between the bodies of cinema and spectator is marked by what Bellour calls emotion. It is important to note, however, that this concept of emotion is far from the everyday understanding of the term. Rather, the "emotion of cinema" is to be understood more in terms of Deleuzian affect, as "a shock to the body", mixed together with what psychiatrist and psychoanalyst Daniel Stern calls "vitality affects" (Bellour, *Le Corps* 139).[6] That is, emotion for Bellour – rather than referring to the categorical affects of anger, joy, or fear – signifies "both the inner force of affect as a sensible form of the experiencing body and the spiritual or mental awareness that more or less accompanies it. This duality corresponds to the two sides of the fold, 'fold on fold', articulated by Deleuze between the two modalities of unconscious and conscious perception" (Bellour, *Le Corps* 140).[7] By evoking the fold yet again, we should immediately understand that the body of cinema really means "the body-brain" that encompasses the various interstices and foldings between images on the screen and the spectator (Bellour, *Le Corps* 221). That is, from a chamber filled with a multitude of *entre-images*, we now have a film-philosophy that supports a conception of the body-brain of cinema – properly understood as a place of encounter between film and spectator – filled with impersonal and transpersonal affects.

With this movement towards the brain, Bellour can take the final step beyond his Metzian heritage. And again, this move is inspired by Deleuze's film theory. Bellour begins a recent article – which functions as a kind of synopsis of the third chapter, entitled "Un Spec-

[6] Bellour in fact devotes an entire chapter to Stern's work, where he compares vitality affects with what the neuroscientist Antonio Damasio calls "background emotions". The mixing of Deleuze with Stern should not be understood as arbitrary since Félix Guattari relied upon Stern in his last book, *Chaosmosis*. See also Bellour, "Going to the Cinema".

[7] He suggests that his choice of the word emotion over sensation or affect is an "opaque" one that has to do with debates internal to film theory (Bellour, *Le Corps* 138).

tateur Pensif", of the "Emotions" section of *Le Corps du Cinéma* – by quoting from two interviews Deleuze gave following the publication of *Cinema 2*. Here is the first:

> On what basis can we assess films?... It's not to psychoanalysis or linguistics but to the biology of the brain that we should look for principles, because it doesn't have the drawback, like the other two disciplines, of applying ready-made concepts. We can consider the brain as a relatively undifferentiated mass and ask what circuits, what kinds of circuit, the movement-image or time-image traces out, or invent, because the circuits aren't there to begin with… The brain's the hidden side of all circuits. It's up to art to trace through it the new paths open to us today. You might see continuities and false continuities as cinematic synapses—you get different linkages and different circuits. (Deleuze, *Negotiations* 60-61. Translation modified)

In the second interview, Deleuze adds two crucial components to this argument: the enigmatic idea that the "brain is the screen" and the equally enigmatic reference to Michaux:

> The brain is the screen. I don't think psychoanalysis or linguistics have much to offer cinema. But the biology of the brain – its molecular biology – that's a different story. Thought is molecular. We are slow beings, constituted by certain molecular speeds. As Michaux says: "Man is a slow being, made possible only through fantastic speeds." Cerebral circuits and linkages do not preexist the stimuli, the corpuscles, or particles that trace them. Cinema is not theater: it composes its bodies using particles. The linkages in cinema are often paradoxical and always overflow the simple association of images. Because cinema puts the image in motion, or rather endows the image with self-movement, it never stops tracing

> and retracing the circuits of the brain. (Deleuze, *Two Regimes* 288. Translation modified)[8]

These remarkable words allow Bellour to further clarify the nature of the "lines of flight" which, as he has already argued, course within and between *entre-images*. They consist of a multitude of linkages and circuits that continuously interconnect, disconnect, and bifurcate according to the logic of the plasticity of neural synapses. The "body-brain" marks the porous boundary that envelopes these rhizomatic circuits. But, as we have seen, the body-brain of cinema for Bellour includes both the screen as well as the spectator within the dark space of the film hall. This is precisely his way of repeating Deleuze's quite enigmatic statement that the brain is the screen. So, we could say that the linkages and circuits that course through the cinematic body-brain consist of at least three types: (1) the movement between the various *entre-images* projected on the screen, (2) the synaesthetic movement within the brain that Bellour calls emotion, (3) the continuous circuit that links the two types of movement and defines the contours of the cinematic body-brain as such.[9] While it is tempting to understand this use of the brain as metaphorical, both Deleuze and Bellour rely heavily upon research in neuroscience to support their claims. Bellour argues that film-philosophy and brain science should themselves be seen as forming a circuit of knowledge such that "while Deleuze recognized the cinema as a brain (or body-brain), it is essential for a neurobiologist to be able to recognize the brain (or body-brain) as cinema" (Bellour, "Deleuze" 83).

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[8] Bellour has suggested that one meaning of the concept of the brain as screen has to do with the fact that the impression of a film on a viewer is precisely analogous to Bergson's definition of affect as "a kind of motor tendency on a sensory nerve" (Bergson, *Matter* 55).

[9] Bellour acknowledges that emotions *qua* vitality affects are potentially synaesthetic by nature given that they share the same cognitive structure as what Stern calls amodal perception, which allows for cross-modal equivalences: "If the concept of vitality affects is so important to thought on art in general and the cinema in particular, it is because vitality affects are irreducible to discreet or Darwinian affects, assuming psychological contents like fear, sadness, shame, etc. On the contrary, we are talking about affects associated with the force, intensity, quality, form or rhythm of an experience, which touch it in the detail of its material reality. These vitality affects are the expression of so-called amodal perception, which ensures circulation between the different levels of sensorial reality" (Bellour, "Deleuze" 85).

As Bellour notes, Deleuze relies upon the work of neuroscientists Steven Rose and Jean-Pierre Changeux, as well as philosophers of science Gilbert Simondon and Raymond Ruyer. Bellour, as we have already seen, leans heavily upon the work of Daniel Stern and Antonio Damasio. And there are numerous arguments throughout Damasio's work which state that the first problem for understanding the neurobiology of consciousness "is the problem of how we get an integrated "movie-in-the-brain", a movie with as many sensory tracks as our nervous system has sensory portals – sight, sound, taste and olfaction, touch, inner body senses, and so forth." (Damasio, "Neurobiology" 111) Furthermore, Damasio himself suggests that the relation between cinema and the brain is much more than a mere metaphor. Rather, he argues that the very invention of the cinematic apparatus was modeled, "sometimes consciously and sometimes unconsciously, on the workings of the human mind as produced by the greatest and most baroque of film studios: the human brain" (Damasio, "Film" 82). So, while this circuit between cinematic thinking and neuroscience remains on the order of the speculative, there seems to be enough substance to warrant further and deeper exploration. Indeed, this intuition has been the core premise behind Bellour's most current research. Our interest here – whether we refer to a brain or to a baroque house – is to unravel the various lines and linkages that circulate between images as well as between these images and the movement in our minds.

One important consequence of Bellour's analysis is that it provides another way of moving beyond Deleuze's seemingly mutually exclusive categories of the movement-image and time-image. Elsewhere, Bellour states quite clearly that the division between the two volumes of the *Cinema* books is simply a "functional" one that serves not only to frame the trajectory of Deleuze's argument, but also to place it within the broader perspective of his work as a whole. The demarcation between movement-images and time-images, therefore

> has a definite dynamic effect (in spite of ambiguities which belong to the variable historical assignation of the two types of images). But one also feels at times in the second volume a sort slippage in which a will, still only obscurely operative in the first volume, becomes manifest. My suggestion: a will to reconstruct a history of philosophy using that of cinema. (Bellour, "Thinking" 66)

> There is thus indeed history, evolution, flow, in spite of points of anticipation and reversal (the most notable being the role assigned to Ozu, "the inventor of opsigns and sonsigns," who already conceives a pure time-image within the very time of the movement-image). (Bellour, "Thinking" 58)

This "dynamic" demarcation, which displays "points of anticipation and reversal", should perhaps be understood as a plastic one, invoking again the logic of neural synapses and circuits. Beyond Deleuze's own framing of this epistemic shift for the purpose of his own theoretical trajectory – which allows him to say in the final sentence of *Cinema 2*, "there is always a time, midday-midnight, when we must no longer ask ourselves 'What is cinema?' but 'What is philosophy?' " (Deleuze, *Cinema 2* 280) – it must be admitted that the general *Kunstwollen*, to use the vocabulary of Alois Riegl, involving the sentiment and possibilities of cinema changed dramatically sometime in the mid-20th century. But this epistemic shift cannot be understood as happening at one definitive point in time or as the result of one definitive cause, for example, the horrors of World War II. Furthermore, it has no real bearing on the ontology of cinematic images. In this respect, we should quote one source Bellour himself relies upon, which pushes this line of thought to the extreme, suggesting that, despite there being a different focus in Deleuze's respective analyses of films in these two "historical gestures, ... the movement-image and the time-image are two modalities of the same sub-

stance in which nothing allows us to presuppose the anteriority of one over the other" (Leutrat 205). As Bellour notes, the primary examples that Deleuze himself cites as transgressing the boundary between movement-images and time-images are the pre-War films of Yasujiro Ozu, which display the first opsigns and sonsigns – pure optical and sonic images that break with the sensor-motor schema – in the history of film and therefore offer the first indications of the time-image. In these films, the relatively low camera positions, austere camera movements within a 360-degree field and, especially, extended shots of inanimate objects and landscapes undermine the normal spatio-temporal coordinates of the movement-image "whether by disconnection or vacuity" and therefore exhibit "a little time in its pure state" (Deleuze, *Cinema 2* 15,17). The broken strokes or "visual and auditory lines of the universe" drawn out by Mizoguchi's camera – which sometimes replaces the physical movement of actors – also push the logic of the action-image to its extreme limit thus creating a crisis for the movement-image (Deleuze, *Cinema 1* 194-195). There is a sequence in Kenji Mizoguchi's *Ugetsu*, for example, that beautifully illustrates what Deleuze calls, after Eisenstein, scroll-shots or rolling-pictures. Here the camera moves slowly from a palace room where the potter and his lover are casually awaking from bed. With a subtle dissolve, the camera continues to move, as if in one long gesture, through the palace wall into a forest where the two are now bathing in a small pond. The camera gradually tracks left, again in close-up, across the rocks and, while we still hear the lovers giggling and splashing, makes its way to an open clearing in which they are picnicking next to a lake. These three fragmented spaces, each with its own rhythm and dramatic mood, are linked by the meandering vector of the camera, which traces out what Deleuze calls a "line of the universe". The spaces – heterogeneous, but neither totally disconnected nor unified in an encompassing whole – are elements on a zig-zagging line of force that "leaps from one to another … across the gaps" (Deleuze, *Cinema 1* 168). This line of the universe is a "jagged line that unites singular points

or remarkable moments at the summit of their intensity" passing from intensive action to intensive action, creating a patchwork space of related but fragmented elements in its wake (Deleuze, *Cinema 1* 218).[10] Such sequences display the three deformations of the action-image that Deleuze identifies as early symptoms of the new image: the "dispersive situation", in which there is no longer a globalizing situation that holds milieu and action together coherently; the "deliberately weak links" along the line of the universe, which allow the actuality of the action-image and the virtuality of the affection-image to interchange; the "rambling stroll and the continual return journey" of a character, the logic of which simultaneously denies the possibility of conventional space, plot, and action (Deleuze, *Cinema 1* 207-208).

This is the context in which we should read the first chapter of the "Emotions" section in Bellour's *Le corps du cinéma*, entitled "Unfolding the Emotions". He begins with a classic film analysis – complete with descriptions of several freeze-frames – of the opening scene of Mizoguchi's *Miss Oyu*. His purpose is not so much an aimless "stopping of films" (Bellour, "Analysis" 54) as much as it is an attempt to unfold the various intertwined circuits in this sequence that move from affect to action and back again. He sets up his argument by invoking the connection between this sequence and the scroll shot in *Ugetsu*. In this regard, he quotes another film critic, Alexandre Astruc, who defines the *mise en scène* in this shot as "a way to extend the impulses of the soul within the body's movements … which the camera movements so faithfully support in its own oscillations during the wild ride through the forest" (Astruc 14). *Miss Oyu* begins with a wild, zig-zagging camera ride from inside Shinnosuke's house and through a bamboo forest in a curious yet cautious search for his potential fiancée who is coming with her family to meet him for the first time. Too impatient to wait for their arrival, Shinnosuke tells his aunt that "I am going to take a stroll", after which he exits the back of the house and walks around to the front and then into the forest in one long take. The

[10] For more on this see Hetrick, "Deleuze and the Kyoto School II".

significance of this shot for Bellour is that it seems to draw out, not simply a line of the universe, but continuous circuits that link the movements within Shinnosuke's emotions, to his physical movement through the bamboo forest, to the camera movement, and finally to the movements induced in the spectator's brain. Taken together these circuits define, in the most complete manner, the contours of what Bellour calls the body-brain of cinema. What is most remarkable about his analysis is that the circuits intertwine and co-determine each other in ways that make it increasingly difficult to separate them. So, for example, the rhythm of Shinnosuke's quiet and meandering stroll is mirrored in the movements of the camera that "doesn't really follow, but seems to linger, constructing its own speed and erudite drift" (Bellour, *Le Corps* 132). Furthermore, it is difficult to distinguish whether the "perceptual shocks of varying intensity" and "visible seizures" induced by the encounters between the camera and the variously focused bamboos, primarily relate to the flux of emotions Shinnosuke must be experiencing, to the "machinic unconscious of the apparatus", or to the spectator who is watching all of this unfold, since the image, "like the beating of a tree, … hits us, with affections of continuous but variable and intermittent speeds" (Bellour, *Le Corps* 132-136). In fact, this image of a forest of variously blurred bamboo trees whose vibrational qualities threaten to whack both the character and the spectator in the head, inducing a series of epileptic shocks, points to the machinic unconscious enfolded within the body-brain of the cinematic apparatus.

The blurring between lines that traverse the body-brain of this film is a result of the coincidence between the *mise en scène* and what Bellour calls the *mise en plis*, which together form "a figure of variable accents" (Bellour, *Le Corps* 136).[11] But he is not simply referring to elements of the film's style here since he further argues that "the passage from the movement-image to the time-image, can be expressed by this more or less radical transfor-

[11] Here Bellour is alluding directly to the notion of the "figure" in Deleuze's *Logic of Sensation*, which he addresses in the following page.

mation of the *mise en scène* into the *mise en plis* – as we finally pass into *The Fold* [the title of Deleuze's book on Leibniz] of the baroque harmony of disjunctive accords that depend upon the modern divergence of the fold" (Bellour, *Le Corps* 137). With films like *Ugetsu* and *Miss Oyu*, therefore, we are confronted with images that mark an indiscernible interstice between movement-images and time-images, in which the movement of the sensory-motor schema is not simply broken, but displaced and multiplied. We still have the physical movements of Shinnosuke's "rambling stroll" as well as the camera that both impels and traces it. But we also have the type of affective or emotional movement that normally occurs within the brains of the character and the spectator after a sensory-motor meltdown. That is, rather than simply short circuiting into a catatonic or hypnotic state, as in pure time-images, the multiple lines of this shot in *Miss Oyu* touch the brain but, in their plastic dynamism, are also allowed to circulate back down to restore physical movement in a "return journey". Bellour emphasizes, beyond Deleuze, that it is in relation to the effect of cinema on the spectator that the reversibility between these two levels – between the interval, or formal fold, of *Cinema 1* and the interstice, or micro-fold, of *Cinema 2*, Foucault, and *The Fold* – is pushed to the limit. And this is precisely what he means when he says that the "body of the spectator is folded into the folded body of cinema, such that 'the folds in the soul resemble the folds of matter', if only through the luminous trace of a projection" (Bellour, *Le corps* 137).[12] The difference between these two levels – the folds of matter and the infinitely small unconscious folds within the "brain", which include what Bergson calls pure memory as well as what Leibniz calls petite perceptions – is merely one of perspective. From the empirical point of view, it is possible to make a distinction between matter and memory, between movement-image and time-image. But from a transcendental empirical point of view – that is, from the perspective of Bergsonian duration – there is only a differential continuum that involves both levels on

[12] The quote is from Deleuze, *Fold* 98.

the same immanent plane. This differential line, or vector, is defined by Bergson as a tendency; by plunging into the intuition of duration "we accustom ourselves to think and to perceive all things *sub specie durationis* … reality no longer appears in the static, attenuated, state; it affirms itself dynamically, in the continuity and variability of its tendency" (Bergson, *Creative* 131-132). And beyond Bergson, reaching this perspective, achieving a direct time-image, depends upon a power of the false that injects a crack or fissure within subjectivity, displacing the I and provoking an unharnessed redistribution of sensibility. This line, vector, or tendency, according to Bellour, is therefore simultaneously "the force of time itself" as well as "a sort of immobilization" (Bellour, "Thinking" 71). In *Ugetsu* and *Miss Oyu* this "sort of" indicates that actual movement, rather than being simply and entirely sublimated to virtual or affective movement, wells up and continues to course through the brain, albeit a brain redefined in a way that enfolds all the unhinged circuits of both levels, from action to affect to camera to spectator. There is no clean break of the sensory-motor circuit here, even if there is a momentary shock to thought. We must therefore understand Benjamin's idea of cinematic innervation as the condition of possibility for a reconfigured sense of agency beyond Adorno and Horkheimer's view of cinema as a narcotic. The passivity that would apparently result from such a break – along with its ethical, political, and creative consequences, including all the paralyzed mummies and zombies of Cinema 2 – is replaced with the plasticity of this circuit, understood not in the unidirectional sense of the Greek plassein, but in the more dynamic sense developed by contemporary neuroscience or, alternatively, in the sense so beautifully described by Michaux:

> by means of punctuations, of repetitions, of hesitant jerks, by fissurations, by indiscernible sliding, there is, being formed, unformed, re-unformed, a spasmodic building, a building in abeyance, in perpetual metamorphosis and transubstantiation. (Michaux, *Miserable* 32. Translation modified)

Although Bellour relies upon Damasio and Stern in order to explain how the spectator is seized by emotion, we need to add a third figure. Bellour follows François Roustang – a Lacanian psychoanalyst-turned-hypnotist – in moving beyond the Freudian unconscious by returning to the supposed common inspiration for both psychoanalysis and cinema at the end of the nineteenth century: "psychoanalysis and cinema appear to have been born together out of hypnosis" (Bellour, "Spectators" 148). Furthermore, as the subtitle of Bellour's book on the body of cinema suggests, hypnosis is not only central to his conception of cinema. It also points to a fundamentally inhuman aspect of cinematic emotion. This is because cinema awakens the viewer to the "animal that he is", who enters into a hypnotic state "as soon as a film begins". Such animality "embodies the inner element of hypnosis that is intrinsic to the emotional body," and thus "the infinite variety of emotions aroused by films" are equivalent to "the effects of hypnosis that they induce" (Bellour, "Hypnosis" 13). While Bellour argues that the spectator "who gives himself over to the light hypnosis of film is both active and passive" (Bellour, *Le Corps* 179), such language betrays an important aspect of Deleuze's cinematic philosophy, including especially its political ramifications. In the conclusion of *Cinema 2*, Deleuze follows Benjamin in drawing a fine line between cinematic aesthetics and forms of fascist thinking and implicitly agrees that we must never tire of siding with the perpetual deterritorialization – indeed decolonization – of thought (264).

A genuine shock to thought – even if it momentarily stops action – necessarily affects aberrant, or machinic, movements on all levels of the body-brain with all its "false continuities" and "cinematic synapses" (Deleuze, Negotiations 61). Cinematic innervation should not be understood as having a narcotic or hypnotic effect, but as something more akin to a psychedelic substance that is capable of engendering "new space-times" and therefore new forms of action that may not be immediately recognizable as such. One concrete way to think about this is to recall that Nam June Paik understood video as an apparatus which both mirrors the

"strange ontology" of the psychedelic experience in a "safer" and "more authentic" medium, as well as enables anyone to become "an active visual artist" instead of merely "watching a masterpiece on the wall" (Paik 145). It is significant that Deleuze concludes his famous interview with Antonio Negri on control societies by referring to his non-physiological idea of the brain. Events, he argues,

> can't be explained by the situations that give rise to them, or into which they lead. They appear for a moment, and it's that moment that matters, it's the chance we must seize. Or we can talk about the brain: the brain is precisely this boundary of a continuous two-way movement between inside and outside, this membrane between them. New cerebral pathways, new ways of thinking aren't explicable in terms of microsurgery… I think subjectivation, events, and brains are more or less the same thing. (Deleuze, *Negotiations* 176)

Deleuze is also very explicit that we are concerned here with an encounter neither with the unconscious of psychoanalysis nor the "hypnotic petrifaction" of certain forms of modern art, but rather with "a higher problem" that pushes us into a "relation with the undeterminable" (Deleuze, Cinema 2 167). This is an encounter with the "brain as the hidden side of all circuits," which demands us to "trace through it the new paths open to us today" (Deleuze, Negotiations 61). Deleuze's cinematic brain is thus paradoxically vitalized by a "dark consciousness" (Ruyer 27) that is radically decentered from the biological brain – and indeed the humanist subject – and enfolded within a more expansive and disjunctive ecology that includes the mind, the socius, and a non-totalizing "chaosmos" consisting of "forces that constitute microbrains, or an inorganic life of things" (Deleuze and Guattari 213).

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Remediating the Uncanny: Visualizing Unconscious Drives in *Hungry Ghost*

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Abstract

This article explores the artistic research behind *Hungry Ghost* (2022), a short film by first author Guido Devadder that visualizes deep-seated human desire, will (Schopenhauer), and drives (Freud) through the remediation of 19th-century optical devices, such as the phenakistiscope and zoetrope. Given the elusive and unconscious nature of these forces, the film adopts an idiosyncratic creation process, merging live-action and animation through hybrid analog-digital approaches. By leveraging the inherent formal characteristics of historical optical toys, *Hungry Ghost* expands their structural 'DNA' while simultaneously transforming their intrinsic affinity for the uncanny. Applying Bolter and Grusin's concept of remediation, *Hungry Ghost* reimagines these seemingly obsolete media in contemporary artistic practice through animated sculptures materialized via 3D printing, filmed in real time, and assembled through spatial and temporal editing. Kaitlin McSweeney's loop-based soundtrack further amplifies the hypnotic rhythm and compulsive repetition. Through its interplay of materiality, animation, cinematography, and editing, the film itself becomes a metaphor for the unconscious mind—its looping structures, recurring motifs, and temporal disruptions reflecting the tensions between repression and return, the animate and inanimate, the real and imagined. Within this framework, *Hungry Ghost* employs experimental media archaeology to explore an open-ended, process-oriented methodology guided by intuition and associative thinking. By bridging artistic practice and media-archaeological inquiry, the film demonstrates how re-imagining early moving-image technologies can yield unconventional approaches to visualizing the undercurrents of the human psyche, highlighting the continuing expressive potential of historical media affordances in contemporary expanded filmmaking practices.

Keywords: experimental media archaeology, remediation, phenakistiscope and zoetrope, uncanny, artistic research, expanded filmmaking

Introduction

"A poetic journey through the hazy underworld of insatiable human desire". This logline introduces *Hungry Ghost* (2022)[1] at film festivals and in exhibition catalogs, while also paving the way for the ensuing discussion, attempting to clear away some of the proverbial haze. *Hungry Ghost*, developed by Guido Devadder (first author of this article) as part of his PhD in the Arts, is a short film that employs a practice-

[1] See video of the work on *Vimeo*, https://vimeo.com/1005876962

based research approach, drawing on experimental media archaeology to investigate the intersection of historical media and contemporary artistic practices. This work aims to visualize deep-seated human desires, drives (Freud) or will (Schopenhauer) by remediating 19th-century optical toys like the phenakistiscope and zoetrope. However, this raises the critical question: how can such profound themes be conveyed starting from the principles of obsolete media devices that largely resist any form of narrativity?

This question will be explored through a close examination of the creative process behind *Hungry Ghost*, an unconventional filmmaking approach that transcends traditional boundaries between animation and live action. The first section details the film's production, highlighting the integration of hybrid analog-digital techniques and the significance of materiality in bringing historical animation devices to life. The second section delves into the thematic core of the film, exploring how the formal characteristics of the phenakistiscope and zoetrope are intrinsically suited to evoke the uncanny. Through remediation, *Hungry Ghost* extends this to convey the unconscious drives that loom below the floorboards of human awareness, confronting the viewer with an eerie interplay between life and death, animate and inanimate.

[Figure 1. *Hungry Ghost*, film still]

Behind the Scenes: The Creative Approach in *Hungry Ghost*

Contextual Scope and Methodological Framework

The phenakistiscope is widely regarded as a pivotal milestone in the history of the moving image, being the first device to effectively convey fluid motion. Exemplarily, Georges Sadoul devotes the opening chapter of his *Histoire Générale du Cinéma* (1946) to this slotted disk, invented by Belgian physicist Joseph Plateau in 1832 and independently by Austrian scientist Simon Stampfer in 1833. While the phenakistiscope and its successors, such as the zoetrope and praxinoscope, gradually fell out of use after the turn of the 20th century, recent decades have witnessed a significant resurgence of interest in these devices from both artists and scholars. Renowned artists such as Toshio Iwai, Gregory Barsamian, Eric Dyer, Marie Paccou, Sculpture (Reuben Sutherland and Dan Hayhurst), and Tess Martin have extensively explored these devices in their work. Additionally, scholars including Erkki Huhtamo, Stephen Herbert, Laurent Mannoni, Meredith Bak, Tom Gunning, Christine Veras,

Rod Bantjes, Benoît Turquety, Wanda Strauven, Nicolas Dulac and André Gaudreault have contributed to the renewed academic interest towards these optical toys.

[Figure 2. Phenakistiscope discs by Joseph Plateau from the collection of the Ghent University Museum, photographs by Guido Devadder.]

Despite the revived interest from both artistic and scholarly perspectives, these two angles have remained largely separate. The objective of Guido Devadder's practice-based PhD in the Arts, supervised by Steven Devleminck and Roel Vande Winkel (co-authors of this article), is to bridge this divide. Central to this artistic research is Jay David Bolter and Richard Grusin's theoretical framework of remediation as outlined in their seminal work *Remediation: Understanding New Media*. Remediation, according to Bolter and Grusin, is a process that involves both the absorption and the transformation of earlier media practices, styles, and conventions. This encompasses an exploration of the idiosyncratic affordances – as both benefits and constraints, drawing on James J. Gibson's affordance theory (119) – of early loop-based devices and how they can be reimagined in a contemporary artistic context, thereby reflecting on the relationship between artistic creation and technology.

The inspiration for this artistic research originated from encountering "the new in the old" (Zielinski) in Richard Balzer's collection of phenakistiscope discs. Balzer presented his collection on a Tumblr blog[2] as animations instead of static images by digitizing them into the GIF format. Observing these discs in motion is crucial for appreciating their modernity. Some discs display intricately animated abstract patterns, predating the advent of abstract painting by more than 70 years. Others exhibit an ingenious interplay between the animations at the center and circumference of the disk, with all the animated figures – the term "frames" does not apply here as it is a single rotating image – visible simultaneously. From the perspective of an animation practitioner, this raises the question how these 19th-century artists developed their ideas, explored this newly invented medium and executed their work. On the other hand, this "exotic" form of animation arouses artistic curiosity, which initializes a dialogue between old and new media through artistic practice.

In addition to the artistic potential this type of animation has to offer, the aspect of remediation plays a vital role in the experience. The GIF format, with its short duration, loop-centered nature and absence of sound, is remarkably adequate in showcasing these fragile antique pieces *as* animation, rather than static images or museum exhibits. However, digitizing the phenakistiscope entails certain trade-offs. The haptic and interactive qualities of the physical medium (see Strauven), for instance, are lost. On the other hand, the viewer is no longer obliged to peer through the small apertures of a rotating disc into a mirror. From a creator's perspective, this perceptual transition to the digital realm permits more detailed animations and opens new pathways for artistic exploration. Additionally, the blog format introduces a different form of interactivity, enabling viewers to scroll through animations like a 21st-century *flâneur*.

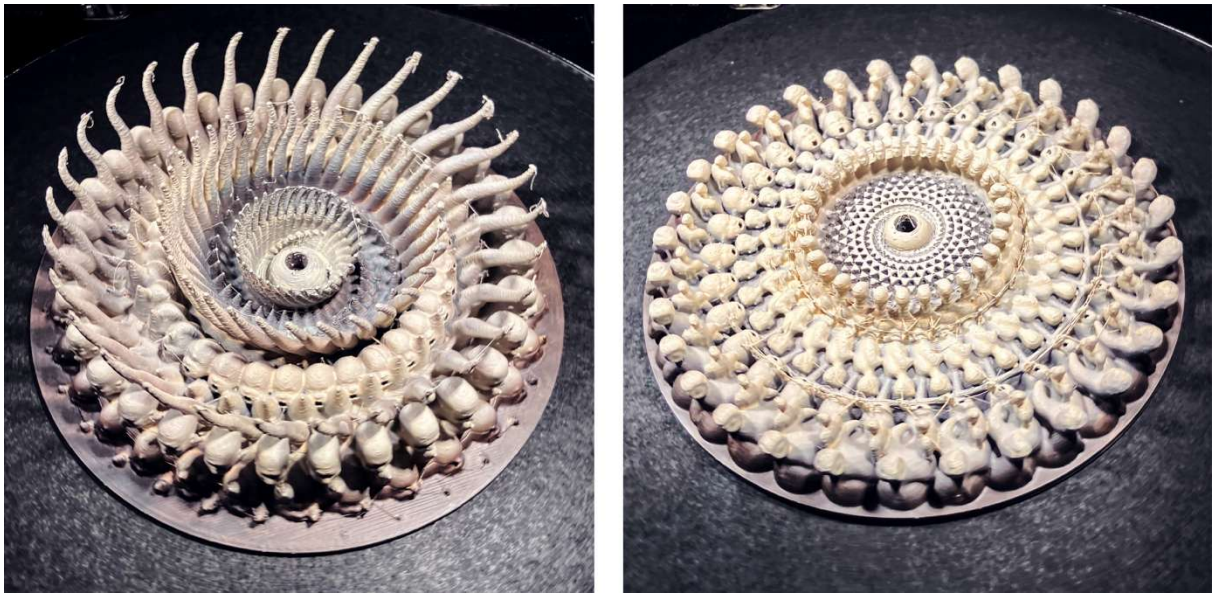
[2] The collection can be seen at the following link on Tumbrl.com, https://dickbalzer.tumblr.com

The preceding description hints to the methodological approach underpinning this research. An interlocking sequence of discursive and practice-based artistic research, for which Erkki Huhtamo coined the term *thinkering* – a contraction of tinkering and thinking, as described in his article "Thinkering with Media" – is central to dissecting and recombining the "DNA" of historical media devices. The role of the experiment is foregrounded in this process, drawing on Zielinski's famous quote: "if we deliberately alter the emphasis, turn it around, and experiment, the result is worthwhile: do not seek the old in the new, but find something new in the old." (3) In their seminal article "Experimental Media Archaeology: A Plea for New Directions", Andreas Fickers and Annie Van den Oever established the foundation for experimental media archaeology, emphasizing the importance of re-enactment and tacit knowledge, which is also essential in the relationship between artists and creative technology. Recently, their foundational work was further developed in the twin publications *Doing Experimental Media Archaeology: Theory* (Fickers and Van den Oever) and *Doing Experimental Media Archaeology: Practice* (Van der Heijden and Kolkowski).

Building on replicas created from historical documents and apparatuses, along with digital simulations and analog-digital hybrids, this PhD project expanded the "DNA" of the phenakistiscope mostly beyond the traditional two-dimensional screen to include installation work, dome projection, and virtual reality. *Hungry Ghost*, however, is primarily a short film (6:53 min)[3] – although some of the animated sculptures have also been exhibited as installations alongside the projected image.[4]

[3] Since its release in August 2022 the film has been selected for screening at 43 different venues, mostly in experimental animation/video art festivals or in media art exhibitions. At the time of writing, the film has received seven awards and four special mentions.

[4] At the Exhibition *Turn On* (19 January 2024 - 11 February 2024), Galerie Rotondes, Luxembourg, curated by Marc Scozzai.



[Figure 3. Sculptures from *Hungry Ghost* as presented at the exhibition *Turn On* (Luxembourg, 2024). The audience could explore the animation interactively though a synchronized tablet computer functioning both as camera and screen.]

Hungry Ghost: Research Impetus and Conceptual Focus

The initial focus out of which *Hungry Ghost* emerged was to investigate an aspect largely absent in optical toys during the 19th century: sound. Apart from some rare exceptions[5], phenakistiscopes, zoetropes and praxinoscopes were silent media. Yet, the inherent looping structure of these devices provides a compelling framework for investigating the synesthetic relationship between image and sound. Within experimental animation, visual music boasts a long tradition, exemplified by artists such as Oskar Fischinger, Norman McLaren, Len Lye and Mary Ellen Bute (See Mollaghan; Johnston). A second objective was to explore how multiple 3D printed sculptures could be combined into an extended work. Works that preceded *Hungry Ghost* within this artistic research process, such as *Status*

[5] Swiss company Hartmann-Bahon produced a combination of the praxinoscope and the music box. The Museo del Cinema in Girona (Spain) mentions on their website that the rotation mechanism of both devices was connected to provide synchronization between sound and image. See: https://museudelcinema.girona.cat/cat/colleccio_objectes_fitxa.php?id=7837

Quontinuum (2021)[6] and *Fossilized* (2021),[7] were restricted to a single sculpture as the foundation for a short film.

In the early stages of developing *Hungry Ghost*, an experimental phase aimed at devising strategies for image and sound synchronicity. In exploring potential collaborations with composers, sound artist Kaitlin McSweeney provided several recent pieces of music, including the eponymous composition ultimately used in *Hungry Ghost*. Close to *musique concrète*, the rhythm was crafted entirely from samples of household appliances: a crackling heater, a dishwasher, and a clothes dryer. The rich texture in the loop-based rhythm and the atmosphere evoked by the music provided a fertile ground for artistic exploration – although the choice for this specific composition was made intuitively, rather than based on rational arguments. By selecting this pre-existing composition, instead of a new score created parallel to the film, the thematic aspect of the hungry ghost was also introduced from the start of the creative process.

The hungry ghost, or *preta* in Sanskrit, represents one of the realms in the Buddhist cycle of existence. This figure is depicted as a wandering spirit enduring great suffering, often characterized by "bloated stomachs and tiny mouths, constantly tormented by thirst and hunger" (Rhodes 203). These afflictions serve as retribution for a prior life marred by jealousy, corruption, and greed – a relentless pursuit of unfulfilled desires. The concept of the hungry ghost in Buddhism bears a striking resemblance to the ideas articulated by Korean born German philosopher Byung-Chul Han in his book *Capitalism and the Death Drive*. Han argues that the unconscious fear of death is what spurs a compulsion towards growth and accumulation in capitalism, leading to ecological and mental self-destruction: "We optimize ourselves to death" (Han 8).

[6] See video on *Vimeo*, https://vimeo.com/575088628
[7] See video on *Vimeo*, https://vimeo.com/530782631

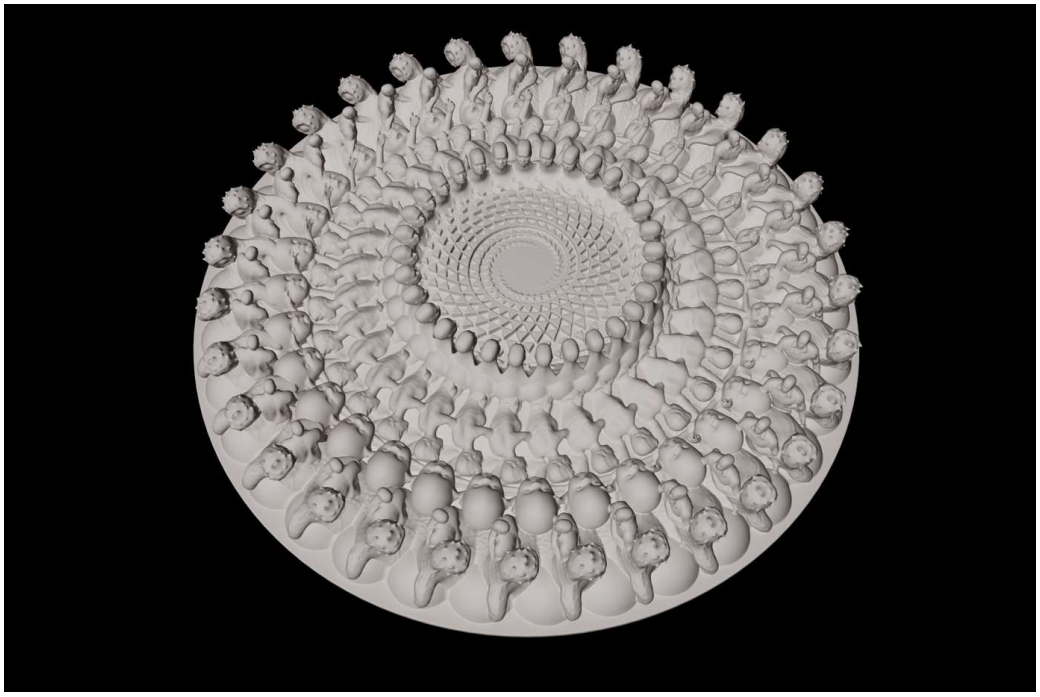
Drawing from Han's analysis, the Buddhist concept was expanded in the film *Hungry Ghost* to encompass Freud's notion of drive (*Trieb*) and Schopenhauer's concept of will (*Wille*) as forces that are simultaneously creative and destructive. However, how can these complex themes be articulated through a medium that relies on short loops? The subsequent section of this essay will explore this question in depth. But first, it is essential to elucidate the film's unconventional creation process and its connection to historical apparatuses, as the media archaeological approach and remediation strategies are fundamental to achieving the film's thematic objectives.

Filmmaking Process in Hungry Ghost

To a certain extent, *Hungry Ghost* was created similarly to many other contemporary films: a digital camera and light source were used, and the resulting footage was edited digitally. Yet, unlike most films, *Hungry Ghost* doesn't involve actors or conventional animated sequences of still images. Instead, its primary constituents are circular 3D printed sculptures, containing radially arranged sequential images, following the principles of the phenakistiscope and zoetrope – both devices simultaneously, as will be elaborated later.

[Figure 4. *Hungry Ghost*, film still]

The sculptures in the film are composed of digitally modeled, sculpted, and animated figures, both anthropomorphic and non-representational. These figures are organized into circular or spiraling arrays, creating seamless loops that embody the repetitive, cyclical nature of unconscious drives. Throughout the film's creation process, a repository of these loops was developed, allowing for various configurations. Every sculpture consists of multiple individual loops, resulting in ten 3D printed sculptures in total. Figure 5 presents a digitally rendered view of one such sculpture, demonstrating the integration of multiple loops into a cohesive 3D object.



[Figure 5. *Hungry Ghost*, digital render of a sequential sculpture]

The sculptures were filmed in real-time as they rotated on a record player (at 45 rpm, adjusted downward with the pitch dial), synchronized with the camera's frame rate (at 25 fps) so that each frame captures a subsequent segment of the sequential sculpture. In other words, the animation is "hardcoded" into the sculptures and transformed to an animation through the interplay of the rotation and the camera's shutter – a necessary intervention, as with the naked eye, all sequentiality would be lost in motion blur. Echoing Walter Benjamin's concept of the optical unconscious (37), the camera reveals what remains hidden for the unmediated eye. This is reinforced by the shimmering, flickering light cast on the sculptures. The effect is produced by displaying randomly generated particles through a deliberately defocused beamer, concealing as much as it reveals.

Over twelve hours of footage were recorded during the film's creation process, spanning from September 2021 to July 2022. Much of this time was dedicated to cinematographic experimentation: testing camera movements, lighting setups, various lenses, and materiality in the sculptures. This experimental approach is also reflected in the film's

editing process. Starting from the musical composition, multiple alternatives were explored as the number of loops and sculptures expanded, allowing the editing to evolve organically toward the final result. Consequently, *Hungry Ghost* is profoundly experimental, with more time invested in exploring creative possibilities than adhering to a predetermined plan.

This creative methodology is significantly different from the prevalent approach in narrative animation, where films are meticulously planned and paced prior to animation production. By adopting a more open, process-oriented approach, *Hungry Ghost* allowed for intuition, serendipity and associative thinking to play significant roles in both production and post-production. This creative process not only aligns with the film's thematic exploration of unconscious drives but also mirrors the iterative, layered nature of the drives themselves, as conceptualized by Freud and Schopenhauer.

Remediating Unconscious Drives

Through the notion of the hungry ghost, derived from Buddhism, the theme of insatiable desire, will and unconscious drives was introduced very early in the film's creative process. However, with ultra-short loops as its main constituents, constructing a traditional narrative becomes fundamentally impossible. As Dulac and Gaudreault observe, the phenakistiscope and similar optical toys are "by definition resolutely a-narrative" (231). This raises the question: how are these thematic elements incorporated into the film?

The central argument of this section posits that the formal characteristics of a specific mediation, coupled with the process of remediation, significantly shape the content and meaning they convey, even regardless of the depicted subject matter. This argument will unfold in two stages. First, an analysis of historical optical toys will uncover their inherent affinity toward the uncanny, rooted in their construction and operational principles. Subsequently, the film's distinct remediation of these devices will be examined to show how this process contributes to visualizing the unconscious drives in *Hungry Ghost*.

The Uncanny Ancestors

Through both individual artistic exploration and facilitating pedagogic workshops, it appeared that phenakistiscope and zoetrope animations resonate rather well with themes of the bizarre and the eerie – or, in psychoanalytic terms, the uncanny. In *The Uncanny* (originally published as *Das Unheimliche* in 1919), Freud builds upon psychiatrist Ernst Jentsch's earlier essay *On the Psychology of the Uncanny*, describing the uncanny as a psychological experience of discomfort or eeriness when something is both familiar and strange. Freud elaborates that the uncanny often manifests through the return of repressed thoughts, desires, and fears, animistic beliefs, doubles, involuntary repetitions, and uncertainties about life and death. Freud's analysis is grounded in E.T.A. Hoffmann's short story "The Sandman" (1817), in which protagonist Nathanael gradually descends into madness. As a child, Nathanael was traumatized by the figure of Coppelius, a sinister alchemist that visits his home at night and whose experiments ultimately led to his father's death. Later in life, Nathanael encounters an optician named Coppola, whom he believes to be Coppelius in disguise, reigniting his childhood fears. Nathanael's imbalance is further exacerbated as he falls in love with Olympia, whom he believes to be the daughter of his professor Spalanzani, only to discover she is an automaton, masterfully crafted by Coppola and Spalanzani. The story addresses repressed fears, doubles and the ambiguity between reality and imagination, the animate and inanimate. The notion of the automaton will be revisited later. First, optical toys will be approached on a more rudimentary level as *machines* that create the illusion of life.

Although zoetropes and phenakistiscopes are now often appreciated for their analog charm, many scholars highlight their machinic ontology. In his seminal work *Techniques of the Observer*, Jonathan Crary repeatedly addresses optical toys as machines rather than artisanal forms of animation, specifically referring to the phenakistiscope as "one of many

machines designed for the illusory simulation of movement" (Crary 23). Recent scholarship by Bantjes, Strauven and Turquety explicitly addresses phenakistiscopes and zoetropes as machines, whereas Gunning emphasizes their perceptual aspect, categorizing optical toys as "technological images" in the sense that they "manipulate human perception through a mechanical device" (495).

Dulac and Gaudreault further assert that "the temporality of optical toys is closer to that of the machine; it is more mechanical than anything else" (229). This leads them to identify three major aspects that determine the form of attraction in these devices: rotation, repetition, and brevity (ibid.). In other words, through their construction and operational principles, these machines seem to create conditions conducive to expressing the uncanny – although the term "uncanny" is not explicitly used by the authors:

> Don't all apparatuses impose a way of conceiving the subject they depict? In fact, can't something proper to the mechanics of the apparatus itself be seen in the bodies depicted on the disk? The phenakisticope's format and the way it functioned suggest a "world" in which everything was governed by circularity and repetition, a world which annihilated any hint of temporal progression. The subjects are like Sisyphus, condemned *ad infinitum* to turn about, jump, and dance. In another sense, the figures are machine-like: untiring and unalterable, they are "acted-upon subjects" rather than "acting-out subjects." (Dulac and Gaudreault 233 – emphasis in original)

As acted-upon subjects, these figures unequivocally resemble automata. But does this also lead to uncanny subject matter in the historical animations? This tendency appears to emerge even in the earliest phenakistiscope discs, Plateau's set of six discs published in 1833 by Ackermann and reprinted in Dorikens and Mannoni. Aside from two more neutral discs, this set features wriggling snakes, dancing dressed-up monkeys, jumping toads and

monstrous skulls (see Figure 6). Later phenakistiscopes by Plateau depict a dragon's head on a twisting ribbon and a metamorphosis from a beautiful young woman to a monster, drawn in a spiraling pattern from the center to the outside of the disc (see Figure 2). This last animation was likely made in collaboration with painter Jean Baptiste Madou, who also contributed to two other discs showing uncanny imagery. One of these depicts a demon, revealing itself by blowing into a fire and the other portrays a hooded monk disappearing and reappearing behind a pillar in a vaulted basement. As Dorikens and Mannoni observe, this subject matter stands in contrast to Madou's typical oeuvre as a printmaker and painter, which primarily focused on landscapes and genre scenes (39).

Unlike Plateau, who was initially trained as a visual artist before turning to science (Dorikens and Mannoni 19), Simon Stampfer, who invented his version of the phenakistiscope independently from Plateau, primarily employed semi-abstract imagery. Notably, many of the representational elements in his *Stroboscopische Scheiben* are of mechanical origin, such as rotating gears, wheels, hammers and anvils. This mechanical theme returns in many phenakistiscopes, as Dulac and Gaudreault (232) also note, particularly in the central area of the discs where the space is too confined for detailed representational imagery. As a result, the centers of these discs frequently feature (cog)wheels, pulleys, pistons, and rotating saw blades, often blurring the boundary between representational and abstract geometrical forms.

[Figure 6. Phenakistiscope discs by Joseph Plateau from the collection of the Ghent University Museum, photographs by Guido Devadder.]

The uncanny themes in Richard Balzer's digitized collection of phenakistiscope discs are too numerous to explore exhaustively, but some notable trends can be identified. One prominent theme is "being eaten alive": a crowned giant picks up a squirming man on his fork and devours him, a character leaps into a lion's mouth, and a bird flies into the jaws of a monster. Other common themes include monsters and devils chasing children, hiding behind doors, somersaulting into a top hat, or having their heads chopped off. Punishment, too, is a popular subject: women hitting men, men hitting women, and children being spanked endlessly.

The most transgressive phenakistiscopes, however, can be found in the personal collection of French antique dealer François Binétruy.[8] This set of 24 discs, published by Alphonse Giroux around 1840 and likely intended for a select audience, features explicit pornographic animations. No subject matter was off-limits: the discs depict bestiality, masturbation, and even a metamorphosis between male and female genitals. In a recent article on this specific set, Rod Bantjes highlights how these designs were deeply influenced

[8] See Collection François Claire Martin Arthur Binétruy, http://collection-binetruy.com

by the machinic nature of the medium itself, particularly through the portrayal of animated mechanical masturbation devices. As Bantjes notes, “Pistons relentlessly thrusting, gears endlessly meshing in pointless circular motion seemed to invoke an auto-erotic machine self-referentiality.” (1)

Although the previous discussion focused on the phenakistiscope, similar uncanny themes emerge in the context of the zoetrope. In an article titled “The Weirdness of Zoetropes” on the website *The Optilogue*, Stephen Herbert observes the “unusual and slightly disturbing nature of many of the subjects” depicted in these devices. Many of the themes identified in the phenakistiscope examples above can also be encountered in zoetrope strips. Herbert highlights recurring motifs such as characters eating one another, as well as the mechanical topos, including interaction between anthropomorphic figures and machines. He notably connects these themes to the incessant repetition and the “burgeoning world of machines,” (ibid.) underscoring the significance of the zoetrope’s machinic qualities in generating these uncanny effects.

While the preceding analysis might suggest that the phenakistiscope and zoetrope were inherently associated with sinister content, such a conclusion would be an overgeneralization. Many counterexamples show that the vast majority of these animations were clearly intended for the eyes of innocent children. Moreover, the uncanny was not something which was introduced first with the phenakistiscope. In the decades before its invention, the uncanny was already brought to the forefront through gothic novels and phantasmagoria shows (Mannoni 136), as well as many other forms existing since antiquity in various civilizations.

Despite this contextualization and numerous counterexamples, however, the uncanny also lurks in animations that were not intended to evoke it. This is particularly apparent in the repetitive, Sisyphean movements of the human body, especially when rendered with realistic

detail. In the realm of animation, this is closely related to the phenomenon of the uncanny valley (Tinwell; Bode). Robotics professor Masahiro Mori, who introduced the concept in 1970, describes the uncanny valley as occurring when humanoid puppets or robots closely resemble humans, but fail to be convincingly lifelike. As Masschelein notes (148), the human body and its reconfigurations are essential to this: "the human and the posthuman are at the center of the uncanny in the visual arts".

This theme of the human body and transgressions between the body and the machine will be elaborated on later, but before addressing *Hungry Ghost*, it is crucial to examine another significant aspect inherent to the phenakistiscope and zoetrope. Perceptually, these devices differ from contemporary moving images in the absence of distinctly separated frames. This effect is most pronounced in the phenakistiscope, where every figure in the animation sequence is simultaneously visible. In his essay *Morale du Joujou* (1853), Charles Baudelaire offers a detailed account of the phenakistiscope's perceptual qualities:

> The rapid rotation transforms the twenty openings into a single circular one, through which you see reflected in the mirror twenty dancing figures, looking exactly alike and executing the same movements with fantastic precision. Each little figure has benefited from the other nineteen. On the circle, it turns, and its speed makes it invisible; in the mirror, seen through the rotating window, it is motionless, executing in place all the movements distributed among the twenty figures. (Baudelaire 10 – translated from French by the authors)

By design, the zoetrope limits the number of images which are simultaneously visible, as the viewer looks through the apertures from the outside of the cylinder toward the paper strip situated inside, opposite the viewer. Veras strikingly refers to this multiplicity of animated figures as "doppelgängers" (39). The concept of the double is central to Freud's theory of the uncanny, epitomized in Hoffmann's tale "The Sandman" by the unsettling

lawyer and alchemist Coppelius, who reappears – seemingly – later in the story as the optician Coppola. Freud suggests that the double originally emerges from "the soil of unbounded self-love" that one experiences as a child, but when encountered later in life, "the 'double' reverses its aspect. From having been an assurance of immortality, it becomes the uncanny harbinger of death." (*Standard Edition*, 235)

In concluding the discussion of these historical apparatuses, it is important to note that the rotation governing these devices not only underscores their mechanical nature but also produces a significant secondary effect. When the number of figures on a spinning phenakistiscope or zoetrope matches the apertures on the disc or cylinder, the figures will appear stationary. However, when the numbers vary, the figures will seem to drift in the same direction as the rotation with more images than apertures, and in the opposite direction with fewer images. This technique is widely used in the corpus of phenakistiscope animations scrutinized above. Furthermore, any flaw or imperfection in the lithography will of course disrupt the sequential effect, revealing its underlying rotational mechanics. Wanda Strauven even categorizes them as devices based on the vertigo-effect, following the classification of toys proposed by Roger Caillois: "the nineteenth-century optical toys rather belong to the category of *ilinx*, since they provoke a form of vertigo due to the rotation of the apparatus" (Strauven 152, emphasis in original). While this aspect does not directly contribute to the uncanny, it nonetheless results in a disorienting and somewhat hypnotic visual experience.

[Figure 7. *Hungry Ghost*, digital render of a sequential sculpture]

The Remediated Unconscious in Hungry Ghost

The preceding discussion suggested that the historical optical toys inherently gravitate toward the uncanny, driven by their machinic ontology and "operational DNA" – characterized by rotation, repetition, brevity, and simultaneity. These elements served as the foundation for the remediation process in *Hungry Ghost*, facilitating the visualization of the will and unconscious drives, as articulated in Schopenhauer's philosophy and Freud's psychoanalytic theory. In Freud's theory, the uncanny is closely linked to the unconscious drives because it represents the moment when repressed elements of the unconscious return, disrupting the apparent stability of the conscious mind and revealing the hidden, often darker, aspects of human desire and fear. The following section will critically examine the specific modalities of this remediation, particularly how a latent uncanniness in the historical devices is channeled toward the exploration of unconscious drives. The strategic use of animation,

materiality, cinematography, and editing in the film will be essential in reimagining and adapting these operational principles.

This analysis will be situated within the theoretical frameworks of Schopenhauer's *The World as Will and Representation* and Freud's psychoanalytic theory, with primary references to *Beyond the Pleasure Principle* and *The Uncanny*. Additionally, Rudolf Bernet's *Force, Drive, Desire* will be a key reference, offering valuable insights into the intersections between psychoanalysis and the history of philosophy. Bernet identifies "surprising convergences between the psychological descriptions given by Schopenhauer and Freud" (16) with regard to "drive and desire, consciousness and the unconscious" (ibid.). These convergences form a crucial foundation for the following discussion.

Animation

The animated sculptures in *Hungry Ghost* play a central role in the remediation process, bridging the historical and contemporary, while embodying the aforementioned operational principles. These sculptures consist of geometric, biomorphic, and anthropomorphic figures, with abstract forms typically positioned at the center and anthropomorphic characters toward the circumference, mirroring their historical antecedents. This formal resemblance might already evoke a sense of the uncanny, as optical toys like the zoetrope are vaguely familiar with a broad audience, yet the remediated version as animated sculpture is likely unfamiliar.

Unlike some of the examples discussed in the previous section, depicting explicitly sexual or violent acts was deliberately avoided to prevent a one-dimensional interpretation – although the recurring tentacles in *Hungry Ghost* carry both phallic and violent connotations. In general, the gestures and actions of the anthropomorphic figures are more subtle and aim to evoke a sense of yearning or craving. For example, the infant figure, reaching out with its

hands and crying with an open mouth, represents an essential sense of longing and absence, mirroring the existential despair found in Schopenhauer's philosophy or as an outward manifestation of an internal state of tension according to Freud's theory. As with their historical counterparts, however, there is no hope for redemption within the endless loop. These repetitive, mechanical movements suggest a lack of conscious agency, aligning with Freud's concept of the compulsion to repeat, which Freud describes as having "an instinctual character and, when they act in opposition to the pleasure principle, give the appearance of some 'daemonic' force at work" (*Beyond the Pleasure Principle* 35).

This repetitive pulse in *Hungry Ghost* is further accentuated by the film's soundtrack, which features a short cycle of 1.31 seconds synchronizing sound and image. In her book *On Repeat: How Music Plays the Mind*, Elizabeth Margulis draws an interesting parallel between short loops in music and a phenomenon in verbal communication known as semantic satiation, where repeated exposure to a word causes it to lose its meaning. This could be applied to the anthropomorphic figures in *Hungry Ghost* whose movements appear mechanical and automatic, seemingly devoid of agency. In this context they too resemble automata, similar to their historical counterparts. Their realistic design positions them firmly within the uncanny valley, where lifelike figures evoke a sense of unease due to their almost-human appearance.

The individual loops were digitally merged into a single object, often overlapping and arranged in varying numbers within a radial array. This arrangement mirrors their historical predecessors, causing the loops in the sculptures to drift in conflicting directions, despite their material coagulation. Along with the circular morphology of the sculptures, this creates the overall impression of a "biomachine". The figures' movements – walking, jolting, twitching – suggest they are driving the rotation of the entire structure, reminiscent of Erkki Huhtamo's concept of the "fairy engine" in "Dismantling the Fairy Engine", where little people are

imagined living inside our technology, making it work its magic. However, in *Hungry Ghost*, the figures are not merely inhabitants living inside the machine; they *are* the machine itself.

Materiality

Consequently, materiality is a significant aspect of the remediation process in *Hungry Ghost*. In their three-dimensionality the sculptures differ from the vast majority of 19th-century phenakistiscopes and zoetropes, which used two-dimensional lithographs almost exclusively. There is, in fact, only one documented exception: French scientist Etienne-Jules Marey developed three-dimensional zoetropes depicting the flight cycle of a pigeon and a gull in 1887, as part of his research into animal locomotion. Building on data gathered through chronophotography, three-dimensional plaster casts were created and mounted in a zoetrope to provide a synthesis of motion (Braun 136).

In the remediation process of *Hungry Ghost*, three-dimensionality operates on both digital and physical levels. While it would have been technically feasible to animate and render the sculptures entirely in a digital environment, even replicating cinematographic effects with virtual lights and cameras, the choice to incorporate physical three-dimensionality is significant. This physicality, combined with the *musique concrète* elements in the film's rhythm, highlights the embodied nature of the drives and will. Schopenhauer's philosophy suggests that physical body parts are manifestations of the will, with teeth, throat, and intestines serving as the "visible expression of these desires: objectified hunger" (133). Extending this concept, "the whole body itself...is the appearance of the will, objectified will, concrete will" (140).

[Figure 8. *Hungry Ghost*, film still]

Similarly, Freud's theory of drives emphasizes the materiality of life, positing that the "attributes of life were at some time evoked in inanimate matter" (*Beyond the Pleasure Principle* 32) and introduces the death drive as "an urge inherent in organic life to restore an earlier state of things" (30). Freud also seeks biological and evolutionary evidence for the death drive, reinforcing the necessity of physical embodiment. Expressing such complex, embodied phenomena through an anemic digital simulation would lack the depth and resonance that physicality provides, underscoring the importance of material presence in conveying these philosophical concepts.

In the transition from digital model to physical "actualization" (Torre 241), imperfections inherent in the 3D printing process were not merely accepted but deliberately encouraged. Polylactic acid (PLA), the material employed for printing the sculptures, is known for producing unintended plastic threads when printing fine details, a phenomenon referred to as stringing or oozing. While these imperfections can typically be minimized through adjustments in the slicing software that prepares the 3D printing process, the settings

were intentionally manipulated to enhance this effect. When these spatial imperfections are set in motion, they transform into temporal noise, reminiscent of the scratches and dust seen in analog film. Moreover, these material anomalies reintroduce the aspect of the *ilinx*, the vertigo-inducing sensation caused by rapid rotation, which remains completely absent in sterile digital renders.

[Figure 9. *Hungry Ghost*, film still. The threads in the center of the image demonstrate the phenomenon known as stringing or oozing.]

The visceral entanglement of the intersecting loops reinforces the notion of the "biomachine". Anthropomorphic figures overlap and are cut through by abstract and biomorphic forms, creating ambiguity in the delineation and integrity of individual bodies. This treatment of the body aligns with the concept of bodily transgression, which Steven Shaviro describes as "new arrangements of the flesh" (130). In the context of film director David Cronenberg's work, Shaviro notes that this dissolves "traditional binary oppositions between mind and matter, image and object, self and other, inside and outside, male and

female, nature and culture, human and inhuman, organic and mechanical" (ibid.), thereby pushing the viewer further into the realm of the uncanny.

The remediation process in *Hungry Ghost* establishes a complex interplay between the organic and inorganic, life and death, primarily through its materiality. This dynamic aligns with Bolter and Grusin's remediation theory, which posits a tension between immediacy and hypermediacy – two modes that are intricately intertwined in the film. Immediacy, the drive to make the medium transparent and create a seamless, immersive experience, is evident in the synchronization of the live camera, rotating sculptures, and music, which collectively animate the figures as though they are coming to life. Conversely, hypermediacy, which emphasizes the mediated nature of the experience, is highlighted by the conspicuous artificiality of the 3D prints and the mechanical aspects of the sculptures and animation.

This tension between immediacy and hypermediacy does not simply coexist; it actively engages the viewer in a push-pull dynamic that both immerses them in the animated world and simultaneously reminds them of its constructed nature. This oscillation is central to evoking the uncanny, as it blurs the boundary between the animate and the inanimate, amplifying the uncertainty of what is truly alive. By destabilizing the viewer's perception, *Hungry Ghost* deepens its exploration of life, death, and the eerie interplay between the two, making the experience of mediation itself a critical component of its thematic structure.

Cinematography

As previously discussed, the camera doesn't only function as a tool for capturing video in *Hungry Ghost* but is also pivotal in the remediation process as an "external" shutter that replaces the slotted disc or cylinder found in the original optical devices. Moreover, the combined effect of the camera's shutter and the three-dimensionality of the sculptures

dissolves the distinction between the traditional phenakistiscope and zoetrope. Unlike the fixed viewpoint of a slotted disc or cylinder, the camera can be placed at any position and angle along the horizontal or vertical axis. The flexibility of the camera is mirrored in the orientation of the individual 3D loops that comprise the sculptures, with some loops aligned horizontally parallel to a phenakistiscope, and others vertically like a zoetrope. This allows for varying perspectives that reveal different aspects of the sculptures, visually representing the psychoanalytical concept of repression, as each angle inevitably conceals certain elements while exposing others.

The degree of simultaneity – multiple stages in the animated sequence that are visible simultaneously, aptly referred to as "doppelgängers" by Christine Veras (39) – is thus primarily determined by the camera's distance and angle relative to the rotating sculptures, literally framing the multitude of figures inherent to the sculptures. Notably, the film avoids providing a comprehensive, "panoptic" view akin to the historical phenakistiscope, which would show the entire animated sculpture at once. Instead, there is a gradual progression from side-view close-ups reminiscent of the zoetrope at the film's beginning, to top-down views that evoke the phenakistiscope, emphasizing the transition from the human elements of the sculptures to their more mechanistic aspects.

The camera's "live" recording – distinguishing it from stop-motion techniques – amplifies the film's sense of temporal indexicality (Mulvey), underscoring the tangible reality of the illusion. This process of shifting between still and moving images, a theme Mulvey associates with the transition between life and death, occurs repeatedly in the film's remediation process. Still images are animated, exported as a sequence of stationary objects, which are then set in motion on the record player and finally captured as still images by the camera. This cyclical transformation sharpens the perceived tension between life and death, reality and imagination.

[Figure 10. *Hungry Ghost*, film still]

This tension is further intensified by the flickering light, which, as Ernst Jentsch notes in his essay on the uncanny, can blur the distinction between life-sized wax figures and human beings in semi-darkness (12). The interplay of light and shadow in *Hungry Ghost* serves to deepen the sensation of the uncanny, drawing the viewer into an ambiguous space where the boundaries between the animate and inanimate, the real and the imagined, become increasingly indistinct.

Editing

Building upon the role of cinematography in shaping the viewer's perception and engagement with the uncanny and unconscious drives, it is essential to consider how editing further manipulates the film's temporal and spatial dimensions. Editing in *Hungry Ghost* is not merely a post-production tool but an integral part of the remediation process that allows the film to explore and express the unconscious drives or will.

In *Hungry Ghost*, editing operates on two distinct levels: temporal and spatial. Temporal editing, the conventional rearrangement of scenes and sequences over time, is complemented by a spatial form of editing that involves the reorganization of individual loops across various sculptures. Rather than being confined to a single sculpture, these loops are reconfigured – altered in position, orientation, and scale – across multiple 3D prints. This method draws inspiration from the historical practice of "zoetropic editing", as detailed by Dulac and Gaudreault (236), where multiple image strips were combined within a single zoetrope. Veras highlights the potential of this technique to construct a proto-narrative through associative connections (44). In *Hungry Ghost*, the modern reinterpretation of zoetropic editing is also crucial for creating associative meanings. Besides juxtaposition, the temporal recurrence and visceral entanglement of the individual loops allow the viewer to – quite literally – read between the lines.

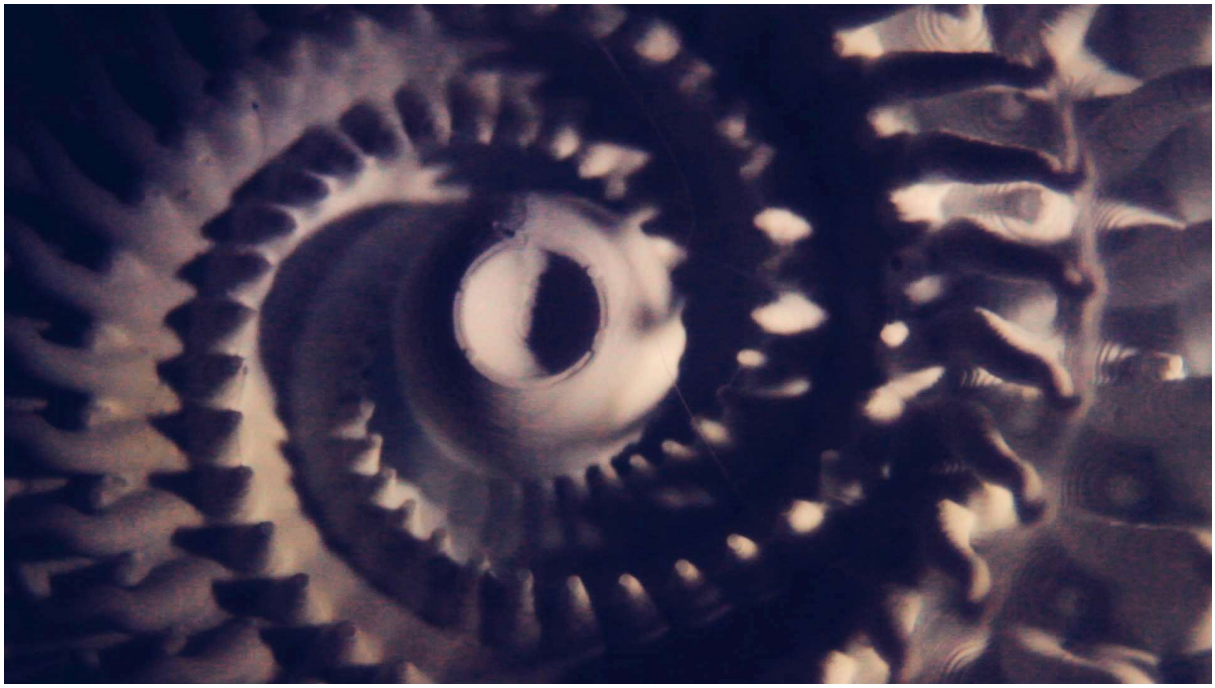
This method of editing can be understood as a reflection of the unconscious mind's operations. The overlapping and intersecting loops function similarly to superimposition, mirroring the way unconscious thoughts and emotions often overlap, conflict, and resurface. The recurring loops evoke a sense of *déjà vu*, where the same elements reappear but with subtle variations, making them both familiar and strange. The recurrence of these elements also suggests the return of repressed material in altered forms, aligning with Freud's theory of the unconscious, where repressed drives and desires resurface in disguised ways.

Beyond spatial editing, temporal editing plays a crucial role in transitioning from circularity to linearity, a transformation that was already initiated through the camera. The exact repetition inherent in the sculptures is subtly altered and linearized using a handheld camera, with each repetition introducing slight differences. Moreover, there is no chronological relationship between the creation of the sculptures and their appearance in the edited film. This non-linear approach in editing further fragments the circularity inherent to

the animated sculptures, disrupting the continuity of time and space. The result is a disjointed reality composed of repetitive instances, reflecting the non-linear and fragmented nature of the unconscious mind (*Beyond the Pleasure Principle* 22).

Despite the sense of non-linearity, there is a discernible progression in the film. As previously mentioned, the camera angles gradually transition from a side-view to a top-view, mirroring a transition from zoetrope to phenakistiscope. This progression can be interpreted as a symbolic journey from the life drive (*Eros*) towards the death drive (*Thanatos*). The editing reflects this thematic progression, moving from biomorphic to more mechanistic imagery, thereby illustrating the duality of the drives.

The fragmented circularity in the editing also highlights the tension between the temporal and the eternal – a concept that Freud links to the drives and supports at length with biological arguments. In *Beyond the Pleasure Principle* (40), he draws on the theory of German biologist August Weismann, who posited a division between the mortal (soma) and potentially immortal (germ-cells) parts of living organisms. This biological perspective aligns with Freud's theory of the death drive, which he conceptualizes as an inherent urge in organic life to return to an earlier, inanimate state. Although the hereditary function of DNA had not yet been discovered at the time of Freud's writing, his argumentation is strikingly consistent with the thesis posited by Richard Dawkins in *The Selfish Gene*. Dawkins describes living beings as "survival machines" for their DNA, the "immortal coil" of life (22).



[Figure 11. *Hungry Ghost*, film still of a top-view similar to the orientation of the phenakistiscope]

Mark Fisher further expands on this idea in *The Weird and the Eerie*, suggesting that the death drive is not merely a drive towards death but a force of death itself – a non-organic agency that operates within the organic, making us "exemplary cases of the eerie." (82) This concept circles back to Schopenhauer's theory of the body as the objectification of the will, where our bodies function as "automatons" driven by these primal forces, ultimately leading to death.

In *Hungry Ghost*, the editing process thus becomes a means of exploring these deep-seated drives, blending the organic with the inorganic, the temporal with the eternal, and the conscious with the unconscious. This interplay between the various aspects of the remediation process allows the film to engage with complex psychoanalytic themes, creating a cinematic experience that resonates with both Freud's and Schopenhauer's philosophical explorations.

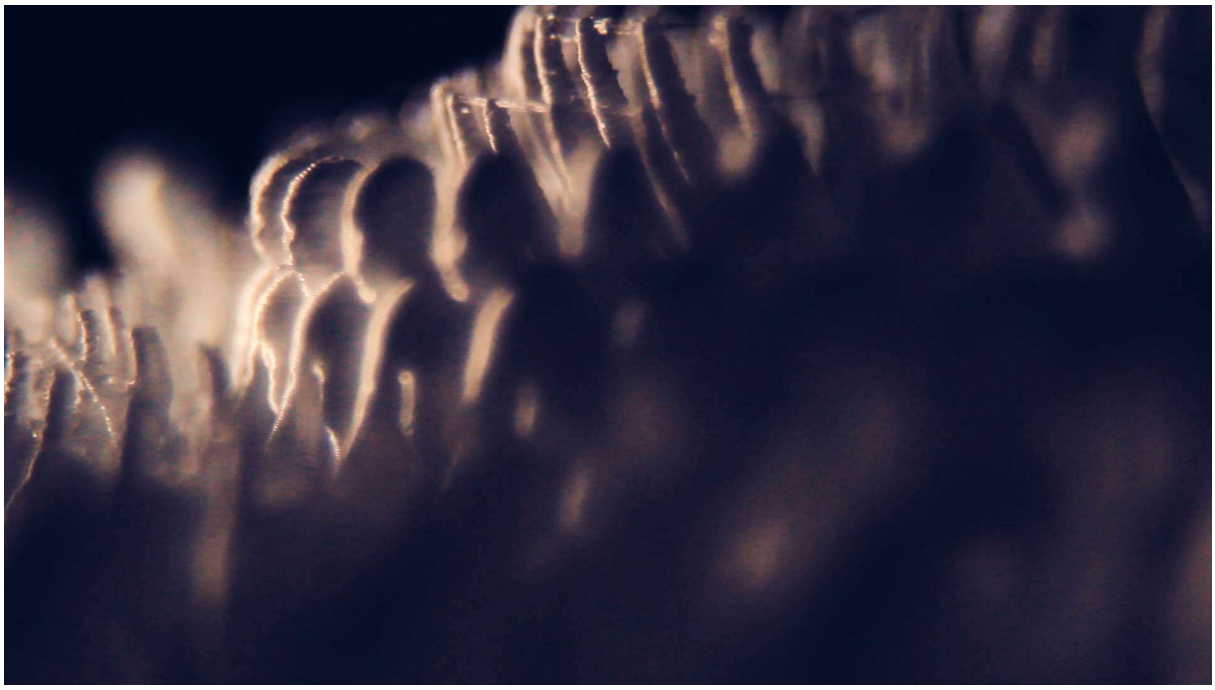
Conclusion

In conclusion, *Hungry Ghost* exemplifies how the specific remediation of historical optical devices can suggest meaning beyond traditional narrative structures, offering a visual exploration of complex themes such as unconscious drives. By tapping into the latent uncanniness of the phenakistiscope and zoetrope, the film's remediated approach to materiality, animation, cinematography and editing serves as a metaphor for the unconscious mind. The overlapping, recurring, and conflicting elements within the film mirror the processes of repression and return, while the manipulation of time and space blurs the lines between the animate and inanimate, the real and the imagined. This creates a film that is both circular and linear, disjointed and cohesive – reflecting the repetitive, machinic, fragmented, yet all-encompassing nature of Freud's unconscious drives and Schopenhauer's concept of the will.

On a broader level, *Hungry Ghost* offers a reflection on the evolving relationship between artistic practice and media or technology, demonstrating that this relationship is not only in constant flux but can also harness specific expressive modalities. Through experimental media archaeology, a deliberately transhistorical approach is highlighted in this artistic context, aiming to widen the understanding of the 19th-century devices from a creator's perspective. This revealed how their possibilities were explored artistically at their time of invention and raises the question how their affordances continue to shape expressive possibilities today. The insights gained from this transformative dialogue between old and new media contribute to the broader discourse on the role of remediation in contemporary art, providing a model for how the old can be reimagined – or reanimated.

Moreover, this exploration opens pathways for further research into animation that transcends the screen and sheds new light on the tension between liveliness and the uncanny when animation crosses over into the physical realm. This goes hand in hand with developing

creative methodologies that deviate from the well-trodden path and explore process-based approaches in animation.



[Figure 12. *Hungry Ghost*, film still]

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Lysen, Flora. *Brainmedia: One Hundred Years of Performing Live Brains, 1920–2020*. Bloomsbury, 2022 (305 pp). ISBN: 9781501378751.

Human beings find themselves amidst a profound paradigm shift, where the various technological mediations become intermediary agents that embody and enact the brain. Flora Lysen's *Brainmedia* explores the history of the connection between the brain and media and reveals how media act as a dynamic lens, shaping and being shaped by the brain. In this dance of perception and comprehension, these technologies sculpt an ever-evolving vista of the brain's representation.

The book transcends the boundaries of a traditional neuroscience text. Situated within the Foucauldian tradition, which is itself born by the aforementioned paradigm shift, the book delves into a deeper philosophical inquiry. It challenges the ontological question of "what is the brain?" by shifting the focus to the epistemological question of "how do we understand the brain". This shift reflects a fundamental change of worldview, rooted in Descartes' famous dictum "cogito ergo sum", in his three books, namely, *Speech in Method*, *Reflections in First Philosophy*, and *Principles of Philosophy*.

The core of Lysen's analysis centers around the intricate relationship between interfaces, media, and the brain's function. She contends that media representation itself shapes our understanding of the brain, highlighting this as a philosophical question about the human experience, and not merely a matter of brain function.

Throughout the book, Lysen meticulously dissects the limitations and biases inherent in media representations of the brain across five historical periods spanning over a century. The opening chapter exemplifies this connection between media and brain by analyzing an early twentieth century photomontage depicting a woman's brain superimposed on her image. This visualization serves a two-fold purpose: firstly, it illuminates the dominant scientific paradigm

of the era, localization theory, and secondly, it underscores the limitations of visualizing a live brain, a central theme pursued throughout the book.

Lysen draws parallels between historical scientific paradigms and prevailing cultural beliefs. However, the invention of the brain wave recorder mirrored the broader technological emphasis on hidden and invisible waves during the interwar period. It is not directly mentioned in the book that the rise of radio technology, fueled by the demands of wartime communication, coincided with the increased focus on electromagnetic waves. Brain waves, similar to radio waves, were perceived as carrying vast amounts of information. The popularity of devices like the Alphaphone reflected the prevailing focus on waves during this era.

Brainmedia explores how media representations of the brain intersect with dominant political discourses. Echoing the well-known saying, "whoever controls the media controls the mind," Lysen argues that the very act of representing the brain in action implies a form of control. This theme is further explored through the lens of "science-art." While acknowledging its potential, Lysen cautions against the danger for it to culminate in "citizen science," a form of hidden brain control. The final chapters delve into case studies where the dominant discourse is challenged, creating possibilities for deconstruction – a fundamental concept underpinning Lysen's analysis – as in the case of the Mutual Wave Machine that showed both the advantages and disadvantages of representing the brain, or that of the Hollywood film *The Devil Commands* (1941), discussed for its portrayal of the dangers of brainwave science.

The book's language itself reflects its Foucauldian lineage. Lysen's prose echoes Foucault's own, characterized by a literary style rather than the dry, technical language often associated with scientific texts. Her reliance on archival research results in a rich tapestry of examples, solidifying the book's status as a "thick description" in the anthropological sense.

Finally, if we want to draw a topographical map for the location of Lysen's book, this book would be placed among the books that try to reread the unread history of the brain and, in a word, bring it to the stage. The book reminded me of Shakespeare who loved acting. And he

wrote thousands of plays about this love. However, he never appeared on stage as a protagonist. The book describes the desire of the brain to portray itself. The brain's tool for this performance and creation of brain media is technology. Each chapter of the book describes with examples the development of technology in the course of history to represent and reveal the brain.

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Casetti, Francesco. *Screening Fears: On Protective Media.* Zone Books, 2023 (264 pp). ISBN: 9781942130871.

In times like these, we are constantly overexposed to media. We are surrounded by advertising, news, and various forms of audiovisual content: the news of the world is within our grasp.

However, the world itself still scares us: the unstable geopolitical situation, the specter of COVID-19 pandemic, the announced collapse of ecosystems are just a few examples of fears which menace our present and future. In this scenario, people may desire to disconnect from their physical milieu and safely reconnect with the world through other means: in other words, they may switch from immediate encounters with things to a "mediated immediacy" (14).

This is the focus and field of investigation of Francesco Casetti's latest book *Screening Fears: On Protective Media*, which enriches the author's longstanding research on cinematic experience while proposing a cutting-edge perspective on the role of media in contemporary society. Casetti, Sterling Professor of Film and Media Studies at Yale University, expands his gaze to modern screen-based media, questioning their function from a novel perspective. Starting from the cinematic experience, the author goes beyond Marshall McLuhan's famous statement that media are "extensions of man" and affirms the intrinsic protective function of media, which spare individuals' direct exposure to the world without interrupting their interaction with reality. This novel attribute is well explained by "the projection/protection complex", which embodies the "mechanism of disconnection and reconnection with reality that emerges thanks to enclosures and screens", while highlighting "the fear of dealing directly with the world" (16).

Following the structure of the book, the experience of watching a film at the theatre works as a pivotal mechanism, which connects a form of mediation from the past– the Phantasmagoria in late eighteenth century – and a widely-used, contemporary one – digital screen-based bubbles, such as Zoom calls. Through the lens of a media-archeology approach,

Casetti explores how these three dispositifs embody the projection/protection complex. Phantasmagoria gave the audience the opportunity to escape from the pressures of a turbulent age by making people able to explore a threefold universe. Cinema – especially cinema palaces of the twenties – can compensate the weight of existence by offering a comfortable setting. Finally, the contemporary digital bubbles help people isolating from their milieu while engaging them in face-to-face encounters at a distance (15).

This is the magic of screens: they are capable to combine spatial deprivation and sensorial excitation, to prompt both emergence of disciplinary systems that create a well-ordered world and growth of immune procedures against potential threats. According to the author, during the last two centuries, it has become evident that media have acquired the power to defeat death, and to put the threatening world at a tolerable distance. The projection/protection complex, in fact, plays hide-and-seek with reality: individuals are disconnected from their physical milieu and safely reconnected with the world through other means; they switch from immediate encounters with things and events to a mediated immediacy. The ambivalent game played by screens turns modern media into the Freudian "protective shield", as recalled in *Beyond the Pleasure Principle*: however – the author points out – this callous membrane is as flexible to external stimuli as the projection/protection complex. "There is no need to consider the environment in which we live as source of menace" – Casetti underlines –; "on the contrary, a better embeddedness in this environment can unearth unthinkable resources […] what emerges is the need for forms of protection in which fear and the fearsome, instead of being removed, are productively accepted and included in our ways of coping with reality" (170).

Screening Fears is, in this sense, a luminous reflection on the current role of media which tackles the problem of taking screens for granted – assuming the fact that we are overwhelmed by them. This vivid research concerning the function of screens appears not to be closed into the limits of theory, but rather roots in the concreteness of our present. From this

perspective, Casetti casts a new light on mediation across the last two centuries, putting into dialogue different, but extremely similar forms of mediation.

We live in the times of screenscapes, that is, screens which intercept the gaze and at the same time shape the space. However, we live in fearful times: the echoes of Anthropocene consequences are clearly perceived while reading *Screening Fears*. What to do, then? While accepting the protective property of screens, Casetti goes beyond the risk of screens to become a replacement of lost reality. In fact, screens do not simply protect us from the dangers of immediate encounters with threatening entities: like vaccines, they make us aware of the need of overcoming the distance that we have created – and eventually, more human.

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