A Sense of Meaning: *Applications of Embodied Cognition to Art Models*

Text/Hypertext/Subtext

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Declaration

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Abstract

Using as a starting point George Didi-Huberman's inquiry into what it actually means to have knowledge of an artwork, this practice-led research engages a dialogue between philosophy, painting, and cognitive science to explore how a cross-disciplinary account of visual perception might lead to a greater understanding of perceptual sense-making. By exploring both cognitive and embodied models of experiencing the visible, this investigation considers the application of painting as a philosophical practice, where the material practice of painting contributes to our understanding of the anatomy of meaning. It is a question of thinking materially, and what it means to understand; in Hubert Damisch's words, "…what does it mean for a painter to *think*?"[1] And in this context, my broad question is: what is the experience of the visible?

The central trajectory of this investigation seeks to situate how a painter might contribute through material practice to the broader philosophical and experiential vocabularies that have always existed around sight and sightlessness, including ideas around imagination, memory, vision and belief. This investigation is conducted through a body of artwork engaging and responding to the particular concerns integral to theories of perception including the relationship of surface to illusion, form to ground, as well as ideas of measurement and distance, sight and vision, eye and skin. This research practice anchors and tests various aspects of perception by orchestrating particular physical experiences that play with ideas of what is out of grasp, points of unraveling.

Framing this investigation, both in practice and research, are four central themes presented through an experimental writerly method of three parallel texts in an attempt to embody the ideas of this research. This approach devises a dialogue between the cognitive, the analytic, and the poetic, engaging an unorthodox method of presentation that integrates writing as practice into the written thesis. This method intends to situate ideas not only within scholarship, but in how that scholarship might be transmitted effectively.

Philosophical issues around perception including mental imagery, representation/depiction, and attention are explored, leading to concepts of embodied cognition, conceptual blending and metaphor. This is grounded in a discussion of Pierre Bonnard set in a framework of the neurophysiology of vision, recent studies of saccades in relation to memory and the body, and ideas of motor resonance. Drawing on philosophers from George Lakoff to Michel Serres, to neuroscientists from Antonio Damasio to Semir Zeki, this research articulates a link between Damisch and Didi-Huberman's position of art not as representation, but as direct experiential operation, illuminating the relationship between perception and thought intrinsic to the nature of meaning.

This practice-led research seeks to map and explore the anatomy of meaning/sense-making through the materiality of a painting practice, presented in an experimental form of writing. Ultimately this inquiry explores the question of the relationship between art and philosophy, the space articulated between language and the world, philosophizing as it were, with brush in hand.

[1] Hubert Damisch, "L'éveil du regard," *Les Lettres Nouvelles* 61, June 1958, 59.

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Introduction

Orasi_0: the ability to see; *visual perception*

The root verb μυεω *(mueo)*, in Ancient Greek means to shut (eyes or mouth) with a secondary meaning implying to cover or hide just under the surface. Its nuanced meaning to the Pre-Socratic mystics who derived their name from this word, is to blind in order to see. This sort of sight is in reference to discovery, to secret knowledge lying just beneath the surface, to the possibility of truth or αληθεια *(aletheia)* behind observable reality. The root word comes from μυς *(mys)*, meaning both muscle (hidden just under the skin) and mouse (hidden just under the floor).[2] To think about the experience of the visible, then, both internal and external, necessarily invites thinking about what is not visible, invisible, or blind.

The relationship between blindness and insight is an ancient one to be sure, linked to the relationship between surface and depth, eye and skin. Approaching ideas around insight in relation to the retinal – how coming to understand in a deeply meaningful way has to do with turning away the gaze rather than focusing on what occurs on the surface – makes intuitive sense to an artist. This points to ideas of sight somehow extending beyond the mechanics of retinal vision.[3] It is the surface/depth relationship that is central in much of philosopher Hubert Damisch's thinking, and which lies at the heart of painting as a philosophical practice. Yet, as philosopher Arthur Danto questions in his famous essay, "The Transfiguration of the Commonplace,"

> The central question in the philosophy of art is why art should be the sort of thing of which there should be a philosophy, for not just anything admits of philosophical treatment; and if art is one of the things that does so, this has to tell us something about art and philosophy at once. [...] For some while I have been urging the view that philosophy is concerned au fond with what I metaphorically characterize as the space between language and the world. [...] That they [artworks] stand at a distance from reality, and that they accordingly locate those who understand them in their own terms at a distance from reality, begins to be an explanation of the philosophical pertinence of artworks.[4]

This idea of *the space between language and the world* points to ideas of depth as a function of thought and depth as a physical quality arrived at by way of surface, and articulates a philosophical-material approach

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[2] Information obtained in dialogue with Classics Professor Apostolos Athanassakis, UCSB. C.f. Abarim Publications online *Theological Dictionary of the New Testament*: The verb *μυεω (mueo)* "means to initate into the mysteries (the hidden things) or to be introduced to things not known before or not commonly known." This is also the root for mystery μυστηριον *(musterion)*, which is "not an enigma, but something hidden just under the surface, something that can be pried out from under observable reality just like a mouse can be pride out from under its cover."

[3] Indeed as Norman Bryson states in regard to the act of looking "Once disframed, the brightly luminous segment is found actually to be constituted within the invisible, the dark or unmarked remainder that extends beyond the edge of peripheral vision into the space that wraps its way round behind the spectator's head and behind the eyes. What can be seen is supported and interpenetrated by what is outside sight, a Gaze of the other enveloping sight on all sides." (Norman Bryson, "The Gaze in the Expanded Field," *Vision and Visuality*, ed. Hal Foster, New York: The New Press, 1988, 101).

[4] Arthur C. Danto, "The Transfiguration of the Commonplace," *The Journal of Aesthetics and Art Criticism*, Vol. 33, No. 2 (Winter, 1974), 139-148.

to sense-making.[5] Thinking about these concepts as a painter, ideas around image and mind, thought and representation, are of course central. But what is unique about painters is that our medium and practice, with its own qualities and rhythms, possesses an untroubled privilege where material invention enjoys a confluence of form and content. This invests surface with a materiality that points to the seductive idea that painters construct visibility, and in turn, meaning, from almost nothing.[6]

a_context

As a starting point, ideas around the philosophy of perception establish the territory of this project. That is, do we see what is external to us in an objective way, or do our minds and/or bodies participate in formulating an experience of the visual, and if so, to what extent, and how? Philosophy of mind considers the nature of perceptual data and experience in relation to knowledge and beliefs about the world. For 18th century British Empiricists like John Locke and George Berkeley, sense data itself constitutes a wall sealing us from viewing and experiencing objective reality. This debate culminated in 20th century language philosophy, where logical positivists such as A.J. Ayer argued that sense data is all that you can see and all you can describe or talk about, and the rest is speculative metaphysics. It is a question of the relationship of our senses and their inherent limitations, and how we might understand the nature of perception, specifically visual perception. From this perspective, the fundamental question becomes: what is the relationship of thought to image?[7]

Phenomenological traditions, on the other hand, build on continental philosopher Maurice Merleau-Ponty's idea of the primacy of embodiment, which is particularly relevant to painting. Merleau-Ponty was concerned with perception as linked to our "existing as a body;" that is, conditioned by "being-in-the-world."[8] He emphasized the body as the primary site or source of knowing the world which led him to the ontology of

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[5] The idea of a philosophical-material approach is rooted in biological and phenomenological philosophies of art. For a concise account including Merleau-Ponty, Langer, and Baumgarten, see Adrienne Dengerink Chaplin "Art and Embodiment: Biological and Phenomenological Contributions to Understanding Beauty and the Aesthetic," *Journal of Contemporary Aesthetics*, 2005.

[6] Part of this connection, I argue, stems from the idea that meaning though stimulated by the material, is ultimately an embodied emotional experience, literally *felt* in the body. As Antonio Damasio argues, humans interpret their environment through their emotional responses, which are physiologically realized in the body. This builds on William James's idea that all thinking, including logical reasoning, is grounded in feeling. Mark Johnson develops this further, stating that "Human thinking is a continuous feeling-thinking process that is forever tied to our body's monitoring of its own states." (Mark Johnson, in *The Meaning of the Body: Aesthetics of Human Understanding*, Chicago: University of Chicago Press, 2007, 98).

[7] This perspective aligns perception with thinking. As Rudolf Arnheim states, "Was it seeing or was it thinking that solved the problem? Obviously the distinction is absurd. In order to see we had to think; and we would have had nothing to think about if we were not looking. [...] I assert not only that perceptual problems can be solved by perceptual operations, but that productive thinking must solve any kind of problem perceptually because there exists no other area in which true thinking can take place." (Rudolf Arnheim, *New Essays on the Psychology of Art*, Berkeley: University of California Press, 1986, 492). Furthermore, as Matthew Bowman articulates, the relationship of thought to image creates a bridge where "...the idea that painting, because of its material properties, is construable as a mode of thinking. That is to say, there is a conjunction between depth as a physical quality and depth as a function of thought." Matthew Bowman, "The intertwining — Damisch, Bois, and October's Re-Thinking of Painting," *Journal of Contemporary Painting*, 5.1, April 2019.

[8] Maurice Merleau-Ponty, *Phenomenology of Perception*, trans: Colin Smith, London: Routledge & Kegan Paul, 1965.

"the flesh of the world" *(la chair du monde)*, claiming that the body is not only a thing but also a condition of experience and complicit in accessing the materiality of what is "external" to it.[9]

Ideas of embodied cognition since the 1990s build on this perspective, engaging a number of structural components including metaphor, mapping, and integration, to explore how abstract concepts are derived from the body and how this relates to the nature of meaning and visual perception.[10] Embodied cognition and blending theory present a position where individuals are constantly mapping and networking information derived from different territories of knowledge (or "mental spaces"). This functions as a sort of montage or collage of abstract elements interacting, where "input spaces" combine to form "blended space" creating new meaning.[11] Recent studies in neuroscience over the last few decades have begun to complete a picture of how we might understand visual perception. In exploring the mechanics of the eye in relation to the brain using technology that has been refined since the millennium, cognitive philosophy has begun to use this information to deepen its thinking about the relationship between sight, vision, and knowledge. In acknowledging crucial links between brain, body, and world, a perspective emerges offering a platform to explore our bodies as both "physical structures and as lived, experiential structures – in short, as both 'outer' and 'inner,' biological and phenomenological."[12]

To explore these ideas I turn to Pierre Bonnard, specifically his method of working with drawings and by memory, as a means to explore not only the relationship between eye and skin, surface and depth, but as evidence of embodied practice and its relationship to how painting might contribute to how we understand the experience of the visible. This is structured through a discussion of some aspects of the neurophysiology of vision developed by neuroscientists Margaret Livingstone, Semir Zeki, and Eric Kandel, among others, as well as studies conducted by cognitive neurobiologist Vittorio Gallese et al around motor resonance and embodied empathy.[13] These studies are used to establish terrain to explore ideas about perception as a confluence of awarenesses discussed with reference to American psychologist James J. Gibson, and in dialogue with ideas of embodied cognition and theories of enactivism.

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[9] Maurice Merleau-Ponty, *The Visible and the Invisible*, trans: Alphonso Lingis, Evanston: Northwestern University Press, 1969.
[10] George Lakoff and Mark Johnson, *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought*, New York: Basic Books, 1999.
[11] Fauconnier, Gilles, and Mark Turner, *The Way We Think: Conceptual Blending And The Mind's Hidden Complexities*, New York: Basic Books, 2003;
[12] Francesco Varela, Evan Thompson, and Eleanor Rosch, *The Embodied Mind: Cognitive Science and Human Experience*, Boston: MIT Press 1993, xv.
[13] My engagement with cognitive studies took some shape in dialogue with Barry Smith at The Centre for the Study of the Senses (CenSes) hosted by the Institute of Philosophy, School of Advanced Study, University of London, and founded with Prof. Colin Blakemore. Here research on cross-modal effects, multisensory integration, sense of agency and bodily ownership, the cognitive penetrability and individuation of the senses, etc. are studied in collaboration across a range of fields including philosophy, psychology, neuroscience, anthropology, etc. Through this alliance conversations were initiated with George Lakoff, Vittorio Gallese, John Searle, Semir Zeki, and I began to experience the challenges present for a painter approaching these issues through practice, and seeking to communicate to a greater academic community not only in practice but in writing. This has led me to see the necessity to contend with language itself, parallel to my painting practice, in order to find an effective form to present my research.

Enactivism places meaning within a flow of experience where a reflexivity emerges to expose a "continuous process of immanent meanings that involve structures, patterns, qualities, feelings, and emotions," placing "meaning within a flow of experience that cannot exist without a biological organism engaging its environment."[14] These ideas have been central to theories of cybernetics – locating a circularity or a loop between inner and outer, self and other.[15] Ultimately this position challenges the representation of the world as "independent of our perceptual and cognitive capacities by a cognitive system that exists independent of the world." This perspective is based on a coupling of organism and environment where the world is perceived actively through ongoing bodily activity and understood in relation to a flow of subjective experiences.[17] This is a representation of the world that is not independent of our cognitive and perceptual capacities; it is a perspective that presents our active complicity in material reality, challenging the existence of a cognitive system that is independent of the world.[18]

This is especially significant as mechanisms of human meaning extend far beyond the capacity for language. However, by examining metaphor in language, embodied cognition reveals the role imagination and creativity play in how meaning is generated, by way of the body. This perspective builds on Didi-Huberman's evocation of a "whack of white" to reference both the visual and the virtual by way of the phenomenal and experiential.[19] Embodied cognition develops this line of thought asserting that all abstract thought is based on metaphorical thinking, and arising from an embodied human experience of the world. Underlying this is the view that figurative thought and language are actually pervasive rather than exceptional, normative rather than aberrant. Looking at metaphor as embodied, however, rather than as a comparative mechanism, bears on logical positivism and how ordinary language carries meaning.

This role of language in relation to the world points to Damisch's interest in the relationship between surface and depth, and Didi-Huberman's idea of rupture.[20] These ideas are corroborated in empirical studies in cognitive neuroscience, specifically studies exploring the brain's attraction to ambiguity/rupture/openness

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[14] Johnson, *The Meaning of the Body: Aesthetics of Human Understanding*, 10. C.f. Andy Clark, *Surfing Uncertainty: Prediction, Action and the Embodied Mind*, Oxford: Oxford University Press, 2016.

[15] C.f. Norbert Wiener, *Cybernetics or control and communciation in the animal and the machine*, Cambridge: MIT Press, 1961; C.f. Gregory Bateson, *Steps to and Ecology of Mind*, Chicago: University of Chicago Press, 1972.

[16] Varela et al., *The Embodied Mind: Cognitive Science and Human Experience*, xx.

[17] Felix Guattari refers to this as the "machinic unconscious" where meaning develops "…inside individuals in their manner of perceiving the world and living their body, territory, and sex, as well as inside the couple, the family, school, neighbourhood, factories, stadiums and universities … it is populated not only with images and words, but also with all kinds of machinisms that lead it to produce and reproduce these images and words." (Felix Guattari, *The Machinic Unconsious: Essays in Schizoanalysis*, trans. Taylor Adkins, Cambridge: MIT Press, 2010, 10).

[18] The concept of mind, then, becomes situated in an extended system. Gregory Bateson describes this dynamic structure: "We may say that 'mind' is immanent in circuits of the brain which are complete within the brain. Or that the mind is immanent in circuits which are complete within the system, brain plus body. Or, finally, that mind is immanent in the larger system, man plus environment." (Gregory Bateson, *Steps to and Ecology of Mind: Collected Essays in Anthropology, Psychology, Evolution and Epistemology*, Chicago: University of Chicago Press, 1972, 317).

[19] George Didi-Huberman, *Fra Angelico: Dissemblance and Figuration*, Chicago: University of Chicago Press, 1995.

[20] C.f. Didi-Huberman, *Confronting Images*, trans. John Goodman, Pennsylvania: Pennsylvania State University Press, 2005, specifically the idea of the image as rend.

as terrain for learning. To animate this I discuss Aristotle's conception of Mimesis as *re-enactment* brought about by way of a representation of a real or imagined act – linking it to the concept of *Mathesis*, or learning/coming to understand and the pleasure this elicits.[21] Throughout I reference Michel Serres, not only in his discussion of Bonnard in *Veils*, but in his ideas of corporeal imagination as a rendition of and reference to embodiment.[22]

b_presentation

In order to adequately explore and present my concerns, I employ an unorthodox presentation where I have devised an inter-textual structure comprising of a *text*, *hypertext*, and *subtext* within a thematic framework of four concepts: *aporia*, *agnosia*, *anopsia*, *aphasia*. The *subtext* is essentially the body of supportive footnotes to the *hypertext*, which itself operates as in-depth textual support to the *text.* This *hypertext* consists of academic research and analysis around my area of interest in perception, language, image, specifically engaging the history of analytic philosophy with current approaches in embodied cognition and blending theory. I call forth various thinkers in order to paint a picture of a speculative possibility, and have allowed my subject to drive the flow of ideas covering broad territory, which accounts for the chorus of thinkers and ideas I have conjured. This is a targeted presentation, which not only serves to animate in language, texture, and experience, the nature of this area of concerns, but calls forth a strategy of enactment within an academic environment as a method of scholarship that sits more effectively between practice and research, ultimately addressing how to present most effectively my practice *as* research.

The *text* itself is a compilation of my own and others' writing that I have collected and assembled over an extended period of time. I have taken shorter (a few words) and longer (several hundred words) passages from various sources and woven them into a narrative about and around my specific concerns. Some passages are verbatim, some I have modified and altered, and some I have crafted. I include alongside the bibliography and references to the *hypertext*, a separate list of references for the *text*, but I have not cited specific authorship within the text as I have in the *hypertext*.[23] Instead I allow these passages to exist among and between other texts by myself and other writers, as a deliberate act of appropriation, montage, and weaving; an inter-textuality that deforms, reconfigures and blends various texts among other voices and my own, intending a sort of disorientation.[24] The

[21] Aristotle, *Poetics*, trans. S. H. Butler, London: Macmillan, 1917.

[22] C.f. Michel Serres, *The Five Senses: A Philosophy of Mingled Bodies*, London: Bloomsbury Press, 2008.

[23] This reference list is not exhaustive or exact, and there have surely been omissions. My intention is not to claim ownership, rather this is an intentional act of appropriation, and as such any omissions are not a deliberate act to conceal authorship. These passages have been collected over a long period of time and without this intention in mind at the outset, and as such, some references have been lost, not noted, or forgotten.

[24] This speaks to experimental avant-garde writing in resisting ideas of wholeness through form that more conventional organic work promotes. In discussing Kathy Acker's work to which this presentation is indebted, Georgina Colby situates this method as a polemic against Cartesian dualism. C.f. Georgina Colby, *Kathy Acker: Writing the Impossible*, Edinburgh: Edinburgh University Press, 2016, 3.

result is a compilation of passages, collated, manipulated and altered to blend and clash into a cohesive narrative talking around my subject.[25] The relationship between the three texts points to an experimental bricolage which intends to shift meaning from content and form, and back again, as a writerly enactment and embodiment of my subject.[26] My contribution to this field of knowledge is not only in the body of work I present, but in this specific format which I have devised to speak about how painting works, staging a compositional technique and textual act of re-production between experimental writing and academic scholarship.

The form of the *text* takes shape as a dialogue between two central characters, which is presented almost as a monologue by a narrator who is not distinct but clearly present. As the dialogue floats between these three sources, there is a folding that occurs, bringing notions of identity and ideas of an intrinsic self into play, and pointing to the heart of questions of agency central in the philosophy of perception. This folding places the reader (and viewer) both inside and outside the dialogue, the characters' thoughts, and the narrator's perspective – on which the introduction of the *hypertext* then builds, creating a chorus of dialogues and ideas through my own authorial voice and the concepts engaged. Tonal shifts in the *text* serve to further highlight this internal/external motion, and intend a crucial destabilization which both the writing and my paintings appeal. This appeal asks of the reader and viewer to make sense, setting up a condition that speaks to *sense*, both as sensory and sense-making (or the opposite of nonsense).

With this method I have sought not only to transmit in texture, quality, and structure the very nature of the ideas I explore, but in doing so, to explore the possibilities of carrying over this philosophical terrain to questions of received language, ideas of originality, and problems of authorship.[27] There is of course a long history of experimentation around these questions, including Comte de Lautreamont's *Chants de Maldoror*, Walter Benjamin, Virginia Wolf, Gertrude Stein and surrealist exploration of automatic writing, as well as more

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[25] Some inspiration was drawn from ideas of text-selection, "writing-through," chance, and the non-intentional composition ('diastic') of Jackson Mac Low and John Cage, particularly as methods of negating authorial voice. C.f. Jackson Mac Low, 'Poetry and Pleasure" in *Thing of Beauty: New and Selected Works*, ed. Anne Tardos, Berkeley and London: University of California Press 1999/2008; John Cage, *Silence: Lectures and Writings*, Weslyan: Welsyan University Press, 1961.

[26] Experimental writing here specifically is used to refer to the "obstruction of normal reading" (C.f. Marianne DeKoven, *A Different Language: Gertrude Stein's Experimental Writing*, Madison: University of Wisconsin Press, 1983). Particularly interesting to this research are processes of shadowing and transference of textual appropriation and how this relates to fundamental drives around creation contained in ideas around knowing and not knowing (C.f. *On Not Knowing: How Artists Think*, ed. Elizabeth Fischer and Rebecca Fortnum, London: Black Dog Publishing, 2014).

[27] Though this method speaks to a particular feminist approach to writing (including Gertrude Stein, Djuna Barnes, et al.), and relates to Kathy Acker's idea of the penetration of male texts to challenge traditional ideas of literary insemination, my presentation is not directly about appropriating male texts specifically with a feminist intent, though this exists as a voice in my life, my work, and my research. If there is a link to the feminist movement and the importance and function of writing as a rejection of centralized ideas of male dominated property and ownership, it is in subverting a dominant male paradigm embodied in analytic philosophy by presenting an academically subversive work devoid of centralized narrative through de-forming source texts that are not necessarily male, and without the concern of a politicized or sexualized authorship. If this has occurred it is in the nature of the ideas which I occupy here, rather than a deliberate taking of arms as it were.

contemporary experimentations by William Burroughs, Kathy Acker, Chris Kraus, and Kenneth Goldsmith to name a few.[28] There is also an established cinematic history of appropriated and montaged material from Sergei Eisenstein to Jean-Luc Goddard to Alfred Hitchcock to more contemporary experimentation by Christian Marclay. Meanwhile appropriation in art has been present in a more obvious way since cubist collages, ready-mades, further developed by artists such as Jasper Johns, Robert Rauschenberg, and Sherrie Levine, among a long list of others.[29] It has become clear to me in engaging with questions of the nature of perception, that the presentation of concerns in this area necessitates reckoning with the idea of language itself, which in turn would need to be presented not only as a tool, but as an auxiliary area of inquiry and premise for research.[30]

With this in mind, the *text* grows from a series of fragmented, non-linear associative textual connections that I stitch together in a semi-blind fashion, whose overall thematic content forms a cohesion. The intention is one of disruption and self-reflexivity, where the molding and transforming occurs not only in the inter-relationship between the three texts, but in the relationship between method, form, and content. There is a deliberate use of mixed tenses in the *text* itself, which is not only a refusal of linear temporality but speaks to purposeful reticulation as a strategy of disjunction.[31] This strategy looks to engage ideas of the relationship between language and ontology, seeking to initiate a destabilization whose subtext cultivates a more oblique approach to question not only what it is we think we know, but our ability to know at all. My work as a painter tries to materially work through some of these questions, and this writing intends to situate ideas not only within scholarship, but in how that scholarship is transmitted effectively.[32] So in this way, both my painting

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[28] C.f. Rosalind Krauss, *The Originality of the Avant-Garde and Other Modernist Myths*, Cambridge: MIT Press, 1986; Walter Benjamin, 'The Author as Producer,' in *The work of Art in the Age of Its Technological Reproducibility and Other Writings on Media*, trans Edmund Jephcott et al. Cambridge: Harvard University Press, 2009.

[29] Sherrie Levine is of particular interest in her un-authorized appropriative practice, where she states that as she conceives of a picture as "a space in which a variety of images none of them original blend and clash.' [...] 'we indicate the profound ridiculousness that is precisely the truth of painting." As quoted by David Evans, "Introductions: Seven Types of Appropriation," in *Appropriation*, London: Whitechapel Gallery and MIT Press 2009, 81; C.f. Marilyn Radall's discussion of Sherrie Levine and Kathy Acker's 'plagiarism' in *Pragmatic Plagiarism: Authorship, Profit, and Power*, Toronto: University of Toronto Press, 2001.

[30] This approach further draws from David Joselit's famous essay "Painting Beside Itself," which situates painting within and about a network. In this sense, it bears witness to its own context, and as such is not only self-referential, but deeply embedded in a context, which it is simultaneously engaged in composing. As Kolja Reichart and Christian Kobald articulate, "Joselit's idea of transitive painting that accounts for the conditions of its production presumes that there is an outside, an overarching language. Yet art objects increasingly speak their own dialects; they do not refer to the conditions of their production, they exist *within* them." (Kolja Reichart and Christian Kobald, "Essay: After Work," *Spike*, no. 43, Spring 2015).

[31] This finds residence in ideas of paragrammatic writing, ideas of infinity of code, network of connections as discussed by Georgina Colby, *Kathy Acker: Writing the Impossible*, 26, in relation to Julia Kristeva's, "Toward a Semiology of Paragrams" *The Tel Quel Reader*, New York: Routledge, 1998, 25-49.

[32] This approach was also influenced by Derrida's choice of narrative in *Memoires of the Blind*. Practice as research has involved a bearing witness to my own research and practice. So this writing is offered as a sort of testimony, which seems to me to necessitate a different approach to traditional scholarship, and has led to this presentation here. As Michael Newman articulates, "The act of bearing witness requires that evidence always be accompanied by testimony that usually takes the form of a narrative of some kind. [...] Derrida does not give us descriptions of how drawings look or appear. Rather, he tells stories. [...] So here we have a possible relation of drawing to narrative. Derrida's intention is not to reduce drawing to the illustration of a story. This is because we are not primarily concerned with drawing as image. The story arises in relation to the mark as trace ..." (Michael Newman, "Drawing Time: Tacita Dean's Narratives of Inscription," *Enclave Review*, Spring 2013).

practice and writing practice have become a material embodiment of the ideas they occupy. I have chosen a submission format that integrates writing as practice into the written thesis, which involves as well some choices around the layout and visual presentation of this written component, including placing the *subtext* spanning the bottom of the parallel texts *(text/hypertext)* as a means to visually unify the inter-textual dialogue between the three. This choice of method is a deliberate means to embed content into form, and visa versa, as a more effective way of conveying a sense of meaning, as it were.[33]

c_practice

This investigation and research is conducted through a body of artwork engaging and responding to the particular concerns integral to theories of perception explored in the research and the writing. Deepening a formal investigation of some of these concerns finds residence in the humanist tradition of measuring, figuring, containing and bringing to human scale – and the ultimate impossibility and fallibility of this compulsion. Pushing against this tradition, this research practice takes as its focus abstract imagery of the cloud/atmosphere as a symbol of immeasurability.[34] Though the nature of vision is important to ideas around visual perception, my practice has not been an exploration of optical illusions or a systematic testing of retinal functioning. Rather, my research has examined specific studies involving the neurophysiology of vision in relation to the brain as a means to ground some of the philosophical debates around the nature of perception in relation to intentionality. Bringing this in dialogue with the materiality of studio practice exposes painting as a philosophical practice that might productively contribute to this discourse. Ultimately, this exploration is about the relationship between seeing and knowing.

The work created during this period of research follows the thematic structure of the text engaging four parallel lines of thought/central directions: *aporia:* space (disorientation), *agnosia:* touch (embodiment), *anopsia:* sight (measurement), *aphasia:* sense (wonderment). Each series of work around these loose thematic structures functions as studio experiments to scrutinize elements of vision, sight and perception in relation to the body and embodied experience, seeking to explore and clarify how a painter might contribute to the dialogue around seeing and knowing which has emerged during the course of this research. This is conducted with reference to formal concerns which structure how I present my practice here, namely relationships between form and ground, measurement and distance, surface and depth, eye and skin. The body of work takes shape between large-scale installation wall work, florescent paintings and prints, etched steel and rubbings. Its presentation here sits as a visual essay at the end of the written presentation, preceded by short texts situating the various

[33] As Kathy Acker questions self-reflexively, "Do I write to express what is made or to make?" C.f Georgina Colby's discussion of this comment in relation to poesis and faktura, Colby, *Kathy Acker: Writing the Impossible*, 7.

[34] Of particular interest and influence is Damisch's exploration of Leonardo da Vinci's idea of "bodies without surfaces" in relation to ideas of spatial understanding as delineated by geometry and the invention of perspective. C.f. Hubert Damisch, *A Theory of /Cloud/: Toward a History of Painting*, trans. Janet Lloyd, Stanford: Stanford University Press: 2002, 124.

aspects and elements of vision and visual perception I have engaged from the perspective of a painter. Each of these sections in turn refers back to the *text*, *hypertext*, and *subtext* in a similarly reflexive method that the work itself seeks to engage with in its own way.

d_conclusion

en-orasi_0: the inability to see directly; reflection; vision or insight

In developing this research, in making paintings, and in spending some time looking at and studying artists such as Bonnard, this project argues in form and content that visual perception as documented and explored in the materiality of paint, offers a compelling account of perception as embodied and enactive. That is, by generating aesthetic experiences felt in the body, painting engages an account of perception that draws on the nature of materiality, where not only does the body causally alter perceptual processing, but reveals that visual perception operates in an embodied way. This position suggests that the body in dialogue with the environment plays a constitutive role in how the visual system represents the world, and most importantly, that visual perception impacts and is impacted by cognition. Painting as a philosophical practice presents a picture of perception that is both cognitive and embodied, in reciprocal dialogue with the world, and as such contributes to the dialogue around the nature of consciousness and our experience of the world.

The idea of vision articulating a self-referentiality between mind and life, inner and outer, points to ideas of a unified subjective experience that underpins a position that the mental and the physical are not separate domains. That is, from this perspective, painting serves to mediate our visual perception of the world, so that chromatic and spatial elements within the practice of painting impact how the world is perceived *collectively*.[35] This is an act of invention and intervention, where painting determines what we see rather than documents something external, and in this sense engages, and in a way, determines the nature of visual meaning.[36] As Damisch states, "images are now part of our relationship with experience."[37] In a sense, this is part of what Norman Bryson calls politics of vision, where vision is socialized to the extent where there is complicity but

[35] C.f. Vlad Ionescu, "If one looks through the colours and shades of a painting, then these chromatic elements have a strong impact onto the way that the viewer perceives the world. The painting is not just a sign of the world but it also mediates our visual perception of the world. In this sense, the visual culture 'invents' the landscape because we look at Dutch 19th century landscape painting in order to see *its* colours and not in order to treat the painting as a sign for the actual landscape. The position of formalism towards visual culture is founded on the bracketing of the communicative function of images. One has to describe how artistic images determine our perception of nature and not how images help us communicate about nature." Ionescu, "What do you see? The phenomenological model of image analysis: Fiedler, Husserl, Imdahl," *Image & Narrative*, Vol. 15, No. 3, 2014, 98.

[36] As Sargy Mann articulates, "By inventing new structures of expressive sound, one actually experiences depths and subtleties that have possibly never been experienced before. [...] The eyes and ears are not fixed capacity instruments like cameras and microphones through which the brain can see and hear. Looking and listening continues to improve with experience. Higher order variables can still be discovered even in old age." Sargy Mann, *BBC Interview*, 1994.

[37] Yve-Alain Bois, Denis Hollier, Rosalind Krauss and Hubert Damisch, "A Conversation with Hubert Damisch," *October*, Vol. 85 (Summer, 1998), 3-17.

also surrender.

> For human beings collectively to orchestrate their visual experience together it is required that each submit his or her retinal experience to the socially agreed description(s) of an intelligible world. {…} I begin to articulate my retinal experience with the codes of recognition that come to me from my social milieu(s), I am inserted into systems of visual discourse that saw the world before I did, and will go on seeing after I see no longer… Everything I see is orchestrated with a cultural production of seeing that exists independently of my life and outside it: my individual discoveries, the findings of my eye as it probes through the world, come to unfold in terms not of my making, and indifferent to my mortality.[38]

While I am neither a philosopher nor a scientist, my intention in convening this chorus has been to ground what I have experienced in my practice.[39] As research requires findings, my discoveries lie in the cognitive studies I have researched offering further dimension to some of this territory by examining the nature of vision, sight and visual perception – which I present in dialogue with philosophy of mind and painting practice, in order to build a more complete understanding of our experience of the visual. In this sense my conclusions present painting as an effective means and a suitable, if not crucial, domain to contribute to overcoming a philosophical tradition that treats the mental and the physical as two distinct metaphysical areas. This argument stems not only from positioning consciousness as a biological process, so that cognitive studies are critical, but that the materiality of painting offers essential means through which to understand the nature of a unified subjectivity to which we are all partial. Though there have been new and recent trends in *neuroaesthetics*, I am *not* offering a critique of this approach here.[40] Rather, I present specific studies of the brain and of vision from the last decade or so, which when viewed alongside current debates in philosophy of perception, give dimension to some of the central concerns of painting, which are not only about painting.

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[38] Bryson, "The Gaze in the Expanded Field," 101. He continues: "The 19thc saw the rise of a theory of vision in which the truth of vision lay in the retina, in the physiology of the eye and the neurology of the optical apparatus. In the 20thc the conception of vision as primarily a domain of retina and light has subtended a number of key activities: in art history, formalism, in art theory the approach to art via the psychology of perception, in the work of Gombrich and Arnheim; in the construction of museums and exhibition spaces premised on the practice of decontextualizing the image in order to permit unmediated communion between the viewer's eye and pure form. {…} Postmodernism has entailed moving beyond this episteme and acknowledging the fact that the visual field we inhabit is one of meanings and not just shapes, that it is permeated by verbal and visual discourses, by signals and that these signs are socially constructed, as are we. {…} The real discovery here is that things we are told to be private, secluded and inward – perception, art the perception of art in the museum – are created socially. What is at stake is the discovery of a politics of vision. {…} Let us say it a bit easier, since Lacan, to think of visuality as something built cooperatively, over time, that we are therefore responsible for it, ethically accountable." (Bryson, 91-108).

[39] It seems important to acknowledge that artists have historically been aligned with both traditions, from Leonardo da Vinci to David Hockney, from Leon Battista Alberti to Sigmar Polke. There has also been historic tension between disciplines – each staking superior claim to the possibility of touching *truth*. Along with philosophy, all three disciplines, seek insight. So it is the relationship between sight and insight that ultimately takes hold of this project.

[40] Neuroaesthetics is a word coined by neurophysiologist of vision Semir Zeki. John Hyman offers insightful critique in "Art and Neuroscience," *Beyond Mimesis and Convention: Representation in Art and Science*, ed. Roman Frigg and Matthew Hunter, Dordrecht: Springer, 2010. It is further argued in this same edition referencing James Elkins and Peter Galison that "… humanities-based studies of visual materials only become more interesting and intellectually rigorous as we increase our engagement with science." (199).

As Damisch articulates:

> … the problem, for whoever writes about it [painting], should be not so much to write *about* [sur] painting, than to attempt to write *with* it, without claiming to understand it better than the painter, but rather with the intention … to see more clearly, thanks to painting, into the problems that preoccupy it, and which are not only, nor even first and foremost, problems specific to painting – if they were, the painter would simply have to devote himself to this art.[41]

In this way, and despite the inherent complexities of such an approach, I offer an open dialogue between disciplines presented in an experimental writerly format as a contribution to this field. My studio practice and the artists I've looked at during this period of research, directly and indirectly play with and test areas of perception that studies in neuroscience explore, which corroborate some of the philosophy around this area, which in turn is evidenced by artists' work in the studio, and so on. This elliptical network is embedded in the method I have crafted to present these ideas. While the relationship of surface, material, and substance may itself be seen as the central concern of painting, my claim to knowledge is in creating the groundwork for a speculative position that not only painting itself furthers, but that this unison of disciplines galvanizes, and that the voice of the writing here animates and, perhaps, substantiates. It may be that this trinity holds the possibility of forming a point sharp enough to begin to scratch the surface.

[41] Damisch as quoted by Yve-Alain Bois and John Sheply in "Painting as Model Reviewed Work(s): *Fenêtre jaune cadmium*, ou, *Les dessous de la peinture* by Hubert Damisch," *October*, Vol. 37 (Summer, 1986), 125-137.

Text/Hypertext/Subtext

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It was as if he didn't occupy his own presence. As if somehow he wasn't whole – but a patched-up, incomplete compilation of a union. You could almost see clearly what his mother looked like even though you've never seen her. But she was clearly there in him. He sort of shared his own presence with the genetics of his past in a way that robbed him of himself somehow.

Saskia wasn't like that. She had a strength of character etched on her face. One that was clear to have been derived from superb genes, but nonetheless her own. Regardless of resemblances she might carry from her ancestors, she stood as a force, peculiar and apart. But as her character was natural to her, instinctually present, the force of her presence was sometimes diluted in a mess of insecurities and self-doubt. Like somehow she had no sense of who she was, where her natural self stood at odds with her own self image. So she found that she was almost acting all of the time, teetering between a freedom of self, and projecting an entirely constructed and caricatured self. Something lying between what she believed herself to be, what she feared she actually was, and what she desired herself to be. Looking at him, though, she could only picture his mother. It's quite bizarre to picture someone you've never seen. You could perhaps describe them as you imagine them, but mostly in essence. An idea of their presence, rather than a detailed physique. So often the idea of someone's presence is separate from the characteristics of their physique. Or otherwise their physique is their essence. Like the cobbler in town. Big and bald, covered with tattoos reading books on religion, gently fixing her shoes for free while they chatted. His essence was precisely how he looked. Isaac's wasn't. The idea you would have of him was somehow separate from his physique. Which seemed to sort of change – you couldn't really make up your mind about what he looked like. Sometimes fantastic, sometimes poor,

1 The enactive model of perception is a biophenomenological approach to the mind-body problem, where participatory sense-making places perception as "an expansion of experience, redressing the balance between knowledge and being."[42] It is a position that is not passively receptive, or even receptive with some inner processing, but rather literally *enactive* – where we are actively imagining our reality, engaging in a responsive mode of seeing and experiencing.[43] In this model, perception constitutes a form of action in that we do not first perceive and then act – action itself contributes to perception. This approach takes as its premise that the mind is embodied and that our organism is engaged in an ongoing interaction with our environment. We are interactive, trans-active, and reactive on a visceral level – there is no disembodied meaning, understanding, or reasoning. But most of this meaning-making operates on a marginally conscious level involving images, feelings, emotions.[44] Not only are the elements that constitute visual, auditory and tactile data embodied, but they are also interoceptive in the sense that posture, balance, action, etc. are also taken into account with the same level of emphasis.[45]

Philosopher, theorist and writer Michel Serres takes on this perspective arguing that the world makes sense by way of our own corporeality. He contends that everything has orientation and leans in one direction or another, has in some sense a left hand or a right hand, and has shape and posture that are caused or effected in some way by gravity, inclination, and/or conductivity. Consider, for example, our pervasive and foundational experience of balance. It is mapped onto so many of our artistic, legal, mental health, and architectural domains that it seems to be an integral part of the natural order of things rather than a metaphor from our own learned uprightness. For Serres, "orientation can thus be said to be originary, invariable, irreducible, so constantly physical that it becomes metaphysical."[46] Our embodied physicality is, for all intents and purposes, complicit in constructing our conceptual reality, and to such a pervasive level that we are not even aware of it.

Enactivism places both the constitution and the meaningful organization of the perceived world within the field of action of the perceiver, and in turn within the ecology of a community or environment.[47] This is at once a cognitive and embodied approach to perception, where the nature of the body and its internal workings, as well as its dynamic engagement with the environment constitute, or in fact generate, an active perceptual experience. Here perceptual experience is (causally) affected by sensorimotor contingencies, and is in turn tied in reciprocal dialogue with the environment. This model accounts for the biological organization of the body within the environment as well as the experience of the body from the inside. It is an *extended mind* approach, where life and mind have an inherent self-referential relationship, stipulating and evidencing a reciprocal dialogue between internal and external.[48] This perspective not only addresses a tendency to allow theoretical explanations to overshadow the immediacy of lived experience, but points out a fundamental tension between language and thought, text and image, where something that cannot be explained cannot be seen; indeed, "the limits of my language mean the limits of my world."[49] The importance of looking at the mechanics of visual perception and recent developments around the neurophysiology of the brain can help clarify

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[42] Varela et al, *The Embodied Mind: Cognitive Science and Human Experience*, 1993.

[43] This position builds on the ecological bottom-up approach to perception based on a relationship between the observer and the external object, so that substantial London: Chapman & Hall 1956, 258). Stemming from Husserl's formula of the lived body as a center of orientation as presented in *Logical Investigations* (1900),

[44] C.f. Antonio Damasio, *The Feeling of What Happens: Body and Emotion in the Making of Consciousness*, London: Vintage Books, 2000.

[45] The early phases of phenomenology first presented these ideas, which were later developed and reworked by Maurice Merleau-Ponty and, more recently, Gallese, Shaun Gallagher, and Antonio Damasio as well as George Lakoff and Mark Johnson's concepts of embodied cognition, and Gilles Fauconnier and Mark

[46] Michel Serres, *The Troubador of Knowledge*, trans. Shelia Faria Glaser and William Paulson, Michigan: University of Michigan Press, 2000, 15.

[47] Here questions of agency become important. If the mind is embodied, and even extended, where is the self, subjectivity, and consciousness? Re-casting Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*, Chicago: Univeristy of Chicago Press, 1999.

[48] C.f. Varela's concept of autopoesis as an organism's "spatially bounded and continual process of regenerating the necessary conditions of their material of material self-production." (Francesco Varela, *Autonomy and Autopoiesis*, in Roth, G., and H. Schwegler (eds.), *Self- organizing Systems*, Frankfurt: Campus

[49] Ludwig Wittgenstein, *Tractatus Logico-Philosophicus*, 1922 (5.2).

always a bit peculiar, with strong features that seemed to alter, ones that were there in persistence but not in mass. He seemed both tall and short, slim and thick, young and old, elegant and rough; and yet somehow you felt you had a firm sense of him.

Today though he seemed to share his face with his mother. Something more real and present than the potential each day holds of watching something unknown inhabit the same face. Its strangeness made her want to leave quickly, and she abruptly ended the chatting and walked away.

When she saw him again, he spoke with a dull deep voice, soothing and soft, and vaguely hoarse.

This idea – that matter is not solid – whatever the form we ultimately interact with, is actually made up of particles, and then more, until at some point we don't really know the nature of matter. There are theories, conjecture, experimentation, guesses – but we really have no clue. Perhaps it reverts back into itself and offers its reflection in reverse, or the particle's density grows to nothingness, or…, his deep voice trailed off for a moment. Science is exploring, so is philosophy. What if…what if the answers to the nature of matter lie simply in our relationship to it?[1] What if, in examining the surface of matter, we can access and decipher its nature visually, physically, to reveal some sort of code behind it that's actually part of us? If art were able to translate the language of matter, as it is written in its own skin. And if we were to discover in this the quest for a lost language, a pre-babel unified code, the word and voice of all matter – somewhere suspended in weightless matter.

Isaac paused to turn around. Saskia was standing before him intently listening but never managing to conceal the constant tendency she had to flee. It caused whoever didn't know her well to feel a sense of urgency, to want to pin her down, hold her still,

attention goes to "properties that are not intrinsic to the thing but are relational between observer and thing." (Ross Ashby, *An Introduction to Cybernetics*, enactivism develops phenomenology's position of embodiment as the source and method of meaningfully organizing perceptual data.

revisited within the domain of philosophy of perception as the embodied mind approach by philosophers and cognitive scientists such as Alva Noë, Vittorio Turner's ideas of Conceptual Blending.

agency and subjectivity within this extended framework implicates notions such as normative competence, freedom and control, and personal identity. C.f.

existence is what essentially characterizes every member of the class of living beings. [. . .] autopoeisis refers to systemic organization of this process Verlag, 1981,14-23).

how the visual system operates, but also how understanding or real meaning might be generated. That is, our relationship to the world stems from the relationship of sight to insight, vision to understanding.

2 Cognitive science explores the process of fragmentation within the mechanism of perception through blending theory. This describes our ability and propensity to blend disparate concepts into something new. It is the mechanism of how we process the external internally. In The *Encyclopedia of the Social and Behavioral Sciences*, Gilles Fauconnier defines conceptual blending as the:

> …basic mental operation that leads to new meaning, global insight, and conceptual compressions useful for memory and manipulation of otherwise diffuse ranges of meaning. It plays a fundamental role in the construction of meaning in everyday life, in the arts and sciences, and … is the crucial capacity needed for thought and language.[50]

Blending theory grew from Arthur Koestler's concept of bisociation introduced in The *Act of Creation*,[51] which asserts that creativity arises as a result of the intersection of two disparate and often abstracted and fragmentary frames of reference, which blending theory has identified as an intersection that leads to a type of unification in the form of a novel blend. The cognitive process suggests that these novel blends constitute the formation of a totality, which occurs by way of a cohesion of fragments and abstractions. Blending theory presents a position where individuals are constantly mapping and networking information from different territories of knowledge (or "mental spaces"). This functions as a sort of montage, a collage of abstract elements interacting – where "input spaces" combine to form "blended space" that create new meaning.[52] Neurobiology has begun to explore this perspective, providing empirical evidence showing that we access part of the visual cortex when we access metaphoric abstractions.[53] This view takes as its premise that perceiving is a mode of thinking, since every act of perception already involves a capacity for abstraction in its ability to select significant structure.

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[50] Gilles Fauconnier, *The Encyclopedia of the Social and Behavioral Sciences*, N.J. Smelser and P.B. Blates (eds.) Oxford: Pergamon, 2001.

[51] Arthur Koestler presents a theory that unifies three aspects of human creativity: humour, science and the arts, arguing that the underlying processes are similar. the creative process is linked to the "bisociation of matrices "– where the intersection and overlap of two or more matrices leads to an alternate, novel situation London: Arkana, 1964.

[52] The roots of this position lie with I. A. Richards and Paul Ricoeur, and more recently with Max Black. C.f. Max Black *Models and metaphors: Studies in language*

[53] Jamrozik, A., McQuire, M., Cardillo, E.R. et al. "Metaphor: Bridging Embodiment to Abstraction," *Psychon Bull Rev* (2016) 23: 1080.

lest she leave. Instead, though, she quietly sat down and watched Isaac, the light breeze circling around her.

It's like the place where truth happens, he continued. You can see that among all the information-carrying systems, the genetic code and the verbal code are the only ones based upon the use of discrete components, which, by themselves, are devoid of inherent meaning. But ultimately they serve to constitute minimal units that have sense, strange entities endowed with their own, intrinsic meaning in a given code. Normally you would think that structure is distant from norms and rules. But in code modeling practice, norms and rules are actually encoded as precise procedures. So somehow it's an act of externalizing the inner process that leads to the compositional artifact.[2] And if you look at nature that way, like it's an externalized code, then you could decode it. And what could be more powerful than translating the word of nature, the voice of matter, the grammar of the universe? He became visibly excited by the possibility, but controlled his agitation so that it was absorbed into the general state of composure that he always possessed.

Saskia had hoped to avoid any exchange with Isaac after seeing his mother in his face. He seemed to have altered a bit since she saw him earlier, and she allowed herself to be convinced by his present image. So she sat still, and tried to respond.

But we can only be certain as far as our own immediate sense of surface. Even if on some level you might expect to be torn between two seemingly paradoxical urges. Part of you wants to spend the day wrapped in a cocoon, relaxing and playing with your toys. But another side of you is just as committed to spearheading some major endeavor. You feel exhausted from trying to build the perfect world. She rubbed her shoulder and continued. Above everything else, understand that you're approaching everything in the world and universe as writing that resembles our constructed human writing. You see, if all art is a form of writing - with meaning, symbolism, and precision, then what you believe you've discovered as an inherently existing code of nature is ultimately self-constructed. You have imposed your own will, ingesting, digesting and regurgitating what you believe you perceive before

With this theory he presents parameters of knowledge and problem solving including codes of rules, strategies and matrices of thought. He argues that or reality. Herein lies the foundation of blending theory, including its defining parameters of metaphor and style. C.f. Arthur Koestler, *The Art of Creation*,

and philosophy, Ithaca: Cornell University Press, 1979.

3 See Appendix 1a.

4 The visual brain is central to the relationship between image and text. Neurophysiologically, the visual, somatosensory, and auditory worlds are a closely linked and intertwined series of maps that are modified by experience. For example, on a primal level the relationship between text and image overlaps in the brain, and forms a complex self-wiring orientation of selective cells. The same part of the brain that is used for facial recognition (first stimulated by our first visual contact with our mother's face) is also used to process text as we begin to learn to read.[54]

[54] Semir Zeki, *A Vision of the Brain*, Oxford: Blackwell Scientific Publications, 1993; C.f. also Michael J Arcaro, Peter F Schade, Justin L Vincent, Carlos R Ponce,

you. But language itself is actually like externalizing constraints that are otherwise merely implicit. Limiting the representation of an essence into an actual form, a discernable physique, so it's as if it lives not in itself, but somehow becomes a portion of that around it. She stopped, confused by her own thoughts.

It's an impassible point. *Aporia.*[3]

Looking across the water, it lacked a little of midnight. In the east the moon, rising high above the rocks that fringed the water, was making a lane of light. It almost served to disengage the event at hand, suspending it in a sort of chaotic unfathomable lot of time. But the view, though pleasant, felt like a wispy apparition, far too insubstantial and superficial for the purposes of her imagination.

Take the case of the wild Samoan, she began again. What he knew, he carved on stones, then hid most of them. You see, he objected to living in the wild on aesthetic grounds – he did not like the idea of hunting, even less the idea of sleeping in a tent. But the Samoan sailor lived for four years alone on an island off the coast of Chile, rescued at last in 1708. Before this bizarre twist of fate, he had lived as a wild child until about 14, when he was discovered mute and naked in a forest outside of a deserted mining town on the far reaches of his land. Slowly he learned to speak a composite language of signs and symbols, and was finally sent out to sea. They considered him an ideal emissary, as his strange history never allowed a discernable interest in sex, money, or other worldly matters to develop. So many people reveal themselves most clearly in their reactions to sexuality and to money. He possessed none of this. This asset though also prevented you from getting a good sense of him. The idea you had of him was as vague as his constantly changing physique, one he dressed and undressed, accessorized and banalized, while he searched for ways of being. Before he was sent away on the voyage across the great expanse of unknown water, he began to dress in outlandish costumes and was barely able to utter an intelligible string of words. But he managed to train as an excellent horseman, became obsessively neat, had a passion for the colours green and navy blue, and displayed an extraordinary memory, especially for patterns and faces.[4] Yet his past never came back to him, and after his second discovery living in the wild, an unknown man murdered him with a dagger at a carnival.

Margaret S Livingstone, "Seeing faces is necessary for face-domain formation," *Nature Neuroscience*, 2017.

Isaac sighed, trying to make sense of this story.

What was strange, she added, was that he managed to learn quite a bit in his solitude. And he seemed to be plagued with an urge to record it. Yet, as he had no grasp of any language really, he constructed a set of symbols, letters and characters, and carved them on stone. They constituted a most strange sort of alphabet, both familiar and entirely bizarre, but clearly derived from the patterns visible on the surface of the sea before him and the earth around him. He managed to compile a working voice from the marks and characters he distilled from the matter that surrounded him. But the more he developed his language, the more he hated living in the wild. So that when they discovered him stranded on the tiny island off the coast of Chile, the absurd costumes he had worn on his departure now tattered and hanging off his emaciated body, his terror of finding a voice in the matter around him led him to hide his discovery and revert to a state of deliberate imbecility. What was frightening was that this circumstantial experiment revealed that evolution could allow such sensitivity and such inadequacy to co-exist in the same mind.

As they stared at each other, they both seemed vaguely uncomfortable. A bit elsewhere. Not entirely visible, but somehow present. Their drive, though, found voice in the insouciant god-like power to create a world and then forget about it. It was not about understanding or discovering, despite their declarations. Rather it was about creating, where they might approach the idea of the dream and the unreal, not as synonyms but as antonyms. The urge was in creating a possibility only to occupy its presence for a moment, then forget about its existence, or even potential. So that they trained their minds to fix and work on images until they acquired the peculiar quality of dreams, with a vivacity or condition of being alive or both, while always guarding that they remain insubstantial. It was a ridiculous quest, a journey with no significance but for their own distorted minds, a way to fill the hollow in the gap, with never any intention of moving across it. Their task was to put an object into the world that is not going to be an answer to anything. It would be a reality of its own.

This is how they found themselves living in the same place. The light had begun to break, the sun carbonized against the open sky. A faint smile sat on his childlike lips, one that seemed at odds with his old dry eyes. Remember me, says the dust. He whispered as he sauntered to the corner to have a sip of water. Despite his bulk, he seemed to move as a ubiquitous unseen presence, somehow not entirely there.

5 Visual perception begins with the mechanics of optics and the brain centers responsible for receiving sensory information. We are remarkably visual creatures; the visual cortex takes up about 30% of the brain (compared to 8% for touch and 3% for hearing). Every second our eyes can send our visual cortex as many as 2 billion pieces of information. The rest of the body sends the brain only an additional billion – so sight is 1/3 of the brain by volume and can claim about 2/3 of the brain's processing resources.[55] Vision is by far our dominant sense – and it feels immediate and passive. We open our eyes and behold.

Broadly speaking, the visual system is largely interested in what something is and *where* it is. These qualities include object/facial recognition, colour perception, motion, depth, spatial organization, and figure/ground segregation. The eye receives stimulus, and we apprehend a sensation of vision. Neurophysiologists have proven, however, that the sensation of vision is conveyed through information processing rather than image transmission. For instance, according to Neurobiologist Margaret Livingstone, the primate visual system possesses a sort of map of the visual world in the primal cortex which is articulated as a mirrored network that is both spatially and temporally discontinuous. So, motion parallax is a cue used by the visual system to estimate the relative distances of objects in a given visual field. This occurs on the most visceral level, where, for example, walking forward produces a pattern of optic flow in the retinal image that allows you to understand the direction in which you are heading.[56]

The eye itself is only capable of 2-dimensional images, and it is never processing much more than the center of vision. Saccadic vision between the eye and the external world, at about 3 or 4 times per second, plays a vital role in how we explore and extract information from the visual world. Recent advances in eye-tracking technology have led to greater understanding and appreciation of the important role saccades play in human vision.[57] The patterns of movement of our eyes have been shown to be purposeful and under cognitive control (though largely unconscious), depending both on what we are looking at and why.[58]

These movements also translate into a sort of kinesthetic sensation that creates an experience of forms in space.[59] The eye's movements, in effect, are 2-dimensional scans and maps of 3-dimensional forms, creating the illusion of space. Studies point to the experience of visual cohesion and constancy as a property of the brain, as much of the physical world.[60] A sense of space arises from a mental fusion of optical impressions and kinesthetic sensations.

6 Cognitive science places memory neurophysiologically as a condition of the present – so what we remember is not really about the past, but snapshots of the current condition of the brain.[61] The past few decades of neurophysiological and clinical studies, coupled with computer generated and systems-led simulations of human vision, have provided a considerably more dynamic view of the nature of perception and how it relates to memory. The brain is a perceptual learning machine that builds on itself, wiring and re-wiring its neural architecture based on long term memories and

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[55] John V. Forrester, Andrew D. Dick, Paul G McMenamin, Fiona Roberts, Eric Pearlman, *The Eye: Basic Sciences in Practice*, Saunders Ltd. 2015.

[56] Bevil Conway and Margaret Livingstone, "Perspectives on Science and Art," *Curr Opin Neurobiol*, 2007 Aug; 17(4): 476.

[57] C.f. Derrida's discussion of the "Blink of an Eye" in relation to Husserl's time-consciousness, Jacques Derrida, *Speech and Phenomena: And Other Essays on*

[58] C.f. Thomas, L. E., & Lleras, A. (2007). "Moving eyes and moving thought: On the spatial compatibility between eye movements and cognition," *Psychonomic*

[59] "All modes of perception combine visual impressions with kinesthetic sensations" (Adolf von Hildebrand, *The Problem of Form in Painting and Sculpture*, 1932,

[60] Arnold Modell, "The Body in Psychoanalysis and the Origin of Fantasy," *The Embodied Subject: Minding the Body in Psychoanalysis*, ed. John P. Muller and Jane

[61] J. J. Gibson writes: "The essence of memory as traditionally conceived is that it applies to the past, in contradistinction to sense perception, which applies to the Frances Yates in the *Art of Memory*, who situates memory spatially, where memory functions by "forming for oneself figures of things one wants to retain in the Livingstone on the relationship between facial recognition and memory consolidation (Doris Tsao and Margaret Livingstone "Mechanisms of face perception,"

Yet, at the same time, one sensed a sort of beast-hood of puppetry in his body, strangely existing at once with the astral lightness of the rest of him. Almost as if his body was not as it should be. Or he just didn't know how to occupy his own space. Perhaps it was how he related to his own form. Instead of his eyes existing to receive light and shadow - somehow seeing where things might mingle but maybe not merge - they were instead a compilation of measurements, the sum of the downward curve of eyeball and lid, the number of eyelashes on the lid, and the distance between each lash, the arced curve of the pupil in relation to its socket.[5] Despite this, though, they always seemed to carry in them a quality that gleamed of a remoter world. And the rest of his body possessed this same quality; it was wooden and brittle, conscious of itself and the space it was displacing, yet it somehow was able to float across a space as if it was not solid, weightless in some way.

Clearing his throat after a gulp of tepid water, he softly responded. But we're not simply conversing with absence. It's like fishes' concept of time. They almost live in the same instant – untransferrable time. Yet, where their short-term memory fails, their overall sense of time and space is somehow there, occupying a shadowed place, possessing a secret you cannot seem to access. Like an affinity to synchronicity, where if it weren't repressed from above, would be clearly visible to the naked, though trained eye. For us though, memory is what makes our lives. Even if it changes past experience where it's painfully retrieved yet remains inevitably out of reach, memory can at least function as dream through which experience becomes abstracted and muffled. You have to begin to lose your memory, if only in bits and pieces, to realize that life without memory is no life at all. Our memory is our coherence, our reason, our feeling, even our action. It's our only mooring in time. Without it, we are nothing.[6]

He turned his eyes which silenced her breathing for a moment.

It's like the essential dilemma of reliability through redundancy. In the same way there is an economy of vegetation. If language is like the culture it articulates, then

Husserl's Theory of Signs, Evanston: Northwestern University Press, 1973.
Bulletin & Review, 14(4), 663-668.
228).
G. Tillman, New York: Rowan & Littlefield, 2007.
present. But this distinction is wholly introspective." (J. J. Gibson, *The Ecological Approach to Visual Perception*, Boston: Houghton Mifflin 1979). See also memory [and arranging] these figures in certain places." (Frances Yates, *Art of Memory*, Routledge, New York: 1966, 60). See also Neurobiologist Margaret *Annual Review of Neuroscience*. 2008; 31: 411–437).

experiences, which impact gene expression and synaptic connections.[62] Our experiences actively change how nerve cells communicate with one another, impacting in turn how we interpret perceptual stimulus, and so on.

Current understandings of the visual system indicate that we rely on memory to reconstruct the cohesive optical reality which we experience day-to-day. In fact, the work of both Semir Zeki (Professor of Neurobiology at UCL) and Donald Hoffman (Professor of the Cognitive Sciences at University of California, Irvine) has contributed to an understanding of the relationship between memory and vision, providing clinical evidence that like the early emotional system, there is a critical period for vision acquisition that is related to remembering. If visual training in the form of exposure to visual stimuli does not occur early in infancy, apprehending sight is very difficult if not impossible, so that restored sight to individuals born blind is not usually possible as they must actively learn to see forms that they quickly forget. Zeki elaborates:

> …even when the genetically determined visual apparatus is intact at birth, the organism must be exposed to visual stimulus after birth, after which visual education becomes much less important. There is, in other words, a critical period for vision… [63]

So, vision is not only an active process between the brain and the external environment, but the brain must balance the selected information it receives with recorded and stored memories to be able to stitch together a cohesive visual world. Yet the things we see and, in turn, remember, have a profound impact on the architecture of the brain. Neuroscientist Eric Kandel's work on memory establishes that memory produces anatomical changes in the brain.[64] According to his experiments and research, our brains develop neural topology for faces, places, bodies, text/reading etc. all based on our experiences and memories. Recent evidence in his research has indicated that our processing systems are also perceptual systems in that activity in each can result in a percept without reference to the other systems; each processing-perceptual system terminates its perceptual task and reaches its perceptual end-point at a slightly different time from the others, thereby leading to a perceptual synchrony in vision; colour is seen before form, which is seen before motion. Thus visual perception is also understood to be modular.[65]

7 This is the *hard problem* in philosophy of mind – we feel disembodied in an embodied way – and it is a dissonance that is difficult to resolve, and one that is at the crux of the nature of consciousness. While neurophysiology is clear that the eyes are the organs of sight, as organs they are simply transmitting information in the form of electrical impulses that process information. There is no one in the head doing the seeing, as it were. As biologist, philosopher and neuroscientist Francesco Varela states:

> My mind is still a different affair which is not exhausted by that description; there is a residue left, a remnant that we may call the experience of the mind, the sense of self … As long as there is such a remnant in the mind's description of minds, this sense of self that evades any descriptive net, the Mind-Body relation is still a problem.[66]

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[62] See Eric Kandel's studies of the hypocampus as critical for complex memory storage. By using the neural circuit of marine cell Aplysia, he discovered that while anatomical change. Because there are alterations in gene expression there is change in how nerve cells communicate with one another. Kandel's work established Memory Storage: A Dialog Between Genes and Synapses," *BioScience Reports*, October 2001, Volume 21, Issue 5, 565-611.

[63] Semir Zeki, *Inner Vision: An exploration of Art and the Brain*, Oxford: Oxford University Press, 1999, 6. Hoffman's position places vision and perception similar to C.f. Donald Hoffman, *Visual Intelligence: How We Create What We See*, New York: Norton, 2000.

[64] Kandel (October 2009). "The biology of memory: a forty-year perspective". *J. Neurosci.* 29 (41): 12748–56.

[65] Kandel, "The Brain and Behaviour," *Principles of Neural Science*, Fifth Edition, The McGraw-Hill Companies: 2013.

[66] Varela, (1996). "Neurophenomenology: A methodological remedy for the hard problem," *Journal of Consciousness Studies*, 3(4), 330-349, 66.

the language of matter should be the richest, the plushest, the most elegant construction of unified forms. Like a robust swell of wind, thick and warm, brutal and soft, all at the same time. But the aspects of things that are most important for us are hidden because of their simplicity and familiarity. You rarely notice something when it's always before your eyes. Think about the physiological and psychological translation of this epistemology; our sixth sense our secret sense: that continuous but unconscious sensory flow from the movable parts of our body – muscles, tendons, joints – by which their position, tone and motion are continually monitored and adjusted, but in a way that is hidden from us because it is automatic and unconscious. The real foundations of this enquiry don't strike us at all. We simply feel our bodies as proper to us, as our 'property', as our own, despite this sensation deriving from a deliberate though invisible source. It's like considering your character as your destiny. The coagulated flow of life emanates from a structured system, whether or not you are aware of it.[7]

An awkward silence took hold for a moment, grinding to a halt any momentum that had built up between them. She was clutching the drenched handkerchief she had used to wipe up some water that had spilled from a cracked bottle she was carrying. As the first drop of water silently slipped from her fingertip and sank to the ground, she softly brushed his shoulder. He turned in response with irreverent force and it seemed clear for a moment that worlds don't materialize unless they are pulled. With their crisp long shadows trailing behind them, she slowly leaned in.

Do you remember Morris?

The last time Isaac saw Morris he was skateboarding down the sidewalk in twilight, his yellow T-shirt fluorescent under the trees. It was early September and nothing anywhere had begun to die. Maple leaves behaved as though their green was immortal. Ash trees were still climbing toward a cloudless sky. The

short term memory is functional in strengthening synaptic connections, long term memory creates more powerful synaptical connections producing how learning occurs in simple systems which turns out to be a very general mechanism. C.f. Eric Kandel,"NOBEL LECTURE: The Molecular Biology of

Chomsky's position on language in that there is a critical period for the acquisition of "visual grammar" after which, like language, it is difficult to acquire.

The fact is that we already participate in the world before we start to reflect on it – we are both brain and mind. Varela's concept of *neurophenomenology* explores this position, which combines a systems-based scientific approach for understanding the relationships between internal and external processes, locating a symbiotic relationship between the body, both personally experienced and as a biological system, and the external physical world where it exists and with which it interacts.[67] American philoshopher Mark Johnson provides an excellent background of these ideas in his book *The Meaning of the Body*, building on William James and George Dewey, and further developed with concepts of embodied cognition developed with cognitive linguist and philosopher George Lakoff. His central argument is that "what we call 'mind' and what we call 'body' are not two things, but rather aspects of one organic process, so that all our meaning, thought, and language emerge from the aesthetic dimensions of this embodied activity."[68] The target is a disembodied view of meaning, which grows from traditional metaphysical dualism, one that a more dynamic understanding of the nature of visual perception offers to overcome.

Our experience of disembodiment, then, is the fundamental contradiction of consciousness, of experiencing the external internally, whilst not being able to experience the internal externally. We cannot see what is doing the seeing, and we cannot fully attend to the full process of seeing without getting lost in the process itself. As Jacques Derrida states in *Memoirs of the Blind:*

> A draftsman cannot but be attentive to the finger and the eye, especially to anything that touches upon the eye, to anything that lays a finger on it in order to let it finally see or let it be seen.[69]

From this perspective, we are complicit in the creation of the illusion of vision, but it is experienced passively and seamlessly. Didi-Huberman explores this idea through his claim that we understand seeing not as a mono-directional act, but as an instance of responsivity. We engage in a responsive mode of seeing that is situated "before" rational knowing, understanding, and thinking.[70] We see before we even know or understand what we see; before a viewer can analyze and objectify the seen, they are struck by it in an unpredictable and uncontrollable way, one that is led by the body and the physical materiality of what is seen.[71]

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[67] C.f. Varela et al, *The Embodied Mind: Cognitive Science and Human Experience*, 1993.

[68] Johnson, *The Meaning of the Body: Aesthetics of Human Understanding*, 2007, 1.

[69] Derrida, *Memoirs of the Blind*, trans. Mascale-Anne Brault; Michael Naas, Chicago: University of Chicago Press, 1993, 6.

[70] Didi-Huberman, *Ce Que Nous Voyons, Ce Qui Nous Regarde*, Minuit: 1992.

[71] Didi-Huberman, *Confronting Images*, 2005.

sun began turning aggressively alive in the process of setting. Down the sidewalk between hedges and towering trees Morris floated, a spot of gold moving down a shadowy tunnel toward the mouth of a living sun.

Morris grew up on the coast, but Isaac met him when he was trying to put as much distance between himself and his family, who were part of the Pentecostal Holiness Church. Specifically, they were Pentecostal Holiness snake handlers. That meant they believed in snake healing and poison drinking as literal interpretations of Mark 16:18 – *They shall take up serpents; and if they drink any deadly thing, it shall not hurt them.* Only a few places in the world exist where religious snake handling is still legal, and Morris happened to be born into a family that embraced this, championed it in the form of 25 cages of writhing reptiles kept in the back yard. Morris was charged with cleaning and caring for the reptiles in their cages while his mom would torment his father by relentlessly knitting him mittens in all the colors he detests, which he would then silently pass out to the congregation as some sort of sacrament. And with a combination of poker-faced ironies and hyperbolic ecstasies of denunciation, vituperation, condemnation so keen and well-aimed as to be totally persuasive and taken in total seriousness, the congregation would perform their snake-handling feats wearing an array of coloured mittens on their sweaty hands.

What do you think, Saskia continued. Did he look at that world to find it a bit of smoke and mirrors, a mass hallucination born of a desperate people to whom he belonged? Despair like that bumping up against philistines whenever it leaves the house. The kind that will inevitably lead to the abyss, down into the pit. Or did he find himself a bit closer to god, confused by reptilian epiphanies that left him beyond a sense of closure, indelibly marking his character, his perceptions of the world. Those 25 cages of snakes he had to clean, handle and lock-up every night till he was fifteen is an experience that doesn't wash off in the shower.

In fact, it was unclear if Morris was peculiar because of the snake handling, or in spite of it. It was evident early on to his parents that Morris constructs his world in a different way, perhaps radially so – that he employs predominantly visual thought

8 The idea of visual thought patterns points to the importance of metaphor in embodied cognition's model of how we navigate the world. Embodied cognition occupies the position that every-day language cannot avoid metaphor, that it is ubiquitous and indispensible to how we express ourselves because it is pervasive in how we think.[72] It is a reaction to classical approaches to metaphor, which, as George Lakoff articulates, are "seen as a matter of language, not thought."[73]

Embodied cognition begins with the premise that all meaning and knowledge is an embodied experience that stems from the individual's perceptual and motor systems, which in turn govern thought and language. That is to say, experience of the environment outside of the body is conceptualized by using the same schemas, dimensions, or relations used in categorizing or understanding elements of the lived body, bodily states, and the body's relationship to its environment. Conceptualizing the world in this manner, in turn determines how experiences are reflected in language. The prevalence of metaphor in our language can be understood as caused by the fundamentally metaphoric process of our thought, derived from the limitless and subtle ways in which our body interacts with our environment.[74] As Lakoff states, " … the locus of metaphor is thought, not language, that metaphor is a major and indispensable part of our ordinary, conventional way of conceptualizing the world, and that our everyday behavior reflects our metaphorical understanding of experience."[75]

Consider the phrase "The cat runs" – which is literal language describing the motion of a feline. "The river runs," "My nose runs," or "The road runs through the woods," – however are metaphoric uses of similar language, now indicating embodied thinking, and derived from imaginative creativity. In both cases, the concept of run is understood through the motor-domain of movement through space.[76] Embodied cognition together with Conceptual Blending Theory describes the means by which concepts are integrated, guided by "uniform structural and dynamic principles" both unconsciously in everyday thought and in more complex abstract thought.[77] Conceptual integration networks are composed of conceptual spaces and conceptual mappings used in blending the component spaces for situations that are more complex than a single metaphor. From the perspective of embodied cognition and blending theory, the formulation of metaphor as a schema is used in the Kantian sense, where emergent structures of how we express ourselves are responsible for generating meaning. This is an approach where "it is not images of objects but schemata that ground our pure sensible concepts."[78] Images are the product of the empirical faculty of productive imagination, whereas schemata are products of imagination. For embodied cognition, imagination is the central agent catalyzing a synthesis of images and concepts that is a condition of metaphor.

Embodied cognition argues that metaphors operate by using a construction of networks and mappings from one conceptual space to another, creating a basic and consistent means to express common concepts. These are elemental, entrenched metaphors in ordinary language employed to express every-day concepts. They are not ornaments, but vital, unavoidable and ubiquitous, transforming language to reveal new ways of seeing things.[79] They have genuine cognitive

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[72] As I. A. Richard's asserted, "metaphor is the omnipresent principle of language," and "thinking is radically metaphoric." I. A. Richards, *The Philosophy of*

[73] George Lakoff, The Contemporary Theory of Metaphor," *Metaphor and Thought*, Andrew Ortony (ed.), Cambridge University Press, 202-251 (1993) 202.

[74] Literal meaning occurs when what is uttered is also what is meant (i.e. sentence meaning and utterance meaning coincide). In the case of metaphoric meaning, metaphors as speech acts where there is a shift from one concept to another. He creates a clear distinction between literal meaning and metaphoric meaning. Acts: An Essay in Philosophy of Language," *Philosophical Quarterly*, 20 (79):172-179 1969, 17. A speaker that communicates something by a metaphor can just as

[75] Lakoff, "The Contemporary Theory of Metaphor," 202.

[76] A further attenuated abstracted thought based on similar but more complex processes explained by conceptual blending is "The river is a strong brown god"

[77] C.f. Fauconnier and Turner, *The Way We Think*, 2003.

[78] Emmanuel Kant, *Critique of Pure Reason*, A/141.

[79] Some critics claim that the metaphors which cognitive linguists argue are ubiquitous, are actually root metaphors, which are metaphors/figures of speech so a way of thought. Take for instance, "Nature as machine," or "Nature as creative." They are also generative, in the sense that they give birth to other metaphors. hidden aspects of a given situation, etc. There are of course non-metaphorical statements and concepts. Examples typically used here are "The cat is on the are indispensible and indeed a function of the very abstract concepts themselves. C.f. Stephen C. Pepper, *World Hypotheses: A Study in Evidence*. Berkeley:

patterns, and that he thinks *differently* about physical objects.[8] You couldn't but be struck by the graphic quality, the fullness of his descriptions. The congregation was drawn to this fullness. All the characters or creatures or objects Morris creates and talks about are placed. As his mother said, spatial reference is essential to Morris. When he would speak to the congregation about biblical stories, most of which he embellished to such a point that they were more or less invented, he would set up the whole scene. You can see where everyone or everything is; it is all visualized with such detail that you felt as if you were there, immediately. This placing of objects and people in specific locations, this use of elaborate, spatial reference had been striking in Morris, his parents said, since the age of four and a half. Already at that age he had gone beyond them, shown a sort of *staging* power, an *architectural* power that would take a hold of whomever was before him. So he became the pied piper to a congregation of snakes and their handlers in coloured, mitten-ed hands.

His visual intelligence – his ability to solve visual puzzles and problems – was good, in radical contrast to his profound difficulties with verbally based problems. He could draw and liked drawing: he made good diagrams of spaces, he enjoyed drawing people; he *got* cartoons, he *got* visual concepts. It was this above all that gave the feeling of his intelligence, but one largely confined to the visual. He picked-up tic-tac-toe and was soon very good at it, and was probably pretty good at checkers and chess, too. But while Morris saw, distinguished, categorized, used, while he had no problems with *perceptual* categorization or generalization, he could not, it seemed, go much beyond this – that is, hold abstract ideas in mind, reflect, play, plan. He seemed completely literal – unable to judge images or hypotheses or possibilities, unable to enter an imaginative or figurative realm. And, yet, he gave the sense he was of normal intelligence, despite these manifest limitations of intellectual function.

Rhetoric, 1936; *Interpretation in Teaching*, 1938.

what is said is not what is literally meant, (i.e. the utterance meaning is different from the sentence meaning). Philosopher John Searle characterizes Metaphors become a function of language that can just as easily be expressed literally. C.f. Searle's Principle of Expressibility, John Searle, "Speech easily express the same in literal language, "whatever can be meant can be said."

from T. S. Eliot's *Dry Salvages*. C.f. P F Strawson and Gareth Evans, "Problems of Philosophy: On Truth," Oxford University Lectures, 1973.

entrenched in language that they are no longer deemed metaphors. They are underlying conceptual understandings that have become fundamental to For example, viewing an obstacle or problem as a "mountain" leads to "peaks," "valleys," "caves," and all sorts of terrain to refer to targets, risks, mat," or "The balloon went up." Embodied cognition proposes, however, that once in the domain of abstraction, emotions, and concepts, metaphors University of California Press, 1942. See also Paul Ricoeur, *The Rule of Metaphor: The Creation of Meaning in Language* New York: Routledge, 2003.

import without literal equivalents. Their value and power lie in their own creative mechanism, the workings of which speaks to the nature of imagination and the anatomy of meaning.[80] As clinical professor of social psychiatry Arnold Modell contends in his book *Imagination and the Meaningful Brain:*

> Metaphor not only *transfers* meaning between different domains, but also by means of novel re-combinations metaphor can *transform* meaning and generate new perceptions. Imagination could not exist without this re-combinatory metaphoric process.[81]

Cognitive linguists organize these concepts as operating using structures called "images schemas" and models called "skeletal patterns," both of which develop from what philosopher Shaun Gallagher calls body schema.[82] These are derived from recurrent patterns of experience and development from infancy.[83] Gallagher develops the concept of *body schema* as derived from the *organic body*, the *spatial body*, and the *affective body.* The organic body is the material anatomic body rooted in neurobiology. It is the nature of our upright posture, or physiological autonomic functions, etc. The spatial body is the physical location of the body in space and its orientation in relation to the external world. The affective body is emotional tonality to our perceptual experiences without which we remain ungrounded and alienated.[84] These three aspects of our bodies constitute embodied experience which is derived from body schema.[85]

Gallagher defines body schema as "a system of sensory-motor capacities that function without awareness or the necessity of perceptual monitoring."[86] We are often not aware of these functions at all, as they operate "below the level of self-referential intentionality," as activity without our conscious involvement. Indeed, this dimension is what reinforces our belief in duality and disembodied thought. As Mark Johnson further articulates:

> The principal result of these forms of bodily disappearance is our sense that our thoughts, and even our feelings, go on somehow independent of our bodily processes. Our body-based experience reinforces our belief in disembodied thought.[87]

This non-conscious dimension of the body is the foundation upon which image schemas and skeletal patterns are built and is what reinforces our belief in duality. The body operates as a recessive system when it engages in perception, resulting in a "tendency toward self-concealment," a form of bodily disappearance.[88] As Merleau-Ponty argues, "I am conscious of my body via the world…I am conscious of the world through the medium of my body."[89] So, the body is not simply a container or instrument of agency, but functions using "stable organs and pre-established circuits" below the threshold of conscious intention.[90]

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[80] Blending Theory contends that there is a creativity involved in metaphor which employs an active process of mapping or transfer of meanings between

[81] Arnold Modell, Imagination *and the Meaningful Brain*, Boston: MIT Press, 2006, 4.

[82] Shaun Gallagher, *How the Body Shapes the Mind*, Oxford: Oxford University Press, 2005, 24. Body schema is distinct from body image, which involves "a system experience. Some philosophers (e.g., Wittgenstein, Anscombe) have argued that we have an intuitive knowing about the position of our body that is not gained

[83] For example, children have fundamental pre-conceptual experiences that include forward and backward/upward and downward body movement, front and back/ experiences processed through metaphor. For example, to grasp an idea, to point out a flaw, life is a journey, up is good, down is bad ("I'm feeling down," "I have

[84] C.f. Antonio Damasio, *Self Comes to Mind: Constructing the Conscious Brain*, New York: Vintage, 2012.

[85] Gallagher, *How the Body Shapes the Mind*, 24.

[86] Shaun Gallagher and Jonathan Cole, "Body schema and Body Image in a Deafferented Subject," *Journal of Mind & Behaviour*, Jan 1995, 16 (4): 369-390.

[87] Johnson, *The Meaning of the Body*, 6; Merleau-Ponty also explores how the body plays a constitutive role in experience precisely by grounding and yet remaining Merleau-Ponty, *Phenomenology of Perception*, trans: Colin Smith, London: Routledge & Kegan Paul, 1965, 90).

[88] Johnson, *The Meaning of the Body*, 6. See also Drew Leder, D., *The Absent Body*, Chicago: University of Chicago Press, 1990.

[89] Merleau-Ponty, *Phenomenology of Perception*, 82.

[90] Ibid, 87.

It was not that he lacked a mind, but that he was not *using his mind fully.* Yet, he undoubtedly possessed the conviction of personal experience.

Life confined the hair arranged in disarray, Saskia muttered, as she brushed past the clatter of the memory of Morris.

Isaac was sure she believed ideas not because they are sometimes true but because she needs to believe. Because she has to, to keep her feelings in order. Because she must have an illusion to stop up the gap between the walls of her life, through which her feelings would otherwise fly off in every direction.

Well, responded Isaac, he was probably at least seeking the conditions of an authentic enthusiasm, instead of giving himself up to transient delusory states. It was his sister, Nora, though, that really got it.

Nora was deafened at an early age from a snake handling, venom tasting ceremony gone awry, leaving her virtually without speech. Though highly intelligent, she was intellectually disabled until she learned to sign, able then to access more abstract thoughts and concepts through visualizing. Until then, her condition was described by her doctors as *aphasia,*[9] or more specifically, as the inability to proposition. If a unit of speech is a proposition, without a proper interrelation of its parts, a verbal utterance would be a mere succession of names, a word-heap. Loss of speech (or *aphasia*) is therefore the loss of the power to proposition.[10] Not only is it the loss of power to proposition aloud, or to talk, but to do this internally, in a way, to think. She was speechless – had literally lost speech – and not only in the sense that she could speak aloud, but in the fullest sense. We speak not only to tell other people what we think, but to tell ourselves what we think. Speech is a part of thought.

domains (from a source domain to a target domain). C.f. Fauconnier and Turner, *The Way We Think*, 2003.

of perceptions, attitudes, and beliefs pertaining to one's own body." There is significant thought on the bodily inter-subjective dimensions of our lived by ordinary sensory perception.

part and whole understandings of objects, temperature experiences, etc. Embodied cognition argues that abstract concepts arise from these embodied a sinking feeling", "He's a stand-up guy"), and so on. C.f. Lakoff and Johnson, *Philosophy In The Flesh*, 1999.

peripheral in the horizons of our perceptual awareness: "my body is constantly perceived…{yet} remains marginal to all my perceptions" (Maurice

Image-schemas are defined as pervasive structures in human cognition that emerge from our bodily and social interaction with the environment.[91] These form pre-conceptual skeletal patterns which enable us to mentally and linguistically structure perceptions and events. These patterns are recurrences in the functions of our bodily experiences, forming conceptions such as "Motion Along a Path," or "More is up." There are countless patterns generated from the structure of our bodies, including ideas of containment, vision, motion, smell, hunger, etc.

There is theoretical evidence for this line of thinking in studies of how children learn metaphor.[92] For example, a child initially has a literal relationship to seeing, until there is a transition from seeing to knowing, where seeing is used metaphorically to mean understanding ("I see mummy is home" becomes "I see what you mean"). Seeing and knowing is an example of vision schemas ("That's a murky argument," "I have a clear idea" etc.). This also exists on the level of other senses such as smell ("This paper stinks", "That's sounds fishy" etc.), hunger and desire ("I could eat you alive", "My body aches for you" etc.), and so on.[93]

Embodied cognition sits in contrast to more analytic approaches to metaphor which argue for a literal understanding of metaphor. As philosopher Donald Davidson contends, the only meaning a metaphor has is its literal meaning, and does not possess a second level of meaning above the literal meanings of a given utterance. As he states in his 1978 paper on metaphor, "metaphors mean what the words, in their most literal interpretation, mean, and nothing more."[94]

However, despite his general position, Davidson acknowledges that there is in fact a *sense* of metaphoric meaning that is distinct from its literal meaning. Here "metaphor does its work by having a special meaning, a specific cognitive content."[95] He proposes that metaphors actually function like music, in the sense that metaphorical uses of language cause certain effects not related to actual meaning, in which process there is a sort of reflexivity and complicity. As he states, *"Metaphor is the dreamwork of language and, like all dreamwork, its interpretation reflects as much on the interpreter as on the originator. The interpretation of dreams requires collaboration between a dreamer and a waker, even if they be the same person..."*.[96] This is a distinction between sense and meaning, and for Davidson, metaphors matter because of their world-disclosing capacity.[97] Seen in this way, metaphors are not primarily explained in linguistic terms, and point to a *sense* that is not contingent on an expression's literal meaning. Instead, metaphors "make us notice aspects of things we did not notice before, bring surprising analogies and similarities to our attention and ... provide a kind of lens."[98] In this way, metaphors become key to considering how we experience real meaning in the world. And in both embodied and cognitive approaches, metaphor involves the imagination, where *"...the act of interpretation is itself a work of the imagination. So too understanding a metaphor is as much a creative endeavor as*

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[91] Lakoff and Johnson, *Philosophy In The Flesh*, 1999. Lakoff presents an example of the schema *Argument is War*. For Lakoff, "We don't just talk about argument own. We gain or lose ground." (Lakoff and Johnson, *Metaphors We Live By*, 124). These lead to metaphors such as "I demolished his argument," "He shot me are conduit metaphors (Michael Reddy, "The conduit metaphor: A case of frame conflict in our language about language," *Metaphor and Thought*, Cambridge: in containers/words are sent (along a conduit) to then be unpacked. "Let me give you an idea of what I mean," "Try to get that feeling across better," "His convictions pervasive in every aspect of linguistic expression.

[92] Arnold Modell expands on this stating that "The earliest experience of what might be called a proto-metaphor may be found in the infant's perception of cross- the narrative of a nursery rhyme or song is accompanied by mimetic gestures: infants experience the transfer of meaning between different sensory domains as of nominal realism. C.f. Jean Piaget, *The Child's Conception of the World*, Maryland: Littlefield Adams: 1951, and Inhelder, B., & Piaget, J., *An essay on the construction*

[93] Lakoff and Johnson, *Philosophy in the Flesh*, 1999.

[94] Donald Davidson, *"What Metaphors Mean," Critical Inquiry* Vol. 5, No. 1, Special Issue on Metaphor (Autumn, 1978), 31-2.

[95] Ibid, 46.

[96] Ibid, 31.

[97] There is an interesting connection here to J. J. Gibson's idea of direct and indirect awareness, which presents a view where one gains a better or more true analysis. C.f. Gibson, *The Ecological Approach to Visual Perception*, 1979.

[98] Davidson, *"What Metaphors Mean,"* 45.

Even when Nora began to use sign language, she did not know the art of coming to them to form distinct pictures to represent various ideas, transmit them to others, and converse in logical discourse. To overcome her aphasia, she started using pictures. And, as dialogue launches language, her mind began to develop a new power, *inner speech.* This is speech almost without words – not the interior aspect of external speech – but a function in itself. While in external speech thought is embodied in words, in inner speech, words die as they bring forth thought. Inner speech is, to a large extent, thinking in pure meanings.[11]

So, we start with dialogue, with language that is external and social, but then to think, to become ourselves, we have to move to a monologue, to inner speech. Inner speech is essentially solitary, but indispensible, and it is profoundly mysterious, as unknown to science as the other side of the moon. Our real language, our real identity, sits in inner speech, in that ceaseless stream and generation of meaning that constitutes the individual mind. It is through inner speech that the child develops their own concepts and meanings; it is through inner speech that they achieve their own identity. It is through inner speech, that they construct their own world.

In the case of sign language, the distinctiveness of the language, its *character*, is biological as well, for it is rooted in gesture, in iconicity, in a radical visuality, which sets it apart from any spoken tongue.[12] Language arises – biologically – from below, from the irrepressible need of the human individual to think and communicate. But it is also generated, and transmitted – culturally – from above, a living and urgent embodiment of the history, the word-views, the images and passions of a people. A language's *character* is essentially cultural – it expresses and perhaps partly determines the way a whole people think and feel and aspire.

in terms of war. We can actually win or lose arguments. We see the person we are arguing with as an opponent. We attack his position and defend our down," "That point was right on target," etc. Indeed it is difficult to think how one might talk about an argument without using metaphor. More subtle Cambridge University Press, 1979, 284–310). These are about communication, and involve embodied metaphors of containment and action. Ideas/objects didn't come through to us," etc. Paraphrasing any of these metaphors into literal language seems impossible, and would indicate that metaphors are

modal matching between the major sensory portals of sight, hearing, kinesthesia, and touch. We know that infants and young children are delighted when inherently pleasurable." (Modell, *Imagination and the Meaningful Brain*, 71). There is an interesting connection to Jean Piaget's and Lev Vigotsky's concept *of formal operational structures. The growth of logical thinking: From childhood to adolescence*, trans. A. Parsons & S. Milgram, New York: Basic Books,1958.

sense of things, this "world-disclosing" understanding of a given utterance or visual array, through an indirect sense or feeling rather than through direct

making a metaphor…" [99] Indeed, this is not far from fiction, as Robert Musil writes, metaphor "is like the image that fuses several meanings in a dream; it is the gliding logic of the soul, corresponding to the way things relate to each other in the intuitions of art and religion".[100] So if all abstract thinking is indeed metaphoric, then creativity and imagination become key components in considering embodied cognition. Art practice and art experience become instrumental in understanding how we generate meaning and grounding in the world.

9 See Appendix 1d.

10 The relationship between perception and imagination points to a distinction between sensory imagination and propositional imagination.[101] The former is quasi-perceptual, that is, the process of imagining hearing, seeing, or feeling something. Propositional imagination, on the other hand, has to do with cognitive abstractions such as attitudes or beliefs. Mental or cognitive imagination, as well as sensory imagination, are both part of the domain of perception, though they are not only about perception. But as the anatomy of metaphor suggests, the relationship between predication and confirmation requires a confluence of cognitive and embodied capacities that points to a process and experience that is strongly related to the visual and possesses an aesthetic quality. As embodied cognitive theories propose, imagination is productive, generating and regenerating meaning through metaphor's ability to state things in new ways.

11 Philosophically, the question of the nature of inner thought lies in the domain of visual imagery. Visual mental imagery is 'seeing' in the absence of the appropriate immediate sensory input. This follows for all the senses; auditory mental imagery is 'hearing' in the absence of the immediate sensory input, and so on. It is a sort of simulated perception. But imagery is distinct from perception, since it is not there – whereas perception is typically defined as the registering of physically present stimuli. The cognitive or top-down model of perception maintains that all perception depends to some extent on mental imagery, where there is mediation between cognition and perception. Mental imagery plays a crucial role in human cognition and its development because it forms the basis of a non-conceptual type of thought.

12 The early Stoics made the metaphoric connection between knowledge - an idea - and the body - the physical act of clenching the fist (grasping); having a firm grasp of an idea.[102] Legend has it that Zeno used to express himself using hand gestures, specifically to mark a point. He would begin with his arm extended before him and his hand open, "This is what a presentation is like." He would bounce his hand around "playing" with the idea as if it was a ball, until he started to close the hand, slowly clenching his fist as the physical expression of getting his head around a thought. When he had compressed his hand completely into a fist, he had grasped the idea (*katalepsis* [grasp]), which he would then bring toward his chest, as if to internalize what was once external, absorbing the knowledge he now possessed.[103] He would take the idea, thought, into his heart, and that would represent wisdom – mind and body meeting.[104]

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[99] Ibid, 31.

[100] Robert Musil, *Man without Qualities*, London: Picador, 1995, 647.

[101] C.f. Currie, G. & Ravenscroft, I., *Recreative minds: Imagination in philosophy and psychology*, Oxford: Oxford University Press, 2002.

[102] "Knowledge is the leading part of the soul in a certain state, just as the hand in a certain state is a fist." Sextus in Inwood & Gerson, *The Stoics Reader:* language in *What Is Called Thinking?*, where he describes thinking as "handicraft" placing gesture, language, and thought in direct correlation. "…Perhaps thinking, is a peculiar thing. In the common view, the hand is part of our bodily organism. But the hand's essence can never be determined, or explained, by its being an handy in achieving works of handicraft […] Every motion of the hand in every one of its works carries itself through the element of thinking, every hearing of the Harper & Row, 1954, 16).

[103] Cicero, in Inwood & Gerson, *The Stoic's Reader*, 2008, 47.

[104] C.f. Vsevolod Meyerhold's psychophysical acting technique where he connected psychological and physiological processes encouraging actors to focus on (and vice versa). Meyerhold developed a stylized technique where actors could call up emotions in performance by practicing and assuming poses, gestures, montage. C.f. Vsevolod Meyerhold, *On Theatre*, New York: Hill and Wang, 1969.

Snake handlers in this case it would seem. The muddle of their thoughts was now even more palpable as the light grew brighter and the anxiety to make sense was subsumed by the urgency of structuring the hours of the day. Isaac had given up on this entirely. Time for him was marked only by his bodily urges.

Saskia would not be fooled, though, by Isaac's crazed desire to find the confluence of mental and imaginative faculties, his arrogance in believing he could find, or even construct, weightless matter as he would mumble. His veiled pursuit for discovering the nature of matter as one whose constitution changes in relation to its articulated form. His desire would serve, instead, to displace certainty with ambiguity. To challenge the known constant by insisting on the contingencies of the present. She knew that ambiguity stirs anxiety and wanted to avoid coming into close contact with it. It seemed safer and more practical to accept things as they were, to prevent the imagination from believing in the impossible, to force it to operate only among possibilities. But as she fought to remain loyal to this desire, she remembered Isaac's stories about his sister. Cruel happiness was how he had described his sister to her. They had grown up inseparable, with a strong filial bond and intense love for one another. They had so much fun lost in each other as if the rest of the world didn't exist. But as adolescence turned into the slow hum of growing older, things had changed. More than the inevitable course of events, more than the stifling results of the tyranny of circumstance. Isaac had seen in his sister a transformation that rendered her almost unrecognizable. Whereas she continued to possess a physical beauty and purity, one that was in fact growing, she had remained removed from who she was, allowing her entire self to be consumed in her relationship with her rather unexceptional husband; a man who catered to her every whim, supported her in what she he thought to be her desires and dreams, but whose presence prevented her from confronting herself. A self-constructed fantasy, without the awareness of its consequences to those around her, nor even to herself; a fantasy she was unaware she had chosen. She had assumed her own fantasy, without even being conscious of

Selected Writings and Testimonials, Indianapolis: Hackett Publishing. 2008, 27; Martin Heidegger also touches on the relationship of the body and gesture to too, is just something like building a cabinet. At any rate, it's a craft, a "handicraft." "Craft" literally means the strength and skill in our hands. The hand organ which can grasp…The hand is infinitely different from all grasping organs… Only a being who can speak, that is, think, can have hands and can be hand bears itself in that element. All the work of the hand is rooted in thinking. (Martin Heidegger, *What Is Called Thinking?* trans. Glenn Gray, New York:

learning gestures and movements as a way of expressing emotion physically. As for Stanislavski, the emotional was inextricably linked to the physical and movements. The body led to the feeling in this embodied approach to acting, an approach that had a big influence on Eisenstein and the inception of

In *Lectures on Aesthetics* (first published in 1967), Ludwig Wittgenstein contends that communication begins not "from certain words, but from certain occasions or activities." Gestures precede words, as "The word is taught as a substitute for a facial expression or a gesture." Aesthetic appreciation, then, becomes derived from the linguistic translation of expressive bodily communication.

> If I were a good draughtsman, I could convey an innumerable number of expressions by four strokes -- Such words as 'pompous' and 'stately' could be expressed by faces. Doing this, our descriptions would be much more flexible and various than they are as expressed by adjectives . . . I could instead use gestures or dancing. In fact, if we want to be exact, we do use a gesture or a facial expression.[105]

The body then provides the anchor to meaning. For Wittgenstein, the relation between language and thought was one of "picturing" (and sometimes "mirroring"). As Jerry Gill points out, "Also as the view is espoused, the relation between it and the speaker (Wittgenstein), together with the hearer, is a visual one. We are asked to see the relation between language and reality . . .".[106]

13 The root Aristotelian concept of imagination [*φανταστία*] is defined as "sensation without matter." He describes the imagination as "the process by which we say that an image [*phantasma*] is presented to us."[107] For Aristotle, the imagination guides and motivates, but it is separate from both perception and the mind. He does however recognize it to be central in cognition, by way of "that in virtue of which an image occurs in us."[108] Indeed, for Aristotle, "The soul never thinks without a mental image."[109]

There is a clear relationship of imagination to the philosophical idea of intentionality in that imagination has to do with the mental capacity for creating, experiencing, and/or manipulating mental imagery. Imagery as arising from the interpretative aspect of perception connects contemporary conceptions of imagination to intentionality, or the nature of consciousness. This has to do with the relationship between our minds and the world and is fundamentally about the nature of perception, specifically visual perception. That is, what is the relationship of thought to image? Traditionally, philosophy has categorized *Concepts or Ideas* as mental representations that could or could not be conceived as mental images or pictorial in some capacity. In investigating the nature of ideas, the question remains if these ideas are conceived as images (pictorial), and indeed what imagery might be taken to be.[110] The philosophical importance of mental imagery has to with understanding the nature of experiential reality, and in turn with the relationship of language and word to image.[111]

For Sartre, "No matter how long I may look at an image, I shall never find anything in it but what I put there. It is in this

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[105] Wittgenstein, *Lectures and Conversations on Aesthetics*, *Psychology and Religious Belief*, Berkeley: University of California Press, 2007, 518.
[106] Jerry H. Gill, "Wittgenstein and Metaphor," *Philosophy and Phenomenological Research*, Vol. 40, No. 2 (Dec., 1979), 272-284.
[107] Aristotle, *De Anima*, 428a 1-4.
[108] Aristotle, *De Anima iii 3*, 428aa 1–2.
[109] Aristotle, *De Anima*, 428a 1-4, 15-20.
[110] This is traditionally known as *the mental imagery debate*. C.f. Michael Tye, *The Imagery Debate*, Cambridge: MIT Press, 2000.
[111] This perspective aligns perception with thinking. As Rudolf Arnheim states, "Was it seeing or was it thinking that solved the problem? Obviously the distinction problems can be solved by perceptual operations, but that productive thinking must solve any kind of problem perceptually because there exists no other area in

it, callously seeking to sustain a happiness that existed only as far as she believed it would, ignoring the consequences her actions had in maintaining it, consequences that Isaac had to endure. She had become nothing more than the wife of an average guy who inherited a small fortune, living in an insulated environment ignorant of her own hypocrisy. Isaac had been unable to bear the change, and found distance to be the only solution. And now, as he searched for ways to depict change, and to suspend it in weightlessness – to discover the visual equivalents for moments of becoming – he would ask himself in moments of doubt, how can anything astonish us?

Thinking about this, Saskia felt herself pulled between the conscious embrace of fantasy and imagined possibilities, and the more comfortable embrace of a fantasy not recognized as such.[13] As a child, she used to think life was an open-ended adventure. She used to give things away freely; it amused her when the unexpected happened, she was constantly aware of the multiple possibilities that existed, and the random coincidences that lead her to embrace one reality as opposed to another. As she grew older though, she started to see the comfort in thinking that the things she owned were really inalienably hers, that the choices she made were hers alone, ones that were sound and reasonable, that the dreams she possessed were hers, that reality is in fact constant and tangible, that it could support her like a child climbing a jungle gym. Isaac's slow constant presence stood in the way.

His obsession, though, thrilled her as much as it irritated her. She would feel an excited flutter as well as a dull nausea when she would sense in Isaac a mystic's sense of timelessness, a focus on discontinuity, dynamic suspension within locked incommensurateness. His relation to day and night was like the chaotic unfolding of time in dreams, the annihilated time of deep sleep, the infinite, unchanging time of childhood. And she would experience the slow time of panic when he discussed with her the knowingness of the inanimate, the deep symmetry which conspired. How matter, energy, motion, space and time were not separable categories but aspects of one another, and that perspective was a deliberate rationalization of

is absurd. In order to see we had to think; and we would have had nothing to think about if we were not looking. […] I assert not only that perceptual which true thinking can take place." (Rudolf Arnheim, *New Essays on the Psychology of Art*, Berkeley: University of California Press, 1986, 492).

fact that we find the distinction between an image and a perception."[112] Sartre's position that the material object serves to draw the attention of the viewer to the imaginary realm it represents belies the nature of surface. He points out the tension between viewing surface and content at once (as does Gombrich) and that indeed doing so would not allow the viewer to sufficiently "attend" to the work.[113] The implication is that the materiality of the work vies for supremacy with the content: "What is real, we must never tire of affirming, are the results of the brushstrokes, the impasting of canvas, its grain, the varnish spread over the colours. But, precisely, all this is not the object of aesthetic appreciation."[114] Hubert Damisch builds on this, turning to surface and materiality as the territory of substance, and in this way placing the act of painting as a philosophical practice with the nature of perception at its heart.

14 This places meaning within a flow of experience where reflexivity emerges and there is a kind of double apprehension of the body as the locus of particular sensations, and, simultaneously, as the horizon of perceptual experience. Our experience of meaning, then, can be understood from the perspective of a *self-organizing dynamic system*.

This self-organizational directive is reflected in neurobiological processes of "plasticity"[115] as well as in studies of mirror neurons which exhibit neural activity in a mirror system between two people.[116] With this physical grounding functioning as a conduit for abstract conceptual thought, there is conformity between object and subject. Motor resonance seems to suggest a neurobiological origin for this bridge as it identifies a physical mechanism for the active engagement in the activities of others in the form of a sort of recall – so that when we see someone performing an action, we are in some visceral way engaged with that same action. This follows whether we witness someone grasping an object, pouring a glass of water, Charlie Chaplin's acrobatics, or the ambiguous smile on the Mona Lisa's face.[117]

This is a representation of the world that is not independent of our cognitive and perceptual capacities; it is a perspective that presents our active complicity in material reality, challenging the existence of a cognitive system that is independent of the world. This is especially significant as mechanisms of human meaning extend far beyond the capacity for language. As philosopher Nelson Goodman argued, "… effective representation and description require invention. They are creative. They inform each other and they form, relate, and distinguish objects. That nature imitates art is too timid a dictum. Nature is a product of art and discourse."[118]

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[112] Jean-Paul Sartre, *The Imaginary*, trans. Jonathan Webber, London and New York: Routledge Classics, 2010 [1940], 189.

[113] C.f. E.H. Gombrich, *The Image and the Eye: Further Studies in the Psychology of Pictorial Representation*, London: Phaidon, 1982; J. Derrida, *The Truth in*

[114] Jean-Paul Sartre, *The Imaginary*, 189.

[115] C.f. Catherine Malabou, *Plasticity at the Dusk of Writing: Dialectic, Destruction, Deconstruction*, trans. Carolyn Shread. New York: Columbia University Press,

[116] G. Rizzolatti, L. Fadiga, V. Gallese, L.Fogassi, "Premotor cortex and the recognition of motor actions," *Brain Res. Cogn. Brain Res.*, 3 (1996), 131-141; Vittorio (2003), 358 (1431), 517-528.

[117] This conception suggests a possible biological source of empathy, one that offers a complimentary discourse to the psychological theories of affect developed provide a compelling foundation from which embodied cognition could offer insight into visual practice. C.f. Silvan Tomkins, *Affect Imagery Consciousness*, New

[118] Nelson Goodman, *Languages of Art: An Approach to a Theory of Symbols*, 33, Indianapolis: Hackett Publishing, 1976.

space.[14] How matter itself might consist of tiny bits that function like patterned movement. That surface reveals more than its own materiality, and that you can discover unexpected intrusions of beauty with gentle gestures toward the activation of surface. That experience gains momentum in a condensation of sensation while at the same time can be paralyzed by the philosophy of action, that it robs action of its future. And how all of this might be part of a tapestry too close for her to see, but only to feel in some removed sense; sensing the wool against her skin, the impression of colour and form, but unable to see the entire image, nor able to recognize it as a tapestry at all. There was a creepiness to all this, like the sensation of being alone for the first time in your grandmother's room. What terrified her most though was the possibility that the intense energy Isaac poured into making amazing things was getting creepier and creepier, that it could in the end turn in on itself; that creation and perfection can exist to a degree where it becomes something else entirely. She would feel lost and at the same time the urge to convince herself that she was working towards an understanding that would allow her to navigate matter with grace and confidence, to find the best of all possible worlds. But she was pointedly conscious of the danger in this pursuit, the risks inherent in experiments against reality, the confusion rendered by the poetry of suggestion.

What interested her most, and what scared her deepest, was the formlessness she sensed from Isaac. The ancients described decay in the grave as the dental spoor of a feeding demon. So, hunger was flesh defining – somehow both appropriation and self-annihilation. Isaac possessed this formlessness, like the *asomatoi,* and did not fear the state of becoming, existing instead as divided attention, in a state of in-between. He did not feel the urge as she did to draw distinctions. He embraced the tragic complexity of the banal as if it were text without substance, locating in it somehow the physical place of memory. But she felt sometimes that he used aimless motion as a technique of reversal, where he could manage to bring the outside in, and thus usurp the sovereignty of inwardness. By flooding himself with externals, by drowning himself out of

Painting, Chicago: Univeristy of Chicago Press, 1987.

2010.

Gallese, "The manifold nature of interpersonal relations: The quest for a common mechanism," *Philosophical Transactions of the Royal Society of London*,

by psychologist Silvan Tomkins. The relationship between affect and empathy, in conjunction with their neurobiological grounding in mirror neurons, York: Springer Publishing, 1991.

himself, he somehow managed to exert some small degree of control over his warped approach to reality. Isaac had managed to assume an imbecility in attempting to hold things steadily together, in pretending the trivial is critical. But in doing this, across his lips would dance the pathetic mystery of a smile which she wanted to believe is loving and good, but which in truth is withdrawn from life into an inhuman calm of trance.

She would observe him, though, silently, and watch with whatever slips and staggering, he stood.

What results when trying to render the ineffable elements of thought and establish the fleeting and elusive contours of form? To know that, you first have to decide what is normal, Isaac continued, trying to stop himself from going on, but at the same time burning to say something, anything, that might release the intense pressure he was feeling.

What's normal is that a herd of cattle means nothing to us but grazing beef. Or else a subject for a painting, with a background. Or it hardly registers at all. Herds of cattle beside mountain paths are part of the mountain paths, and we would only notice what we experience when we see them if a big electric shock or an apartment house were to stand in their place. For the rest, we wonder whether to get up or stay put; we're bothered by the flies swarming around the cattle; we wonder whether there's a bull in the herd; we wonder where the path goes from here – there are any number of minor deliberations, worries, calculations, and observations that make up the paper, as it were, that has the picture of the cows on it. We have no awareness of the paper, only of the cows.

Until suddenly the paper tears Saskia cut in, surprising herself.

Right. That is, some tissue of habit in us tears. What is left on the pictorial plane might best be called an ocean swell of sensations that rises and falls, breathes and shimmers, as though it filled your whole field of view without a horizon. Of course, there are still countless individual perceptions contained within it; colors, horns, movements, smells, and all the details of reality; but none of them are acknowledged any longer, even if they should still be recognized.

It's like the more we know about illusion, the greater the compulsion to double the illusion, triple it, multiply it a thousand times. Like a problem of chess which has to be followed into all its variations, until it becomes an obsession, an inflammation of the association tracks in the grey matter.

15 Studies in the neuropsychology of eye movements suggest that sight is dependent on eye movement.[119] That is, vision is not possible without constant eye-movement. These micro-saccades scan and read, deliberately turning our eyes in order to extract information from the optical array that surrounds us. In fact, studies indicate that retinal receptor cells fatigue if not in constant motion (or micro-motion), resulting in a visual experience fading away.[120] Sight, then, seems to operate like touch; where a finger might glide over a surface to discern detail and texture, bumps and grooves, the eye must dart around an optical array, so the retinal receptor cells can read details and give depth and substance to a given optical structure. This alignment of sight and touch, eye and skin, begins to lay out a lattice of materiality in relation to visual perception. To see, in a way, is to touch, some studies going so far to argue that "*most* human behaviors are eye movements."[121]

[119] Christopher W. Johnston, Francis J. Pirozzolo (eds.), *Neuropsychology of Eye Movement*, New Jersey: Lawrence Erlbaum Associates, 2009.

[120] Susana Martinez-Conde and Stephen L. Macknick, "Unchanging visions: the effects and limitations of ocular stillness," *Philosophical Transactions Royal Society*

[121] S. Hoppe, T. Loetscher, SA. Morey, A. and Bulling (2018) "Eye Movements During Everyday Behavior Predict Personality Traits," *Front. Hum. Neurosci.* 12:105,

Let me put it this way, Isaac hissed sharply. Any artistic endeavor is pure delusion on the fringe. Yet art goes on, carnival-stall stupidity. And out of this imbecility, like a survivor of an extinct race of Amazons who keep the secrets of magic – an archaic race of giant women, promiscuous and maternal – comes something else.

What do you mean? The people you imagine are always different from the people that really exist, she muttered, losing more and more of herself in the tangle of Isaac's thoughts.

You see, nominalism is the view that the individuals making up a class do so merely because they have the same name, not because they share some common essence. That class membership is established by particular resemblances between members. That things are what they are because that's how we see them, because that's what we decide they are. It's essentially a rejection of scholasticism - of Platonism. But what is naming *for?* It has to do, surely, with the primal power of words, to define, to enumerate, to allow mastery and manipulation; to move from the realm of objects and images to the world of concepts and names. A drawing of an oak tree depicts a particular tree, but the name "oak" denotes the entire class of oak trees, a generalizing power that could transform the entire world.

So the mistake for the painter would be to consider colors as a language. Painters don't intend to say anything, they are mute like the world: *Une toile ne parle pas, ou si peu,* as Sartre concludes. But the painter paints sense, not a meaning hidden behind the canvas: sense embodied in the picture, sense as signification turned into being. The painting is a sign that is a meaning in itself, a kind of revenge of the material picture. In others words, the matter of the form is more important than the form of the matter. The paradox is that this sense of the material secret of paintings is not immediately visible. The visible matter owns an invisible sense; it is the result of eye movement across the surface of the canvas, like a finger bumping across a plane.[15] This explains every painter's quest for an incarnation of time and movement in painting. The pictorial intuitions of matter are finally, *immediate data of expression,* something Bergson himself might well have said.

She stared glassy-eyed ahead. His condition is hopeless, she thought, but not serious. I perhaps get the drift she finally responded, her eyes searching for the door, a way out. That the whole body participates in our apprehension of the world – not just the eye – and that this is made explicit in the act of painting, and in the

London Biological Sciences, v. 372 (1718); 2019 April 19.
76.

16 Damisch's skepticism toward interpretive acts of "reading" a painting, in line with his overall position toward the problem of art-historical readings, is one that Didi-Huberman builds on and develops.[122] This is a position that argues that meaning sits in texture rather than text. That is, the act of seeing, the retinal movement of the eye over surface, leads the "reading" of the image.[123] Visual immediacy engages the body, articulating meaning. Painting presents a visual structure that operates and implements an optical force which drives understanding. And the "truth" of this meaning is material. As British painter Sargy Mann posits:[124]

> What happens with a good painting and a receptive viewer is that he switches involuntarily from one sort of attention to the other in a fluctuating way. At the point at which the experience that is being created in the viewer's mind becomes unacceptable, unbelievable, his attentions moves to the colour, the piece of paint that has let him down, so to speak, and with this to an experience of the painting is what it literally is, a flat abstract design, start to take over his attention with the beauty of its abstract relationship and this carries him forward past the sticking point.[125]

This is what Serres points to in *Veils* in his *The Five Senses: A Philosophy of Mingled Bodies* in relation to Bonnard, where the materiality of surface (skin) in dialogue and confluence with sight (eye) presents "the experience of sensation, or rather, this *is* experience or sensation."[126] The focus here is on materiality and surface as a means to transfer meaning/insight; or rather that the materiality of the form *is* the content.[127] This is a non-binary position – *what is viewed is the viewing itself.* What's more, surface leading the eye to shift attention and fluctuate between points of familiarity to points of instability or rupture, seduces the mind and exposes its operational mechanism. These areas in painting, which draw attention to the surface while presenting to the mind an open problem to be solved, create "… an experience of the truth of which we do not question while we are in its grip, but which is entirely unknown to us, unrecognizable and unverifiable other than by its intensity."[128]

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[122] Damisch, "Eight Theses for (Or against?) a Semiology of Painting," *Oxford Art Journal*, Vol. 28, No. 2, 259-267, Oxford University Press: 2005.

[123] C.f. Yve-Alain Bois, *Painting as Model*, Cambridge: MIT Press, 1993.

[124] Sargy Mann was a British painter who lost his sight, and continued to paint blind. He was diagnosed with various eye conditions that caused him to slowly

[125] Sargy Mann, "Shared Experience," *Selected by Semir Zeki for the Philosophical Transactions of the Royal Society*, Sargy Mann Archive: 1996.

[126] Serres, *The Five Senses: A Philosophy of Mingled Bodies*, 35.

[127] C.f. Didi-Huberman on Fra Angelico where the image of the divine should not signify the divine but rather be in the image of the divine. "Thus, as figure for the itself from resemblance, empties out of itself any place that could be seized upon as a univocal signification….The figure is conceived in terms of the goal of simply 1995, 52.

[128] Mann, "Shared Experience," 1996.

spectator's response to the painting.[16]

Isaac was almost out of breath and as desperate as she was to end this discussion, somewhere. Shifting from a full bladder that was starting to get uncomfortable, he tried in his stubborn and irreducible way to resolve his thoughts.

Still, it's not hard to see how the idea of natural changeability provided much of the conceptual background from the development of scientific meteorology. Clouds and weather, perhaps more than any other world phenomena, show clearly that there is no moment in nature when nothing can be said to be happening. As clouds race towards their own release from form, the mutable processes that created them, replenish them. They drift, not into continuity, but into other, temporary states of being, all of which eventually decompose and melt into the surrounding air. They rise and fall like vaporous civilizations, and the challenge to early meteorology was to reveal their hidden dynamics to our sight. So you've got to be adamant about seeing imagination and science as inseparable, complementary aspects of human consciousness. Art and science, after all, are both products of the human imagination; both are ways of representing and giving order to the world.

Saskia couldn't hide her amusement. We have naturally more admiration for things that are above us than for those that are at the same height or lower, she chortled.

All in all, he interjected quietly ignoring her, the number of choices based on feeling is infinitely greater than those based on clear logic, and every event that moves mankind arises from the imagination, only the purely rational problems have achieved an objective order, while nothing deserving the name of a joint effort, or even hinting at any insight into the desperate need for it, has been done for the world of feeling and imagination. At which he got up and walked away.

She was relieved to be free of his train of thought, which had been circling around her like a constant, persistent state of accusation. His answer always goes beyond your question, and today it wasn't even related to a question. It was like a subtle plea for water conservation, when she wanted a recipe for donuts. She leaned slowly forward

lose his sight over 35 years, left entirely blind for over 10 years until his death in 2015.

divine ought to present itself as a formless form, a figure that carries the unfigurable within itself, or rather a figure that moves out of itself, withdraws showing otherness, the otherness of the divine;" George Didi-Huberman, *Fra Angelico: Dissemblance and Figuration*, Chicago: University of Chicago Press,

[17] See Appendix 1b.

pushing her fists into her sides as she pressed up against the countertop. A coin in the machine for a prediction: *Today your strong sense of nostalgia likely has you leaning toward all things old. If you spend the day furniture shopping, you will be drawn to antique shops rather than contemporary furniture stores. There is something about the patina that only comes with age. This applies to people as well as wooden objects, which may explain why you tend to prefer to be with people who are older than you.*

She got up to wait for him at the door so she could go, to somehow speed up the exit process. She watched him as he walked over, his hands still wet from the washroom. His arms always hung kind of funny. Like his mind. And his eyes never quite looked at you, but somewhere over your head. Like you were back there instead of where you were. He had a faint smile on him, which she couldn't tell if it was one of pity or mockery or absence. Or just residue from the idle trance of urination. It looked like all three, a kind of compassionate disdain, if such a thing were possible, and Saskia found it disturbing, a sign of some festering hostility that hadn't been revealed in months. It left a kind of hot, tactile afterglow as they tumbled into the street, each in heading their own direction, with hardly a puff of a goodbye.

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If you stand to one side, it all makes sense. If you're on the other side, though, it's all out of whack. And the shape of her face and head and the look of her eyes convey something untouched straight from the past into the present. His voiced trailed off before he turned. Can you remember what it looks like, Isaac asked.

Raddled. Epicene.

Maybe. In a way, whatever it holds is extreme and pure. They say a blindfolded man cannot distinguish severe burning from severe freezing. And some cases of blindness cannot distinguish seeing from knowing. Visual *agnosia* it's called.[17] The eyes are fine, but the brain connected to the eyes is unable to process the information the eye receives. These people can see everything but recognize nothing. In some cases, they can use a limited comprehension of the visual world, in concert with aural and tactile clues, to get a *general* sense of things, but for all intents and purposes, they are lost in a world of abstraction. In more extreme cases, the visual agnostic can see, but only unconsciously, so that their seeing is merely

18 See Appendix 3, *image reference*, [figure 1].

19 Bonnard famously painted from memory. It could be argued that the vivid realness of Bonnard's work is *by way* of his process of working by recall. By focusing on how he remembers, how a given scene *felt*, he presents to us an *experience*. As Sargy Mann describes, Bonnard's painting are "…of remembered experience, different from a recording on-the-spot … you may feel that this moment is also the distillation of an event, only arrived at later in memory."[129] Bonnard himself describes his process of working from memory, intertwined in a close relationship to his obsessive drawing practice.

> The presence of the object, the motif, is very cramping for the painter at the moment of painting. The point of departure for a painting being an idea – if the object is there at the time of working, there is always a danger for the artist to allow himself to be too involved in the incidences of the direct view, and in so doing to lose the initial idea.[130]

In the practice of drawing, the looking and the mark-making are synchronous. As an act of recording, drawing provides a material link between time and space. It is an activity that involves transcribing the details of a given optical array, making choices, creating an organizational structure. And for Bonnard, this involves detailed note-taking, not only in the form of recording the contour of a scene, but in the form of notation indicating colour, light, shade, and so on.[131] He would squeeze himself into corners to create small drawings from unexpected angles, to which he would later refer in order to create his structure on canvas. His work was of one of interiorisation, made in his studio or hotel rooms where he would pin his un-stretched canvases to the wall, and re-create and re-enact a scene from the script of his notes. His drawings served as material evidence of his memory, triggering him to recollect and to reconstitute in paint the details of his subject, but by way of a specific map of focused attention through his graphic choices. This permitted him to surrender to his *sense* of an experience, to access something lyric. In this manner he composed his paintings, and in a way, performed them for the viewer.

This is a relationship between seeing and knowing – born from recollecting. As Didi-Huberman articulates, "…the act of *drawing a line*, this being the act that constitutes stable differences, [is] the act of making graphic decisions and distinctions. It is also associated with the act of mimetic recognition, and therefore with meaning."[132] The act of echoing inherent in recognition speaks to ideas of neural mapping and motor resonance as fundamental to experiencing meaning, one that relies on a complicity between the internal and external. As Elderfield concludes, Bonnard "paints from memory paintings that, representing perception, represent the creation of memory … effectively, an idea of painting not as representation given over to the beholder but, rather, as a stimulus for a representation to be created by the beholder."[133] What is interesting in Bonnard's work in relation to this, is not only how close his paintings are to his drawings, but how much more spatially complex and evocative his paintings are when he abandons the use of the camera

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[129] Mann, 'Let it be felt the painter was there…', Hayward Gallery, London: 1984.
[130] Ibid.
[131] As Graham Dixon describes, Bonnard's drawings used "…an innovative lexicon of marks, which are made of loops, squiggles, spirals, dots, dashes, ticks, color." (Graham Dixon, "Bonnard: Drawing Color, Painting Light," *artcritical*, March 2009).
[132] Didi-Huberman, "The art of not describing: Vermeer – the detail and the patch," *History of the Human Sciences* 1989; 2; 152.
[133] John Elderfield, *Bonnard*, New York: Harry N. Abrams, 1998, 41.

functional, a motor response to light, like the photosensitivity of a plant. It's not about god or anything, but about the difference between seeing and knowing. As far as that's related to god. Anyway, perhaps at some point emotions tend to be felt as pain because they are not lightened by reflection.

But still, this painting, I think it's better than it looks.

What I remember, began Saskia slowly, and then stopped. It was an old habit. In school, whenever a teacher asked a question she knew she couldn't answer, she would always raise her hand. She was the sort who went into a shop and, finding the perfect sweater, perversely bought something else not nearly as suitable for the same money, knowing all the while it made no sense. It may have been a form of anxiety that made her do this, or perhaps it was her fear of happiness.

What I remember, she began again, is the stickiness. The colours feel sticky, the air cloying. Queerer than we can suppose.

Isaac was trying to remember the picture of the bath. The big one. The famous one.[18] And he was trying to get Saskia to remember it too, to somehow help him remember it better.[19]

What time of day is it in that picture? The light floods in, its all reflections and shiny, glistening wetness, suspended in light or pinned against it. And you don't expect to see alizarin crimson, but there it is.

That's odd, I remember more the blues. Cerulean. Or prussian mixed with naples yellow with a bit of red in there. All under a gauze of yellow, gold. *Phoebus arise, and paint the sable skies, in azure, white and gold.*

It's curious, as the perceptions that we call colours, Isaac responded, are tools used by our brains to label important distinctions in the outside world. Perceived hues – what philosophers call qualia – have no intrinsic connections with lights of particular wavelengths. They are internal labels that are available to the brain, when it constructs its model of external reality, to make distinctions that are especially salient

circles, crosses, zeds and horizontals, diagonals, and vertical variants. These variable marks constitute a language for him to "speak" to the image and

midway through his career. That is to say, in his own words, "The lens records unnecessary lights and shadows, the artist's eye adds human value to objects."[134] Human value here might be taken to mean the graphic choices made to focus or edit as needed to create an *atmosphere*, a real sense, rather than photographic documentation. In fact, it seems the act of direct recording, can interfere with the true sense of something, suggesting that unmediated visual description, as far as this is possible, is secondary to conveying a real sense of someone or something. This might in turn suggest that a sort of vagueness is a pre-requisite to real understanding; where conveying sense is almost contingent on the occlusion of a full, precise, visually detailed picture in favour of salient markers or details, whose real sense is contained in the material itself, the thickness or thinness of the paint, the opacity or transparency of the colour, etc.

Thus, Bonnard's use of memory and drawing become tools to cultivate a sort of focus, at the expense of a detailed recording, and in turn allowing the primacy of material to function as the conduit to sense. The level of failure or concealment of the whole, which is inherent in focusing, seems integral to producing the jolt of invention, where we might come to realize and feel a true sense of something. Derrida goes so far to necessitate blindness or absence as a key component of draftsmanship, where "Drawing counts on the representations procured by the event, by what may have come or happened to the eyes – or to sight, which is not necessarily the same thing. It will always remain to be seen whether one of the two blindnesses does not hasten or precipitate the other."[135] Bonnard instead presents a vague enough terrain as stimulus for the viewer to engage in embodied play. This is a dialogue and exchange between seeing and knowing, recollecting and reconstituting, which is at the heart of visual perception and sense-making.

20 Colour perception is considered quite coarse in brain science; in fact, the visual system is interested in contrast rather than absolute light. Most of the visual system is colour blind – using value instead to transfer information about shape. Brain science categorizes colour as a constructed interpretation of various reflective components of a surface, as a "mental science."[136] It is more symbolic than material or descriptive.[137]

> Colour is a biological signaling mechanism which exemplifies very well the brain's quest for knowledge under continually changing conditions. It is common knowledge that the basis of colour vision is that of light – which itself has no colour, being electromagnetic radiation … Colour is therefore a construction of the brain, an interpretation…[138]

Instead, luminance has to do with value and perceived brightness, and it is what allows our eye and brain to discern shape and form. Biologically, colour and luminance are located in different subdivisions of our visual system, each responsible for different aspects of visual perception and as anatomically distinct as hearing or touching. If colour is removed from an image, it becomes clear that it is luminance that actually transfers information about form and contour, allowing the visual system to apprehend a given image.[139]

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[134] Dixon, "Bonnard: Drawing Color, Painting Light," *artcritical*, March 2009.

[135] Derrida, *Memoires of the Blind*, 50.

[136] C.f. James Clerk Maxwell referred to colour as "a mental science," *The Scientific Papers of James Clerk Maxwell*, New York: Courier Dover Publications, 243.

[137] Although the visual system is the most scientifically studied system of the brain, the mechanisms and processes involved in the conscious perception of colour & Hubbard *Journal of Consciousness Studies*, 10, No. 8, 2003, 49–57.

[138] Zeki, "Art and the Brain," *The Artful Mind: Cognitive Science and the Riddle of Human Creativity*, ed. Mark Turner, Oxford: Oxford University Press, 2006, 248.

[139] Furthermore, because our ability to see motion is in fact colour blind, when objects are equal luminant, they lead the eye to believe they are in motion, causing objects. Artists from Monet to Mondran famously exploited this phenomenon. C.f. Livingstone and Huble, *Vision and Art*, 2008.

to the animal concerned.[20] It's scathing, our preoccupation with matter itself. We have this tendency to think that only solid, material *things* are *really* things at all. But *waves* of electromagnetic fluctuation in a vacuum seem unreal. Victorians thought that waves had to be waves in some material medium. No such medium was known, so they invented one and named it the luminiferous ether. But we find *real* matter comfortable to our understanding only because our ancestors evolved to see matter as a useful construct.

So we can see that a bath, or a whirlpool, is a *thing* with something like the reality of a rock, even though the matter in the whirlpool is constantly changing. In a desert plain in Tanzania, in the shadow of Ol Donyo Lengai, the sacred volcano of the Masai, there is a large dune made of ash from an eruption in 1969. It is carved into shape by the wind. But the beautiful thing is that it moves bodily. It's what is technically known as a *barchan*. The entire dune walks across the desert in a westerly direction at a speed of about 17 meters per year. It retains its crescent shape and creeps along in the direction of the horns. The wind blows sand up the shallower slope. Then, as each sand grain hits the top of the ridge, it cascades down the steeper slope on the inside of the crescent.

Actually, even a barchan is more of a *thing* than a wave. A wave seems to move horizontally across the open sea, but the molecules of water move vertically. Similarly, sound waves may travel from speaker to listener, like a waking, a climbing or a swimming animal, but molecules of air don't do that. That would be a wind, not a sound.

A *wave,* interjected Saskia. But if you're gonna look at a picture of a girl in a *bath,* you can't help thinking that there is a vast and maybe dialectical difference between that which we wish to *see* and that which we wish to see *represented* – that the responses elicited by representations are absolutely contingent upon their status as representations – and upon our knowledge of the difference between actuality and

are not entirely clear. A number of experiments, including some in colour-blind synaesthesia suggest colour is largely brain based. See Ramachandran

a visual tremble or shimmer. The brain perceives an indeterminant position due to their equal luminance as the visual system requires contrast to situate

Bonnard explores this phenomenon as he creates terrain where movements of the eye "create a vibration suggestive of daylight illuminations as patches of paint form uniform continuous colours and edges. Too much illumination though, especially when formed by purely oppositional colour, risked dazzling and blinding, therefore stopping the beholder, …".[140] Bonnard's use of colour speaks not only to theories of chromatic context, but plays with discrepancies between physical cues and our perceptions to create a sort of subtle unease and disorientation.[141] His sense of colour grew from his interior logic, based on the notes in his drawings that recorded his impressions or feelings of the world about him. Indeed his paintings were generated from memory cued from these notes, pointing to a material exploration of top-down theories of visual perception. The colour combinations he used, built up through subtle layers, are noted to have an effect on afterimages as well. Indeed, when you surrender to his images, your eyes feel a sort of burn, perceiving an afterglow for some time.[142]

Cognitive colour theory illustrates that colour and shape are inextricably linked, where "…there must be a boundary between one surface and the surrounding surface, and that boundary has a shape. Hence the impossibility (except in very rare pathological conditions) of divorcing colour, and hence liberating it, from shape. Colour therefore follows the logic of the brain's operations."[143] Unbound colour literally escapes our vision. This colour bleeding through ambiguous form is what Bonnard cultivates, induced even more clearly in his renditions of reflected colour. Indeed, it is the colour in the shadows, rather than in the light that depicts Bonnard's highly original colour variants and ensembles. As Elderfield notes:

> …the dazzling contrast across the orange-and-blue…with yellow surround produces an after-image with each shift in focus, which superimposed on the subsequent fixation, makes it difficult to gain the image of the… woman…It is like looking into glare; being dazzled by more than I can absorb; afforded only a momentary glimpse of somebody not being able to know where to reach somebody.[144]

21 The relationship of illusion to representation in the discussion of mental imagery becomes important when considering the nature of images and the pictorial. American psychologist J. J. Gibson's ecological optics maintains that image-making is a *record of an awareness.* This is based on an embodied argument where "…natural vision depends on the eyes in the head on a body supported by the ground, the brain being only the central organ of a complete visual system."[145] He distinguishes between photographic (i.e. methods involving mechanical reproduction) and chirographic methods of image making (i.e. hand-to-eye reproduction involving a graphic tool), and argues that pictures present a record of knowledge by way of an array of optical information. This record is either real or imagined; indeed the distinction is unclear: "While drawing, he may be looking at something real, or thinking about something real, or thinking about something wholly imaginary; in any case the invariants of his visual system are resonating…"[146] And the various forms and constitutions in which these images combine by way of the visual system, present new knowledge. This attraction to acquiring new knowledge is what is identified in brain science as a central directive for the brain's attraction to dissonance, ambiguity, incompleteness.

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[140] Elderfield, *Bonnard*, 36.

[141] C.f. Conway, B. R. and Livingstone, M. S. "Color Vision, Neural Basis of," *Encyclopedia of Cognitive Science*, ed. L. Nadel, New Jersy: Wiley, 2006.

[142] C.f. Elderfield, *Bonnard*, 48, on luster. See also studies of after-effects of colour in neurobiology such as M. Livingstone and D. Hubel, "Segregation of Form.

[143] Zeki, "Art and the Brain," 17.

[144] Elderfield, *Bonnard*, 47-48.

[145] Gibson, *The Ecological Approach to Visual Perception*, 9. This is in contrast with Gombrich's overall position that image making derives from a sort of copying and finally a mental image in the mind that is subject to all sorts of creative transformations." (Gibson, 230).

[146] Ibid, 230.

representation.[21] What we see of the real world is not the unvarnished real world but a model of the real world, regulated and adjusted by sense data – a model that is constructed so that it is useful for dealing with the real world. The nature of that model depends on the kind of animal we are. A flying animal needs a different kind of world model from the rest of us.

And even the best *representations,* invariably suppress and displace the greater and more intimate part of any experience that it seeks to express. I would be forced to admit that all the volumes of Proust were nothing, quantitatively, compared to the twenty-minute experience of having a bath on a spring morning in that summer cottage by the river – and that the more authoritatively and extensively you seek to encode such an experience, the more profoundly it's obliterated from the immediacy of memory and transported into the imaginary realm of remembrance, invested with identity, short of utility, and polished up as an object of delectation.

So, that gauzy filigree of decentered awareness you get from standing in front of that picture becomes the body's last defense against codified self-knowledge.[22] It supplies a visceral hard copy, like a solvent for identity trying to approximate some fragment of that enigmatic feeling that whatever you are, you are not the stuff of which you are made. Matter flows from place to place and momentarily comes together to be you.

As had happened the last time they were together, she was unable to achieve the mental concentration she wanted. All kinds of thoughts came crowding in, blocking the way. To get rid of them, she tried thinking about being in that bath – which actually made her think about being in the twenty-five-meter indoor pool where she would sometimes go for exercise. Thinking about doing laps. Not aiming for speed, just using a quiet, steady stroke, over and over again. Bringing the elbows out with a minimum of noise and splashing, then a stroke gently, fingers first. Taking water

Color, Movement, and Depth: Anatomy, Physiology, and Perception," *Science*, vol. 240.

and "…assumes an optical image on the retina, a physiological image in the receptors, a transmitted image in the nerve, a cerebral image in the brain,

So, in the act of looking and in the engagement with the visual, a process of learning presents itself.[147] Current understandings of the neurobiology of the brain present a visceral attraction to terrain for learning – an attraction to problem solving that seduces the brain and provides pleasure, the gratification involved in coming to understand.[148] For Gibson, this is accessed by "marking a surface in such a way as to display invariants."[149] There is no possibility of imitating a visual array – but rather "What it records, registers, or consolidates is information, not sense data."[150] The implication is that these invariants convey meaning through a felt sense, so that this record of awareness is experienced materially.[151]

This relationship between representation and mark-making is discussed by Didi-Huberman in relation to the fragment where he argues for the primacy of the materiality of paint over the sovereignty of presentation by way of representation:

> When a painting suggests a comparison *(It is like such and such…)* it is not long before others contradict it *(But it is also like such and such…)* It will not therefore be the system of comparisons or the 'resemblances' themselves, but the system of their differences, that will have a real chance of saying something about the painting, of making us feel how the detail becomes a patch, imposing itself in the picture in terms of an accident of representation – representation given up to the riskiness of paint as matter. It is in this sense that the *patch of paint* imposes itself in the picture, both as an accident of representation *(Vorstellung)* and an example of the sovereignty of presentation *(Darstellung)*.[152]

This idea of the *riskiness of paint as matter*, speaks to the materiality of the trace in mark-making which is what ultimately conveys meaning – literally knowledge through the residue of kinesthetic trace – one that we might hesitate to recognize intellectually but concede to feel somatically. As Didi-Huberman describes, "… it makes sense, violently and equivocally, the way a wound on an area of white skin gives a surge of meaning to the blood that beats beneath it."[153]

22 Shifting attention when looking at the painting causes areas to sharpen and others to recede into what David Sylvester calls "muzziness."[154] It is as if Bonnard is combining distance viewing with close-up focus – presenting a feeling or an awareness rather than a focused documentation of a scene.[155] Philosopher and Professor of Neuroscience Antonio Damasio discusses emotion as the method by which an organism maintains its homeostatsis in the environment in order to survive. Emotions are not only the mechanism through which the body monitors and regulates itself, but the nature of meaning. He argues that emotions which are perceived as feelings are fundamental and lie at the heart of our ability to make sense of our world and to act intelligently within it, and are the foundation of our general awareness of the

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[147] C.f *hypertext* 35 on mimesis and mathesis.

[148] C.f. Zeki, "The Neurology of Ambiguity," *Consciousness and Cognition*, 13 (2004) 173–196. Roots of some of these ideas lie in the 19th century German physiologist unconscious and conscious processing. C.f. Eric Kandel, "The New Science of Mind and the Future of Knowledge," *Neuron* Vol. 80 Issue 3, 30 October 2013, 546-

[149] Gibson, *The Ecological Approach to Visual Perception*, 231.

[150] Ibid, 232.

[151] As Gibson states, "The movement of the tool over the surface is both felt and seen. The muscle-joint-skin kinesthesis is emphasized by orthodox sensory record of the movement of the tool is lasting…in short a trace." (Gibson, 229-230). This is interesting in relation to cultural historian Steven Connor's comments on analysis and the primary operations of touch and moulding. For Serres, "Spirit is the spirit of solids, senses are the senses of liquids...the soul and the body have Serres and the Shapes of Thought" *Anglistik*, 15 (2004): 105-1`7.

[152] Didi-Huberman, "Vermeer – the detail and the patch," 159.

[153] Ibid, 164.

[154] As David Sylvester points out, "…towards the edges things get muzzy, as they do in reality at the periphery of our field of vision, and I'm no more aware of Yale University Press, 2001,107).

[155] C.f Elderfield's discussion of this in relation to parafoveal and peripheral vision (Elderfield, *Bonnard*, 41).

into her mouth and letting it out slowly, as if breathing underwater. After a while, her body flowing naturally through the water, as if riding on a soft wind. The only sound to reach the ears is that of her own regular breathing and the water splashing around her. A sense of calm envelops her, a feeling close to rapture. Swimming is one of the best things in her life. It has never solved any problems, but nothing has ever ruined it for her. Swimming. Floating. Like ethereal ballast. If she didn't have it to hold on to, her feet would leave the ground. We'd never see Saskia again.[23]

Her lips tightened a bit. The ring of telephone, any telephone, anywhere, invariably caused Saskia's lips to tighten a bit.

No, not tomorrow. The day after, sure. And he closed the phone.

That was Charlie. Just got back. Now he knows exactly how dangerous it all can be. And I hope he never forgets it. He says he never imagined how trees could be so weird and unearthly. I mean, the only plants he's ever really seen or touched till now are the city kind – neatly trimmed and cared-for bushes and trees.

Charlie had just spent a few weeks hiking in the woods on his own. Isaac had known him for years. He hardly left his apartment building, and one day he packed up and just left for the deepest wilderness he could reach in a day's coach ride, and just started walking.

The ones he was lost in – the ones living there wherever he was – are totally different. They have a physical power, their breath grazing any humans who might chance by, their gaze zeroing in on the intruder like they've spotted prey. Like they have some dark, prehistoric, magical powers. Like deep-sea creatures rule the ocean depths, in the forest, trees reign supreme. If it wanted to, the forest could reject, or swallow someone up whole. A healthy amount of fear and respect might be a good idea. I don't think he enjoyed living all alone with nature like that. In theory,

and psychologist Hermann von Helmholtz who first discovered unconscious processing and the brain's ability to draw inferences from a combination of 560.

psychology and the visual kinesthesis is emphasized by my perceptual psychology. But these are transient awarenesses. The seeing of a progressive the subject of topology in Michel Serres, where he argues that topology marks and maintains the meeting of the abstract and the concrete, the activities of a common edge, in the punctual singularity of the little pineal gland, the cicatrice of their distinction and their unity." Steven Conner, "Topologies: Michel

exactly where the rectangle of the canvas is than I am of exactly where my field of vision ends." (David Sylvester, *About Modern Art: Still Life*, New Haven:

world.[156] As Damasio writes: "Emotions play out in the theater of the body. Feelings play out in the theater of the mind."[157] This awareness, no doubt, points to a sort of subjectivity where there is a confluence "of 'reality' into first-person experience."[158]

Where form is concerned, Bonnard crowds the flattened space with volume, as if the eye was darting through, then over, the pince-nez he wore, which intensified the play between monocular and bifocal vision that is habitual in sight. He describes vision as mobile and variable, where "Distance vision is flat. [but] It is the nearby planes which give the idea of the universe in the way the human eye sees it, an undulating universe, convex or concave."[159] Bonnard's paintings present a sort of fluid, vibrating mobile space, complete with peripheral distortions, indicating real experiments in how to understand and represent perception.[160] Indeed much understanding of Bonnard circles around him as an empirical realist searching to record "natural vision."[161]

This idea that Bonnard is recreating the process of seeing natural vision or the process of seeing, begins to recede and is subsumed in a greater attention to a sense of how the greater process of vision operates. That is, "He is re-creating a mental process, the way in which experience is continuous and cumulative."[162] This is generated by his meticulous attention to the nature of how it is we see, and in turn understand; direct and indirect awareness.[163] For example, his play of convex and concave space, foreground and background, peripheral distortion is apparent in the positioning of the bath – where Bonnard's orientation seems clear when standing in front of the painting. As suggested by Timothy Hyman's embodied description of Bonnard's large *baignoires:*

> Most amazing of all are those passages where the bath narrows, then seemingly exhales and expands, buckling, merging with the vibrating floor; the paint here is crusty, layer upon layer, and the drawn edges of bath and figure just barely defined, by a brush – or a fingertip – dipped in crimson, dragged loosely across the surface.[164]

23 Studies in motor resonance in the last decade provide empirical evidence that our bodies are complicit in recreating internally what we are apprehending, in a literal and embodied way.[165] Motor resonance is so deeply ingrained, that the body internally re-enacts on a cellular level to what it perceives, and, in fact, even when it imagines and holds a visual image in mind. Some recent studies in experimental neuroaesthetics have been able to map unconscious saccadic eye

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[156] C.f. Damasio, *The Feeling of What Happens*, 1999. See also Lisa Feldman Barrett's research which presents the origins of emotions as derived from our unique *the Future of Human Nature*. Stuttgart: Pan Macmillan, 2017.

[157] Antonio Damasio, *Looking for Spinoza*, New York: Harvest, 2003, 28. On the idea of homeostasis he elaborates: "When I developed this notion, I began seeing and pleasure behaviors, and appetites) … *Background emotions are composite expressions of those regulatory actions as they unfold and intersect moment by* playground that our organisms resemble. These include metabolic adjustments associated with whatever internal need is arising or has just been satisfied; and this cauldron of interactions is our "state of being," good, bad, or somewhere in-between. When asked "how we feel," we consult this "state of being" and answer

[158] Timothy Hyman, *The World New Made*, London: Thames & Hudson 2016, 117. Hyman argues that "The myopic spectator's gaze drifts through a floating the previously unchartered territory of peripheral vision, it was as though the central area of focus were surrounded by much less predictable, almost fabulous

[159] Pierre Bonnard, Nicole R. Myers, Allison Stielau, *Pierre Bonnard: The Late Still Lives and Interiors*, New York: Metropolitan Museum of Art, 2009,12.

[160] C.f. Alistair Burleigh, Robert Pepperell, and Nicole Ruta, "Natural Perspective: Mapping Visual Space with Art and Science," *Vision* 2018 (2:21): "Visual sensation "diplopic" effects of binocular vision. These contribute to distance and depth judgments in vision […] Also, visual acuity varies with eccentricity, with the highest

[161] In Bonnard's words: "The eye of the painter gives to objects a human value and reproduces things as the human eye sees them. And this vision is mutable,

[162] Sylvester, *About Modern Art: Still Life*, 109.

[163] Gibson, *The Ecological Approach to Visual Perception*,1979.

[164] Hyman, *Bonnard*, London: Thames & Hudson, 1998.

[165] G. Rizzolatti, L. Fadiga, V. Gallese, L.Fogassi, "Premotor cortex and the recognition of motor actions," *Cogn. Brain Res.*, 3 (1996); This is not unrelated to mirror-touch synaesthesia. However while mirror-touch synaesthesia is a rare condition effecting a small percentage of the general population, mirror-neurons are part of the human cortical *The Neuroscientist*. (2016), 23.

it's not impossible to live like that for a long time, and of course people do. But, I think he found nature a bit unnatural, in a way. And that sort of realization can actually be threatening. It takes experience and preparation to really live with those contradictions.

I wonder what he's got to say for himself now, Isaac's voice trailed off.

Still floating in the swimming pool, Saskia thought of Charlie and his overbite. His apartment building was oddly set across from unused lots, which are now built-up stifling any view that was once there. But back then, there was nothingness, emptiness, vacant lots between decaying buildings, empty spaces across from their urban block. Charlie's baby brother used to spend hours in those empty lots across from the apartment building, lost in the long summer grass with a glass jar and a fishing net, trying to trap butterflies. Occasionally, he would succeed, and putting them in his jar he would run up to his cousin's room on the fifth floor and sit outside his door until he would open. Thrilled to be let in to the teenager's sweaty room, he would wander through gazing enviously at his bug collection and looking at all the butterflies mounted on his walls.[24] There, the little boy would nervously and proudly pull out the butterfly he'd just caught, gasping its last breath, and watch as his cousin would coldly insert a long pin through its tiny body. He would watch as it beat its last beat, desperate, flailing, and beautiful. Anyone who says that nature is indifferent to the cares and sufferings of mankind knows little about mankind or nature. A regret, a headache, a pierce through a butterfly's body, however insignificant or slight the event, immediately disrupts the orbit of the stars, alters the ebb and flow of the tides, interferes with the moon's ascent, and troubles the currents in the atmosphere and the undulating clouds. Sceptics

personal psychological experiences, physiology and environment. (C.f. Lisa Feldman Barrett, *How Your Emotions Are Made: The Secret Life of the Brain and*

background emotions as the consequence of deploying certain combinations of the simpler regulatory reactions (e.g., basic homeostatic processes, pain *moment in our lives.* I imagine background emotions as a largely unpredictable result of several concurrent regulatory processes engaged within the vast with whatever external situation is now being appraised and handled by other emotions, appetites, or intellectual calculation. The ever-changing result of accordingly." (Damasio, 44).
world, until arrested by that sudden seeing/feeling – and that transition, from blur to focus, is an essential component of Bonnard's language. [...] In margins; where subjectivities – imagination, reverie, memory – could be asserted." (Hyman, 130-31).

is composed not only of spatial properties but also of "texture" properties such as variations in acuity across the visual field, and the "double-vision" or resolution coinciding with the foveal area of the retina and falling off rapidly towards the periphery." (5).
and this vision is mobile." (Hyman, *The World New Made*, 128).

touch synaesthesia which is a clinical condition where there is an active associative somatosensory empathy to touch from one subject to another. system and the basis for human empathy in everyone. C.f. Linkovski, Omer & Katzin, Naama & Salti, Moti. "Mirror Neurons and Mirror-Touch Synesthesia."

movements that suggest stimulus-specific patterns that match patterns that would occur if actually looking at equivalent visual imagery.[166] Even more compelling is the fact that studies show that if eye movements are restrained (to the extent they can be) or disrupted in some way (for example stimulating or leading deliberate eye movement in an image-irrelevant way), this unsettles the imagination, interrupting the imagery held in mind.[167]

24 Didi-Huberman positions the figural model of butterflies and moths as objects of visuality symbolizing the nature of the image and its temporality. The fluttering conjured by the lepidoptera is an associative, unstable quality of the image that resists a fixed position in the canon.[168] Instead, for Didi-Huberman, the image assumes a relational role whose sense emerges not only within dialogue with other images, but, as this research explores, with the mechanism of sight and vision itself by way of the physical and the material. That is, there is not only an associative force of images that leads to an interpretive process, but there is a primacy of materiality that takes over. Thus, for Didi-Huberman, the relationship of seeing and knowing is unstable, but possible to penetrate by way of the matter of paint itself, which he is clear to recognize as a paradoxical tautology: "By saying 'what painting shows is its material cause, that is to say paint', I have done no more than produce a kind of tautology, one that must now be worked on, gone into further, filled out."[169]

Yet he contends with the art historian who "detests being affected by any troubling effects created by the paint," by acknowledging that images can be *read* on the level of iconography, but also, and mainly, *read* on the level of materiality.[170] It is on this level that Didi-Huberman begins to qualify what he considers to be the "overdetermined" aspects considered within the analysis and understanding of the image, surrendering rather to the primacy of pigment and material, and in this way, building on Damisch's exploration on the relationship between surface and depth. In this context he asks "…what does it actually mean to have a detailed knowledge of a painting?"[171] This, for Didi-Huberman, lies in the relationship between seeing and knowing, one where *seeing*, looking, experiencing the visible, undermines the sovereignty of *knowing*, of cognitive understanding. The mechanism of vision in relation to cognitive capacities and embodied experience offers a position that presents the confluence of the two – seeing *as* knowing, and visa versa.[172]

With this Didi-Huberman challenges the idea of analysis of parts to whole as a means to know, *in detail*, as he puts it. He instead surrenders to the "indeterminacy of the material constituents of painting," its opacity which occurs not only on the level of the phenomenological relationship between the eye and the gaze, but on the level of painting and depiction, that is, from the "seen world … to the painted world."[173] This is accessed by way of the confluence of form and content, and in this way painting becomes crucial to bridging a tradition that treats the mental and the physical as distinct.

> …the efficacy of painting… [by which] it is of course rare for a picture to cause the death of someone looking at it … indicates the existence of something very real *at work* in painting, almost a form of dazzlement. Obvious,

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[166] R. Johansson & M. Johansson, "Look here, eye movements play a functional role in memory retrieval," *Psychol Sci.* 2014 Jan; 25(1): 236-42.

[167] This has been applied to somatic treatments for trauma, specifically EMDR memory treatment of PTSD as a method to erase memory for sufferers of severe *in the Healing of Trauma*, New York: Viking, 2014.

[168] For Didi-Huberman this is specifically in reference to Aloïs Riegl, Franz Wickhoff and Aby Warburg, but also speaks to a greater tradition in art history. C.f.

[169] Didi-Huberman, "Vermeer – the detail and the patch," 138.

[170] Ibid.

[171] Ibid, 135.

[172] As Didi-Huberman articulates, "One can therefore never learn, heuristically speaking, how to look at a picture. That is because knowing and looking have utterly led, implicitly, to get round the question: he will say about the painting, whose entire meaning ceaselessly evades him, 'I haven't seen it enough; to know something sovereign act of knowing. Seeing *in detail* would therefore appear to constitute a convenient little organon for all knowledge about art. …" Ibid, 135.

[173] Ibid, 144.

who make it their business to disbelieve everything, with or without proof, will say that this theory is unfounded. But frankly what other explanation could there be for the continuous bad weather that lasted months. The tender shock that anyone can sense in Charlie's little brother, which he has carried with him his whole life, can all be boiled down to tall grass at the edge of a city. And a little boy trying to balance between gales and storms, bugs and puberty, never finding sufficient reason for unruly elements.

You know, Charlie has some theories about that bath picture, Isaac began again, brushing aside Saskia's noiseless stare as she was lost in memories of butterflies and little boys.

I dunno Izi. Charlie also had that *theory* about ancient Greece. Remember? He tried to convince us it was entirely fabricated between 1951 and 1959 by a team of scholars working *non-stop* to forge the relevant evidence. That they just started making things up, Homer, Aristotle, Socrates, Hippocrates, the lever and fulcrum, rhetoric, ethics, all the different kinds of columns, everything. Do you remember? He even he tried to convince us that Euclidean geometry is actually the work of a grad student named Kevin. Really Isaac…. Then remember when he came to his brother's wedding party wearing a powdered wig using art as his defense. What was it he said, that whenever Haydn composed, he always made sure to dress formally, even wearing a powdered wig?!

They were both enjoying the memory of Charlie and his overbite.

Well, returned Isaac, the question is whether he apologized *after* the party or before.

You can't blame Charlie. No one had ever bothered to tell him that Socrates and Sophocles were not the same man, that George Eliot was a woman, or that the Divine Comedy was a poem about the afterlife and not some boulevard farce in which all the characters wound up marrying the right person.

post-traumatic disorders, and liberate them from haunting memories of trauma. C.f. Bessel van der Kolk, *The Body Keeps the Score: Brain, Mind, and Body*

Didi- Huberman, "Phasme. Essais sur l'apparition 1," *Les Editions de Minuit:* Collection Paradoxe, 1998.

different modes of being. Rather than risk the total collapse of cognitive disciplines that have art as their object, the historian or the semiotician will thus be more about it I must now see it in detail.' See it, not look at it, for seeing thinks it knows better how to approach, anticipate, or mime the supposedly

> luminous, and perceptible it is at the same time obscure, enigmatic, and difficult to analyse, notably in semantic or iconic terms, for it is an effect of paint at work not as a descriptive sign but as coloured matter.[174]

25 Neurophysiologically visual acuity has to do with where attention is set.[175] Acuity in central vision is high resolution and sees fine things, whereas peripheral vision functions to filter, taking in the big picture instead. The play between these two creates a perceptual dynamism.[176] Depending on where focus is placed – either the details that make up the image, or the image itself – become prominent. Thus there is a visual undulation that is encouraged, or rather brought to attention, as it is always occurring.

There is a link between cognition and eye-movement in a sort of assimilative overlap. For instance, studies suggest that there is implicit compatibility between spatial cognition and the eye movement patterns that people use to examine a given scene.[177] Painters intuitively explore the process of assimilation in their studio practice in exploring various forms of visual imagery. For example, compositions that are busy and packed, both in content and mark-making, require longer fixations of the eye and shorter saccades. Yet, the eyes are never fixed in an absolute sense – by nature, they are constantly darting in micro-saccadic movements back and forth, over and around a given center of focus, compensating in the process for movements of the body and changing positions of the head. So, tightly filled compositions minimize the space, distance and duration of natural eye jerks, stabilizing the threshold for taking in information. This results in assimilation, where "the blur of the oscillation of the eyes, is the blurring of the distinction not only between light and dark, and figure and ground, but also between (saccadic) not seeing and (fixated) seeing."[178]

Bonnard exploits this play between the local and global sense of an image and scene, causing our eye to bounce around, suspending us in both a creepy intimacy and voyeuristic distance that feels very real. There is *an awareness*, subtle though precise, that builds up to an experience, as Sylvester describes:

> … that corresponds to the fact that in reality I am not necessarily conscious of where I am standing as I look at something: my consciousness is what I am looking at and my thoughts about it and my thoughts about my thoughts (which could include thoughts about the distance). Bonnard, then, does not paint something seen as if seen in an instant of time. He causes the spectator to have the same kind of experience in front of the painting as he has in and of the real world.[179]

This familiarity that Bonnard is able to transfer through his work is what Gibson calls *natural* perspective achieved by way of *ambient optic array*.[180] This is a *world-disclosing quality*,[181] an *awareness*, that is the distilled essence of perception

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[174] Ibid, 149. Didi-Huberman here is referring to Proust. It is interesting to note Fyodor Dostoyevsky's remarks in *The Idiot* in reference to Hans Holbein the viewer lose his faith.

[175] C.f. E. H. Gombrich's discussion of the beholder's share in *Art and Illusion: A Study in the Psychology of Pictorial Representation*, London: Phaidon, 1960.

[176] See Margaret Livingtone's compelling analysis of the Mona Lisa's smile. Livingtone argues that neurologically, acuity falls off with eccentricity; that is, vision is to be smiling when we look at her eyes, but not when we look at her mouth. Whereas Gombrich accounts for this with *sfumato*, Livingstone argues instead that this looking at Mona Lisa's eyes makes her smile look wider and happier than looking directly at her mouth does because receptors in the eye have varied responses *Vision and Art: The Biology of Seeing*, 2008.

[177] Implicit is the notion that certain types of creative insights are associated with changes in relevant perceptions. C.f. Thomas, Lleras, "Moving eyes and moving

[178] Elderfield, *Bonnard*, 49. Also see Władysław Strzemiński's comments in *Theory of Vision:* "Instead of a mechanical, arbitrary (conventional) unity of the object seen *Vision*, 1958, 241)

[179] Sylvester, *About Modern Art: Still Life*, 109.

[180] Gibson, *The Ecological Approach to Visual Perception*, 232.

[181] C.f. Davidson, "What Metaphors Mean," 1978.

A good argument for cultivating forgetfulness. She gave one of her monumental sighs, like a burst tyre.

Seeing is sort of forgetting the name of the thing you see; that's Charlie's idea – that that bath is nothing but a vehicle for attuning or retuning individual patterns of attention and percepti on.[25] In a way it's a simple thing. If you try the best you can to pay attention to sounds, you will start hearing all these sounds coming in. Once you let them in, you've already done the first and most critical thing: you've honoured that information by including it. And, by doing that, you've actually changed the world. It's nothing mystical, but you've redefined the world for yourself. So this bath becomes something you can swim in rather than focus on.

Yes, but to look at it, you have to *feel* it with your eye.[26] Like some sort of snail. First you feel the shapes in the flat – the patterns, like the tiles on the floor, the porcelain of the bath. And then you feel in the round. The body that's there and not there, like a solid accusatory shadow, floating in the dirty water. But you don't look at it as if it's a picture of someone. But rather like a colored raised map. You feel all the rounds, the smooths, the sharp edges, the flats and the hollows, the lights and shades, the cools and warms. The colors and the textures. There's hundreds of little differences all fitting in together. And then you feel the bath, the chair, the towel, the carpet, the window, and the woman – as themselves. But not as any old bath and woman. But the bath of baths and the woman of women. You feel baths are like that and you never knew before. So it's like a bath can be a door if you open it. And a work of imagination opens it for you. It breathes in the air. It cannot be seen but it enters the room every time the door is opened. Since it doesn't have a shape, it can become anything it wants. And then you feel with all the women that ever lived and all the women that are ever going to live, and you feel their feeling while they are alone with themselves – in some chosen private place, bathing, drying, dressing, criticizing, touching, admiring themselves sage

Younger's *The Body of the Dead Christ in the Tomb* (1520-22), which captivated Dostoyevsky to the point where he declares it has the power to make the

sharpest at the center of our gaze. Peripheral vision is better at seeing big blurry things. So in the case of Leonardo da Vinci's Mona Lisa, we perceive her effect has to do with where attention is set. By observing differences in human vision depending on the angle at which an object is seen, she explains that to the different angles in the painting. So, we perceive her smile to be shifting, "coy" as Gombrich describes. C.f. Margaret Livingstone and David Huble,

thought: On the spatial compatibility between eye movements and cognition," *Psychonomic Bulletin and Review*, August 2007, Volume 14, Issue 4.
with one fixed gaze, we (painters) bring reality to the process of seeing as it really is, namely a physiological activity." (Władysław Strzemiński, *Theory of*

and speaks to the nature of visual meaning.[182] As Gibson argues, "It is not an illusion of reality that is induced in these pictures, but an awareness of being in the world. This is no illusion. It is a legitimate goal of depiction, if not the only one."[183] Painting as an aesthetic experience in the pre-Kantian sense, puts us in the middle of the exploration of this awareness, and provides the possibility of real insight - one that only plenary vision can provide, grounded in a felt-sense.[184]

26 Bonnard was aware and actively explored the connection between the felt-sense and the optic. There was as a marked tactility that gave the intimacy of his pictures their charge. As Serres describes, "The painter, with the tips of his fingers, caresses or attacks the canvas … With his fingers of skin, Bonnard makes us touch the skin of things."[185] For Bonnard drawing was sensation, a physical taking possession of a scene or image. He was conscious of the relationship of the act of looking to the body, and would draw with "'an indescribably blunt pencil that was so short that a landscape or a nude seemed to spring from the ends of his fingers compressed around an invisible point.' In other words, as he drew, his fingers travelled with the pencil, feeling their way across the surface of the paper."[186] Though Bonnard used the camera and photographs as starting points for some of his earlier paintings, the spatial complexity he slowly developed was a direct result of his drawing practice. As Hyman articulates, this practice makes explicit "…the space that extends between the self and the world."[187] This is a decidedly embodied manifestation Bonnard grappled with, one that animates an enactive approach to the nature of visual perception.[188] Indeed Bonnard "is representing perception not by simply transcribing the *adventures of the optic nerve but transcribing the adventures of the body that carries the optic nerve.*"[189]

This interdependence and overlap of body and vision, touch and sight, is an assimilation that conveys a restlessness where different senses vie for supremacy.[190] The result is a sort of scintillation that creates the feeling of being present in the scene, a felt-sense of real awareness of the world that is presented before us. As Hyman puts it, "Bonnard registers a moment, intensely seen and intensely felt; and his subject is precisely that registering, in all its complexity."[191]

27 From a cognitive neurobiological perspective, the idea of conveyance lies in the physical relationship between object and subject as the basis for aesthetic experience, and is given impetus through the concept of empathy.[192] The aesthetic role of empathy shifts from a metaphysical and intuitive level to a material and physical level, derived from the structure of the body and the brain. Motor resonance provides an empirical and objective basis for the role of empathy and emotion in the aesthetic experience of the viewer. This arises from the haptic quality of a given piece, which results in felt

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[182] C.f. Władysław Strzemiński *Theory of Vision*, 1958, 241, "In the process of seeing it is not important what the eye seizes mechanically but what man becomes

[183] Gibson, *The Ecological Approach to Visual Perception*, 232.

[184] It is important to point out that this is not a discussion of good vs. bad art, or taste vs. judgment. There is an assumption that this discussion centers around in those who engage with it.

[185] Serres, *The Five Senses: A Philosophy of Mingled Bodies*, 35.

[186] Elderfield, *Bonnard*, 30, quoting George Besson.

[187] Hyman, *World New Made*, 128.

[188] C.f. Ooi et al, "Distance determined by the angular declination below the horizon," *Nature* 414 2001, 97–200. Studies on body-based "scaling" in visual perception ideas, these studies argue that the apprehended "scale" of the visually perceived environment is gauged in reference to the scale of the body contributing to *Perspectives on Psychological Science*, 2013 8(5) 573–585.

[189] Italics mine. Bonnard as quoted in Elderfield, *Bonnard*, 47.

[190] There is an interesting connection here to Derrida's distinction between writing and drawing (text and image) as presented in *Memoirs of the Blind*. Here representation as a moment of blindness. As he states: "The heterogeneity between the thing drawn and the drawn trait remains abyssal, whether it be between eve or the memory of the day, that is, as a reserve of visibility (the draftsman does not presently see but he has seen and will see again: the aperspective as the *of the Blind*, 45.

[191] Hyman, *Bonnard*, 9.

[192] Modell explores empathy through ideas of projective identification, appealing to Jung, Piaget and others to show how empathy and metaphor are related requires this play of similarity and difference: one recognizes a sense of identity with the other while at the same time retaining one's sense of self. If this play of

behind locked doors. Nothing there but women's feeling and women's beauty and critical eye. And all this comes from the emptiness round the liver and confused noises in the cerebellum.

Or maybe you don't need to actually see the work at all. Maybe you just need to hear about it.

It's like our relationship to pain. Everybody wants to make pain interesting, first the religions, then the poets, then, not to be left behind, even the doctors with their psychosomatic obsession. They want to give it significance. What does it mean? What are you hiding? What are you showing? What are you betraying? It's impossible just to suffer the pain, you have to suffer its meaning. Like the grin without the cat, the sensation without the clatter of its conveyance.[27]

The morning sun tore through the clouds and light suddenly fell from a window neither had noticed. As Saskia turned to adjust her dress, Isaac took a sip from his bottle. The unimpeachable act of drinking juice distilled this moment, so it seemed that the situation had become utterly unreal. The painting didn't seem to mean much. What meant something, what alone existed with a life of its own was the indefatigable, interminable struggle via the act of painting to express in visual terms a perception of reality that had happened to coincide momentarily with their noiseless architectural world. To achieve this was of course impossible, because to know is to insert something into what is real, and hence to distort reality. But they were committed, in fact, condemned to the attempt. And then what was happening to both of them through and because of the painting, became unreal, yet more than real in a way, since at the very root of the situation lay the nature of reality itself. So, their presence

aware of in his vision."

work that is successful, that speaks to the subtly of what it means to see, and is able to convey it through the materiality of paint in a way that resonates

- the interpretation favored by proponents of embodied perception is that the environment is perceived relative to the body. Growing from Gibson's an understanding of body-based influences on perception. C.f Glenberg et al. "From the Revolution to Embodiment: 25 Years of Cognitive Psychology,"

he categorizes drawing materially, in its capacity to imitate sensual vision (aesthesis), exposing a gap between sight, visual sensation, and visual a thing represented and its representation or between the model and the image. The night of this abyss can be interpreted in two ways, either as the anticipating perspective or the anamnestic retrospective), or else as radically and definitively foreign to the phenomenality of the day." Derrida, *Memoirs*

through imagination. "We usually think of empathy as a form of voluntary imagination in which there is a sense of self as agent … [However] empathy similarity and difference is absent, one may experience a total identification with the other … " (Modell, *Imagination and the Meaningful Brain*, 118).

bodily response derived from implied movement. Zeki situates this physiologically in what he calls *the receptive field*:

> The receptive field is one of the most important concepts to emerge from sensory physiology in the past fifty years. It refers to the part of the body (in the case of the visual system, the part of the retina or its projection into the visual field) which, when stimulated, results in a reaction from the cell, specifically an increase or decrease in its resting electrical discharge rate.[193]

Neuroimaging indicates clear activity in the brain's motor system when viewing a painting, suggesting that a level of understanding, or at least stimulation, occurs on a visceral, physical level. For example, cognitive neuroscientists David Freedberg and Vittorio Gallese break down their theory of empathy into two components: content and form. There is, on the one hand the "relation between embodied empathetic feelings in the observer and the representational content of the works in terms of the actions, intentions, objects, emotions and sensations depicted in a given painting or sculpture."[194] And on the other hand, there is the "relation between embodied, empathetic feelings in the observer and the quality of the work in terms of the visible traces of the artist's creative gestures, such as vigorous modeling in clay or paint, fast brush work and signs of the movement of the hand more generally."[195] This refers to the haptic quality of a given piece, which results in felt bodily response derived from implied movement.

The empirical dimension of the visual domain, then, extends to the physical encounter of the viewer with the artwork, to the simulation of actions, emotions, and tactile sensations.[196] Consider for example Lucio Fontana's *Tagli* paintings (1940-58).[197] Freedberg and Gallese devised an empirical experiment to study the effect of a painting such as Fontana's on the brain. There was clear activity in the brain's motor system when viewing the painting, suggesting that a level of understanding, or at least stimulation, occurs on a visceral, physical level. Cognitive intervention may or may not occur, depending on one's relation to art, art history, modernism, etc., but there is clear and compelling evidence that the body is directly involved in experiencing art, and in somehow feeling its meaning, re-living or re-enacting the slash from the method of its making. Furthermore, this experiment provides "… the first evidence of the involvement of the cortical motor system in viewing static images of abstract art, even when devoid of any explicit representation of movement, and independent of visual familiarity…".[198]

From a neurobiological approach, the visceral physical response conveys real meaning, where brain imaging experiments lead to the conclusion that "The perception of visual art works begins with the visual analysis of the stimulus, which then undergoes further processing. […] likely based on biological and embodied mechanisms that are modulated by factors such as the context, individuals' interest in the artwork, prior knowledge, and familiarity."[199] So, Gallese and Freedberg's experiment suggests the concrete expression of a work accesses image schema that refers to

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[193] Zeki, "Art and the Brain," 17; See also his discussion of Einfülung: "To be able to activate a cell in the visual brain, one must not only stimulate in the correct
fussy about the kind of visual stimulus that they will respond to. The art of the receptive field may thus be defined as that art whose characteristic components
derived from the german *Einfühlung* (or "in-feeling" or "feeling-into") as discussed by thinkers such as Theodor Lipps, Robert Vischer, et al., and which bears some
symbolic shapes get their meanings primarily from their embodied and anthropomorphic content. Wilhelm Worringer develops this concept of empathy to include
In *Abstraction and Empathy*, Worringer acknowledges that modern aesthetics "culminates in a doctrine that may be characterized by the broad general name of the
diverse from myself, to empathise myself into it. 'What I empathise into it is quite generally life. (Wilhelm Worringer, *Abstraction and Empathy*, *A Contribution to*

[194] Freedberg, David and Vittorio Gallese, "Motion, Emotion and Empathy in Aesthetic Experience." *Trends in Cognitive Sciences* 11 (5):197–203, 2007.

[195] Ibid.

[196] This haptic quality has been explored more extensively in moving image studies (and in studies of movement and gesture including dance and sign language),

[197] Fontana first began experimenting with slashing the surface of paper and canvas to explore the distinction between two and three dimensionality, blurring the
give the illusion of an endless void behind.

[198] B. Sbriscia-Fioretti, C. Berchio, D. Freedberg, V. Gallese, M. Umiltà, "Abstract Art and Cortical Motor Activation: an EEG Study," *Frontiers in Human Neuroscience*,

[199] Ibid.

and their relationship occasionally seemed to proceed from, and to partake of a combination of the endogenous and the reactive. That it was somehow a mix of genetic inheritance provoked by the world itself.

But my point is that pictorial illusion only has power as illusion, persisted Isaac. It is only interesting as an excerpted, ideological re-creation of what is lost, past, or only imaginable. Modeling and perspectival renderings reconstitute a painting as extended discourse, framing it, temporalizing it, and more than cubing the amount of relational information that its structure can bear. They free its signifiers from their referents in present reality and make it possible for us to lie, to imagine, and to propose the problematic in a persuasive way. Pictorial illusion is magic for people who do not believe in magic.

But the suspension of *disbelief* by which we become receptive to a work of pictorial illusion is in fact *belief,* a momentary faith by virtue of which we are convinced, persuaded, and then touched. So to enter a work and to engage in life are really the same thing, and require the ability to appreciate the pleasure of being terribly, terribly deceived. It's a communion during which we can know for a moment a hidden coherence that we are at once seduced and suspicious of the seduction, and then complicit in it.

Our comfort level with illusion is always a matter of how exquisitely we delay the illusion's taking hold. Like we somehow need to pay obeisance to the material present before we experience the imagined past. It's a temporal thing, quite literally, the matter of time, the vehicle by which we allow access – at the proper or improper speed – to the imaginary realm of the image. If something deceives us too instantaneously, we resent it. But if, on the other hand, the illusion defers the resolution of the image long enough, if we have to work a bit for the image, engage and be complicit in it all, then it can really make us *aware.* It's an *esemplastic* power that takes hold. And we are aroused by it, seduced by

place (i.e. stimulate the receptive field) but also stimulate the receptive with the correct visual stimulus, because cells in the visual brain are remarkably resemble the characteristics of the receptive fields of cells in the visual brain and which can therefore be used to activate such cells." (Zeki,12); Empathy is relation to David Hume's ideas of sympathy. Vischer described *Einfühlung* as the physical response caused by the form within a painting. According to him, or account for abstraction, which together with current theories of embodied cognition, might provide a bridge to understanding meaning in visual practice. theory of empathy." Aesthetic experience is explained as the urge to empathise, where "To enjoy aesthetically means to enjoy myself in a sensuous object *the Psychology of Style*, trans. Michael Bullock, New York: International Universities Press, 1953, 5).

See Vivian Sobchak, *Carnal Thoughts: Embodiment and Moving Image Culture*, Berkeley: University of California Press, 2004.
distance between perception and reality. Cuts were made with single gestures using a sharp blade. The canvases were supported with black gauze to

2012 6:311.

the repertoire of the viewer's experiences.[200] This in turn is applied metaphorically to convey an abstract concept. The aesthetic experience becomes the result of the physical intertwining of the subject and the object which seems to be almost entirely determined by the body.[201] As the experiment concludes:

> We suggest that beholders' cortical motor activation constitutes an important component of the perception of abstract art works of the kind shown here – as well, we would propose, in the case of more explicit representations of movement in pictures.[202]

Further experiments have been conducted to examine neurophysiological responses to static abstract images devoid of obvious meaning in order to establish the motor resonance of the viewer's sensorimotor circuits in relation to more ambiguous stimuli. Using Franz Kline's 1953 *Suspended*, 1954 *Painting Number 2*, and 1952 *Painting Number 7*, experiments indicate that not only do "results support the role of embodied simulation of artist's gestures in the perception of works of art," but responses have to do with the visible traces of brush strokes as evidence of goal-directed movement.[203] The brain's response is not the same with the computer simulation of the same marks with the haptic traces removed. This experiment presents evidence that the motion and activity contained in drips or starts and stops evident in various forms of mark-making, are "capable of activating the cortical representation of the same hand gesture in the observers' brain."[204] This is part of more generalized evidence that suggests "looking at objects is unconsciously "simulating" a potential action," suggesting concrete evidence for embodied visual cognition and the primacy of materiality.[205]

28 For Damisch, paintings hold the potential to awaken the gaze by exploring the complexity of seeing, through a process of materially feeling around the way in which the visual system works, where the deliberate articulation of surface defines the act of painting.[206] However, this articulation is one that is not only generated by the painter/mark-maker/artist, and felt by the viewer through and in the body, but in fact constitutes something elemental in painting itself. In this way, aesthetic experiences become unique, and represents a drive we actively seek to satiate, as we do hunger as Aristotle put it.[207] As Damisch states:

> Where semiology exhausts itself in vain by updating the "minimal units" that would authorize it to speak about painting as a "system of signs," painting reveals, in its very texture, that the problem needs to be handled the other way around, at the level of the relations between the terms, not at the level of lines but of knots. In order for one to be convinced, it is not a question of stopping at the images painting offers, nor even at the process of their creation or generation, but rather of taking into account what in the act of painting is specific to painting *[le propre du travail de peinture]:* the production, at each of its moments, and according to perpetually renewed

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[200] There is an interesting connection here to Damisch's work on the history of images, C.f. Bois, et al, "A Conversation with Hubert Damisch,"1998.

[201] It is interesting to note William James' suggestion that sensation and imagination utilize the same areas of the brain, which has since been confirmed by brain circuitry – so that a study and understanding of visual perception might give insight to how the imagination functions. C.f. William James, *The Principles of*

[202] Gallese et al., "Abstract Art and Cortical Motor Activation: an EEG Study," *Frontiers in Human Neuroscience*, 6 (311), November 2012.

[203] B. Sbriscia-Fioretti, C. Berchio, D. Freedberg, V. Gallese, M. Umiltà, "ERP Modulation during Observation of Abstract Paintings by Franz Kline," *PLos One*, 2013

[204] Ibid.

[205] Ibid. Gallese further elaborates: "the representation of an object (based on the visualization of its affordance) is integrated with the ongoing simulation of the *Consciousness Studies*, 7, 10, 23-40 2000: 31).

[206] Damisch states in relation to Mondrian's paintings that they "hinder the movement whereby an unreal object is constituted from the tangible reality of the published in 1967), Ludwig Wittgenstein contends that communication begins not "from *Painting as Model*, 248). See also Matthew Bowman, "The intertwining –

[207] C.f. Aristotle in *hypertext* 35. See also the extension of this embodied language in relation to aesthetic experience in Didi-Hubermans's discussion of the dialectic Modernity," *Walter Benjamin and History*, Andrew Benjamin (ed.), New York: Continuum, 2005).

it, even hunger for it.[28]

Saskia felt humbled by his candour, how trustingly he laid himself bare. It was as if the possibility that they would be anything other than kind and forgiving of one another had not occurred to him.

An image then, is a *becoming and happening of truth.* It's not merely the reproduction of what we can already see, but that which makes visible what we cannot see. There's a spatial logic to it, to the interface between perception and revealing. And this is related to the temporal component, that the intimate spaciousness of the bath actually conveys an undifferentiated vastness that undermines your sense of time and place.[29]

So space can enclose, rather than liberate. We get a sense of the bath not by what it is, but by where it is somehow. But all the while, she softly added, there is the perception that something must be done. But what?

Well, Isaac responded in his gently cultivated voice. Typically, there is the seduction of compromise – that a *combined* system will solve the problem. If only the problem was clear. Then a further compromise, containing a deep confusion, is suggested. But whatever might be suggested, proposed, *put on the table* and arrived at, the question remains: why talk about that bath picture at all, or any picture for that matter?

Because a picture, a good picture, one that really resonates, is like a ship that slices open the black sea. The horizontal is faintly pitched, bow to stern, as if despite its great steel competence the ship were uneasy and could solve the problem of a liquid hill only by cutting through it quickly; as if its stability depended on such a glossing over of flotation's terrors. But there was another world below. Another world below that had volume but no form. By day the sea was blue surface and whitecaps, a realistic navigational challenge. By night,

neurophysiologists, suggesting a tight symbiosis between the body and the imagination. It would seem that vision and visual imagination utilize similar *Psychology*, New York: Dover Publications, 1950.

Oct 9.

precise potential action which could be performed upon the object (V. Gallese, "The inner sense of action: Agency and Motor Representations," *Journal of*

painting, the eye being ceaselessly led back to the painting's constituent elements, line, color, design," (As printed in Bois, *In Lectures on Aesthetics* (first Damisch, Bois, and October's Re-Thinking of Painting," *Journal of Contemporary Painting*, 5.1, April 2019.
of desire and Benjamin's aura as "'that of which our eyes will never have their fill". (Didi-Huberman, "The Supposition of The Aura: The Now The Then and

> procedures, which nevertheless do not obey laws that one could take, hypothetically, as universal, of what makes its *element*.[208]

So, rather than questions of critical principles, or ontologies of artwork, or any formal approach to semiotics of images, "what is specific to painting" points instead to elements within the production of painting that illuminate the way our mind works. Interesting in Damisch's approach is how materiality and descriptive models fold in on each other, dwelling instead in a felt sense that impels silence; "But what fascinates me most is the moment when painting forces us into silence. We talk and then we sense that there's something that escapes us."[209]

29 Consider embodied cognition's schema of *Time as Space*.[210] From this perspective, space is biologically determined through motion, location, and movement constituting spatio-physical experiences which in turn locate time in a tangible way, that is in a continuum of bodily positions. Thus there is a blending of space and time resulting in metaphors that we understand through these experiences. For example, "He was here on Monday," is a spatio-temporal blend. This example, as well as others, shows how we understand metaphors that use references to time and motion, and time as progression, for example "time flies," "none of the leaders has moved from their positions," etc.[211]

These types of blends actively involve the imagination and in fact seem to constitute its very process. The cross-domain mappings and blends that are engaged in cognitive approaches to metaphor are in fact a creative process. This is important because the implication is that there is an active involvement of imagination in how we perceive the world, how we interact with concepts, how we create the very fabric of what we consider external. Imagination is complicit in the reality before us, to such a pervasive level, that we are not even aware of it. And since metaphors are embodied, it is possible to speak of a corporeal imagination.[212] This idea of corporeal imagination has largely to do with empathy. Empathy and empathic imagination engage an instantaneous mapping from self to other and other to self, verifying this innate biology of the self-and-other as a unit, a oneness that is united from the start.[213] From this perspective, perception, memory, and imagination are all interwoven into the fabric of intentionality, and determine the nature of our actions in the world and how we generate meaning. In acknowledging the role of imagination in intentionality, it becomes impossible then to view imagination and perception as separate faculties, and in turn misleading and confusing to contrast imagination with reality.[214]

30 Our ability to see depth, spatial organization figure/ground segregation is carried out by a colour-blind subdivision of the visual system. Our visual system extracts information from two flat retinal images, using binocular vision (stereopsis) to calculate depth.[215] Binocular calculation is one of the most robust visual cues to depth, and is deepened using

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[208] Hubert Damisch, "Eight Theses for (Or against?) a Semiology of Painting," *Oxford Art Journal*, Vol. 28, No. 2, 259-267 Oxford University Press (2005), 26; See is – is played out on another level: that of representation, in the theatrical sense of the term, produced by means of painting … organised in such a way as to be a alternative spatial constructs to linear perspective, namely depictions of clouds in pictorial production from the quattrocento. Damisch offers a revision of traditional visual meaning.

[209] C.f. Damisch's comments in Bois et al, "A Conversation with Hubert Damisch", 12.

[210] Lakoff and Johnson, *Philosophy In The Flesh*, 139.

[211] The temporal relationship of vision is an ancient one. Sophocle's Oedipus tragedies, the connection between seeing and knowing is inverted to one of blindness the light..'," stating that "When Oedipus sees, he does not know, and when he knows, he blinds himself. The transition – from unknowing vision to the exposure

[212] C.f. Serres, *The Five Senses: A Philosophy of Mingled Bodies*, 2008.

[213] C.f. Mirror Neurons in David Freedberg and Vittorio Gallese, "Motion, Emotion and Empathy in Aesthetic Experience," *Trends in Cognitive Sciences* 11 (5):197–

[214] The interplay of reality and imagination is explored in Norman Bryson's *Word and Image*. In his discussion of realism he reveals a tension between "'accurate and the signified. In the juxtaposition of the signifier (the work of art) and the signified (the sought after meaning of that work), there lies an unresolved confusion its status as a place of production of meaning; and in the absence of any visible generation from within the work, meaning is felt as penetrating the work from an in an intellectual process derived from his perception and attempt at understanding. Norman Bryson, *Word and Image: French Painting in the Ancien Regime*,

[215] Livingstone and Huble, *Vision and Art*, 2008. There is further research that explores stereo-blindness in artists such as Gustav Klimt, who had misaligned aware of – and therefore better able to capture – the other, monocular clues to depth and distance, such as perspective, shading, and occlusion." C.f. Margaret S.

though, it went forth and dove down through the yielding – the violently lonely – nothingness on which the heavy steel ship traveled, and in every moving swell you saw a travesty of grids, you saw how truly and forever lost someone would be six fathoms under. Dry land lacked this. Dry land was like being awake. Even in a chartless desert you could drop to your knees and pound land with your fist and feel that land didn't give. Of course the ocean, too, had a skin of wakefulness. But every point on this skin is a point where you could sink and by sinking disappear.[30]

She berated him then, and for a while the crepuscular birds retreated, but outside the wind had begun to blow the sun out, and it was getting very cold.

~

Temporary or permanent blindness is the main symptom. Just be careful for the next while. Before the loss of the field of vision sometimes there are visual hallucinations. People describe fire, geometric forms, certain images and shapes. *Anopsia* is the clinical word.[31]

Isaac slid off the examination table and reached for his coat. *Beached there in tangles of flicker* he muttered, making a hissing noise through his nostrils.

Listen, it's not clear really what's going on yet. And anyway, in a lot of cases there is often explicit reconstruction of the visual field in the blind areas. In general, though, your symptoms are going to depend on the type of vision defect. If partial atrophy occurs, the symptoms may not manifest, or just a marked loss of the visual field in only one eye. When the complete atrophy of the optic body ceases to exist completely it's a bit different. This is

also Damsich, *Theory of /Cloud/*, which points to a self-conscious self-referentiality in representation that subverts itself: "The illusion – if that is what it representation of a representation."(Damisch, *Theory of /Cloud/*, 64). This is a discussion of the paradoxical nature of representation, where he considers art historical accounts of spatial organization as related to concepts of object and idea, recall and knowledge, sight and insight, central to the nature of

and insight, occurring in an arc delineated in time. Michael Newman quotes the chorus of Oedipus at Colonos, "'Time, all-seeing Time has dragged you to of blindness – is brought about by his subjection, as a mortal, to time." (Newman, *Drawing Time*, 2013).

203, 2007.

reduplication of the real' and 'alien superimposition of intelligibility'." (9). To resolve this tension, Bryson turns to Roland Barthes' exploration of the signifier where "... signification seems to enter the text from an 'outside', and outer reality which the text passively mirrors. The realist text disguises or conceals imaginary space outside it – the 'world', whose intrinsic meanings are simply being transcribed." (9). Thus the individual viewing a work of art engages Cambridge: Cambridge University Press, 1983.

eyes that would have prevented stereoposis and the correct apprehension of depth. "Someone who cannot perceive depth from stereopsis may be more Livingstone and Bevil R. Conway, "View Masters," *Skeptical Inquirer*, Nov.–Dec. 2006.

relative motion, shading, etc. allowing the brain to process a sense of space through the surface of vision. Merleau-Ponty discusses the experience of depth by way of surface in "Eye and Mind":

> When through the water's thickness I see the tiled bottom of the floor, I do not see it *despite* the water and the reflections; I see it through them and because of them. If there were no distortions, no ripples of sunlight, if it were without flesh that I saw the geometry of the tiles, then I would cease to see it as it is and where it is – which is to say, beyond any identical, specific place. (…) This inner animation, this radiation of the visible, is what the painter seeks beneath, the words *depth*, *space*, and *color*.[216]

Surface, then, becomes a condition for the experience of depth. Here the internal and external overlap in dialogue, the play between surface and depth opening the possibility of insight by way of sight. Insight derived by way of *Materia*, is an act of penetration as it were, delving into the surface and dwelling somewhere between direct and indirect understanding. In Gibson's words, "… a picture always requires two kinds of apprehension that go on at the same time, one direct and the other indirect. There is a direct perceiving of the picture surface along with an indirect awareness – an indirect perceiving, knowing or imagining of virtual surfaces as the case may be."[217] Serres places the primacy of meaning through the materiality of surface within the relationship between sight and skin, one where skin or surface become "… the feeling subject, a subject always active beneath the surface." [218]

31 See Appendix 1c.

[216] Merleau-Ponty, "Eye and Mind" in Galen A. Johnson (ed.), *The Merleau-Ponty Aesthetics Reader*, trans. Michael B. Smith, Evanston, Illinois: Northwestern
[217] Gibson, *The Ecological Approach to Visual Perception*, 232.
[218] Serres, *The Five Senses: A Philosophy of Mingled Bodies*, 30.

accompanied by the involution of the right or left visual fields in both eyes. As the anopsia is not a separate disease, but a symptom of a pathological process, the treatment consists of alleviating the underlying pathology.

Ben had been at school with Isaac. They'd known each other with pimples and whimpers, but had only vaguely kept in touch while Ben worked long hours at the hospital. But Isaac knew him well enough to see the dejection that hooded his eyes. There is a creepy fascination to inhabiting such horror on a daily basis – the kind that draws a crowd to an automobile accident. And to be in a place where children are born or where men and women are dying or suffering in extremis is to be close to the quick of life. Those who do not become inured to the work find it strangely vitalizing. Death in particular focuses life, and deepens it. In the face of death we can discriminate between the important and the trivial. We sometimes drop our habitual or guardian reticence and speak clearly.

Ben put the cover back over the machine he was using to look at Isaac's eyes. Isaac was looking at the floor. At Ben's shoes. His surreally expressive vocabulary of shoes.

So you're telling me I've got to live with a giant gap in my vision. A hole. Negative space. *Pfft.* I feel like a witness at my own absence, moped Isaac. *To miss. To feel the absence of. Also, to fail to do, as to miss an opportunity.* With this Isaac sat inert, with premonitions of catatonia, a haughtiness of paranoid megalomania alternating with feelings of insecurity and self-contempt.

Come in again next week and let's have another look, ok? It's still early days. Just try not to dwell on your first reaction – your characteristic contra-suggestibility – to always disbelieve, to disprove. It's always been there underneath your politeness, since we were boys. You're like a porcupine. When the animal has its spines erect, it can't eat. If you don't eat, you'll starve. And your prickles will die with the rest of your body. See it instead as an opportunity to understand your mind. How it relates to the rest of you. Your eye, as a mechanism, will miss a portion of the world. But your brain will adjust. It's just a question of what is the tapestry of that adjustment. What sort of fantasy you delectably delegate.

University Press, 1993, 142.

He winked while he shuffled papers, flicked his pen a few times, and then answered the phone. Listen, I've got to run, they're paging me. Just turn your face to the sun, the shadows will fall behind you he added as he flashed a feral smile and ran off.

That's what Isaac always found irritating about Ben. His spontaneous outbursts of genuine decency mixed with something entirely unhinged. Especially when he was determined to dislike him for the moment.

Stuffing his hands in his pockets Isaac ambled off. That's what I am. That's what I've always been. All my life. Negative space. Always waiting for someone, or something, or some kind of real feeling to fill me up and give me a reason.

His head hanging down, shuffling and then almost kicking the floor like a child. Losing his balance he tumbled into the street where he nearly tripped over Myla. There she was, stout and old, a sinking, squarish frame of bones. Isaac remembered Myla as a full figured, dark-haired, plump, straight-legged woman. Now all the geometry of her figure had changed. She had come down in the knees like the jack of a car, to a diamond posture. Next to her was Saskia, softly tying a scarf around her neck as she tucked her into a taxi and kissed her goodbye.

So what did he say?

Who?

What do you mean, who? What's going on with your eye or your head, or both?

Where is she off to Isaac asked, motioning at the taxi speeding away.

To the Colossi of Memnon, rolling her eyes and slipping her arm through his as they crossed the street.

Saskia was looking after Myla in the days following the finch theft. Six cages of finches were stolen from her balcony and garden one night when she was sleeping. The rest of her vast wealth entirely untouched. They reported it to the local police who had fielded several dozen similar incidents over the past few months. There was a ring of finch thieves operating that had baffled authorities. Not just finches. Sparrows, buntings, siskins – just about anything tiny that chirped. What could these birds possibly be worth – what sort of underground market existed for Myla's finches?

Did they catch them yet, Isaac asked.

No, but they've cracked the case. Or part of it. They caught a guy with 26 finches squeezed into hair curlers in his carry-on bag. They were drunk on rum. The birds. He gave them booze to keep them calm and had some himself – he stank so they stopped him. *Birds that wintering watch in Memnon's tomb* she twittered.

You're kidding.

It seems the birds were being smuggled to take part in chirping competitions. Birds are pitted against one another to sing – and the ones with good voices get sold for a bundle. Finches are the best chirpers apparently. And then people bet on how many times the birds will chirp in a minute. Which finch chirps the most or the best or the loudest or something. It's big business for that sort of thing.

Susperia de profundis muttered Isaac, balance restored.

They started crossing the park and Isaac told Saskia about his meeting with Ben.

I can see why you're upset. A gap in your vision is no small thing, especially if you don't know what size that gap is going to be, or if it's going to increase. She paused for a moment. But the space *between* is as tangible as anything else. We all are wandering around space, feeling around. Why be so troubled by a gap in your vision?

It's the immateriality of it all.

Izi don't be so dramatic. It just tests things more deeply, all this stuff you've been talking about. In abandoning the brain that divides, you're forced to quit as well all questioning and argument. I do not mean you need to become silent or anything – but your mouth will finally be sealed before the sleepless, pestering questions of the dividing mind.

She tugged at her sweater under the hot sun. It'll test your faith in what you see, or what you think you see. What did Whitman write to Emerson? *I am a man who has perfect faith.* Faith does not question. Or, to give the matter its proper shading, faith is the aftermath of questioning – not the answers but the quitting of doubt. It is an ancient wisdom that questioning itself postpones or prohibits faith. There's that Buddhist sutra where a monk comes to the Buddha

32 George Didi-Huberman introduces the term "whack of white" in response to the impotence of descriptive information to satisfy the conditions of understanding.[219] He employs this term to refer to areas whereby the work itself can be felt through its gaps, its moments of uncertainty experienced through materiality – the raw physicality of the material of paint. Entering a work through these spaces refers to a phenomenological gaze, one that allows an embodied experience without necessarily losing sight of the complexities of a work operating on a cognitive level.

Didi-Huberman argues that breaking down an image to its constituent parts, even within a semiotic rubric, does not lead us to the power an image holds over us, and does not satisfy the full complexity of a given visual experience.[220] Rather it is the *whack*, the material blow we experience on a visceral level that irrupts and transfers a felt sense of meaning, like a punch in the gut or a caress of the cheek. The turn to the physicality involved in the process of coming to understand, is arrived at from points of instability, rupture, areas of articulated ambiguity or dissonance. These are areas of collapse:

> … dissemblance, a sort of disturbance, comes to reign there as the omnipotence of strangeness. There is nothing metaphysical about this strangeness in itself: it is only the power, the very symptom of painting – the materiality of painting … [221]

These points are areas of incomplete, unfinished, or unsolved terrain that require and invite active recruitment of solutions to complete meaning, form or sense. For Didi-Huberman, it is an image's resistance to clarity, its opacity ("nonconscious") that is the territory that holds meaning. These areas are points of rupture *(dechirure)*, where the visual field becomes vulnerable and open to a series of associations rather than fully served by direct readings. He pushes this idea of indeterminacy to an interest in the materiality of painting. He approaches surface and depth in relation to the nature of meaning, where sense is conveyed despite our conscious intervention. It is an embodied experience, where thought is secondary to feeling – we understand without clear cognitive intervention. And this sort of understanding is embodied, cultivated through the material substance of paint.

> To the extent that the zone of the picture concerned is made visible to us we can see perfectly well that there is in fact nothing to see other than a meaningless, ragged-edged run of paint – the material substance, paint – but even so we will see something, and give shape to that substance, thanks to the mimetic context from which it springs. So we will believe, in spite of everything, that we understand what we see: almost without thinking about it …[222]

Our attraction to images that require some level of problem solving is corroborated by contemporary studies in cognitive science. Neurophysiologically, we are drawn to these ruptures, attracted to a combination of constancy and ambiguity which excites the mind. Ambiguity here is used in the sense of a dissonance or indeterminacy that invites, and in fact requires, active resolution. Neurobiologically, we are attracted to "different levels of ambiguity dictated by neurological

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[219] Using Fra Angelico's *The Annunciation*, Didi-Huberman focuses on the idea of gaps as zones of disruption or areas of indeterminacy. He considers the space it, and because it envelops us without our being able, in our turn, to catch it in the snare of a definition. It is not visible in the sense of an object that is displayed powder of chalky particles in the other." (Didi-Huberman, *Fra Angelico: Dissemblance and Figuration*, 52); There is an interesting connection here to Kathy Acker's gaps between, in the movement of one section to another." Kathy Acker, 'On Burroughs 5', *Kathy Acker Papers*, *Box 4*, as quoted by Georgina Colby, *Kathy Acker*:

[220] Didi-Huberman, *Confronting Images*, 2005.

[221] Ibid, 9.

[222] Didi-Huberman, "Vermeer – the detail and the patch," 154.

saying he shall abandon the religious life unless the master can answer his question. Is the world eternal, or isn't it? The flavour of floating through the ocean of deathless life has quieted all questions. Just as the tree is inside its seed, so all our diseases are in asking these questions. And now you have a disease in your eye, or your head, or between the two. Why can't you just occupy your body, surrender to it?

In sober moments Isaac did not oppose abstraction or symbolic thought, or Saskia's pull to the earth and bodily things. But behind his search for what lies under what he could see lay a longing – and it is a poet's longing – to pull the whole world into the imagination. The body itself is a crime against that desire. Isaac's interest in images, in art, was a revolt against all that. Better and safer to be an image or lost in one rather than an embodied body of excess – burping, farting, bruising, hurting. Better to have clear boundaries, to be a figure against a ground. There he could keep things under control.

Your inner world, your psychical reality is never going to coincide with the *world out there.* Mental realities, psychic experience, memories of experience, memories of dream, even fantasy – they're all equally valid as representation. It's just that space is needed. Or holes. Cracks, crevices, hollowed out spaces of mutual incomprehension where a proposition can exist, as indeterminate as anything else, changing from moment to moment. And here your biology has delivered you that very thing! She paused for a moment, trying to gauge his silence.

And wanting to work with *the image,* she continued, with what it represents, is what epistemology is about. The immateriality of an image is as real as anything else, as real as psychical reality. What is an object without physical materiality? It's like negative theology. A space, hole, gaps in time or special niches in the larger expanse of something else. The nothing that is not there and the nothing that is. Space between closely spaced things, as closely spaced as teeth. Interstices.[32]

between the angel and the virgin where "…there is nothing, because there's white. It isn't nothing, because it reaches us without our being able to grasp or outlined; but neither is it invisible, for it strikes our eye, and does much more than that. It is material, its stream is luminous particles in one case, a thoughts on the idea of the gap where she states that "meaning – the meaning of the self or self – lies not in what is said, in character and/or plot, but in *Writing the Impossible*, 117.

necessity and built into the physiology of the brain," which we experience in temporal sequence (separated by milliseconds).[223]

This temporality in the visual brain points to a picture of "micro-consciousnesses" distributed in time and space, rather than to a unified visual consciousness.[224] These are derived from the brain's attraction to differences, to areas that lack consistency and resolution, in order to satisfy its quest for information. And from a neurophysiological position, "one of the functions of the brain … is to instill meaning into this world, into the signals that it receives. Instilling meaning amounts to finding a solution."[225] So, as an image or set of marks present an open construction in terms of dissemblance or indeterminacy, the brain engages in play, rhythmically structured, sensuous and embodied, reflexively articulating a sense of meaning.[226] Thus, it is when a given area, dialogue of images, or specific medium is "sufficiently unclear that the self is invited to enter into the construction of the image."[227] Studies in neurophysiology and aesthetics, suggest that it is "the hyperstimulation of selected areas of the visual cortex when viewing an ambiguous painting or sculpture [which] expands the viewer's imagination."[228]

Neurophysiologists working in aesthetics argue that art illuminates the nature of the imagination as it imitates the manner in which the visual cortex constructs images, actively engaging in the same way as it constructs or reconstructs the perceptual field. And the mind seems to be seduced by spaces in-between – the gaps in work that allow for the imagination to enter and play as it were.[229] As Michael Newman articulates, "The artist's role is not to make the invisible visible, but rather to bear witness to the gap, the space between …".[230]

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[223] Zeki, "The Neurology of Ambiguity," 173.
[224] Zeki, "A Theory of Micro-Consciousness," in *The Blackwell Companion to Consciousness*, ed. Max Velmans, Oxford: Wiley-Blackwell, 2007.
[225] Zeki, "Art and the Brain," 16.
[226] The imagination is attracted to indeterminacy as a means to feed its will to creativity and plays an instrumental role in the construction of meaning. C.f. Alumit
[227] Modell, *Imagination and the Meaningful Brain*, 117, referencing Zeki.
[228] Ibid, referring to Zeki's research on ambiguity.
[229] C.f. Zeki, *A Vision of the Brain*, 366. This has also been studied to some degree in literature by Elaine Scarry, where she explores how configurations of words/
[230] Newman, *Drawing Time*, 2013.

Dinosaurs held sway for 100 million years while mammals, all the while, lived as small animals in the interstices of their world.

In that space, in that failure, is the possibility of a proposition. With so many imaginative possibilities to choose from, why be hemmed in by the facts?

Irrealis he responded.

She looked at him, confused.

The *irrealis,* he repeated. The irrealis is a *mood.* Something made of past, future, wish, dread, dream. A proposition. Hypothetical space, *potential.* It indicates that a certain situation or action is not known to have happened at the moment the speaker is talking, even somehow constituted by fantasy. That undecideability leads to potential.

Grammatical moods fascinated Issac. The imperative. The conjunctive. The inferential. But mostly the optative mood interested him. Hopes, wishes or commands almost but not quite like the subjunctive. *If only I were.* It's a wish that has not been fulfilled and probably will not be. And the jussive mood which expresses plea, insistence, imploring, self-encouragement, wish, desire, intent, command, purpose or consequence.

It has a sort of spectral intelligence, he continued. On behalf of and in my place. It's not about prosthetic memory or the unconscious or anything. Its just undecided territory, and its indistinguishable from our sensibility. It ends up a double proposition, his voice trailing off. The mood is like the image, it puts something forth that is constituted by itself, so that it's also about itself – it loops around itself in a way. And it's also contaminated by all other optical and textual inputs.

Are you talking about seeing and knowing? Do you think you're not going to be able to tell the difference all of a sudden because of this gap in your optical field?

Ishai, Robert Pepperell, "Perception, Memory and aesthetics of Indeterminate Art," *Brain Research Bulletin* 73(4-6):319-24, August 2007.

phrases/descriptions can imitate how the brain perceives images. C.f. Elaine Scarry, *On Beauty and Being Just*, Princeton: Princeton University Press, 2001.

33 Cognitive experiments offer empirical evidence that we are physically attracted on a very basic level to points that lack definition or areas of uncertainty, dissonance, or ambiguity – things that need resolving or making sense. This attraction begins to articulate not only our deep relationship to images and mark-making, but how meaning-making might be reciprocally situated in the nature of visual perception. It seems that the brain is attracted to abstraction as a form of ambiguity because it presents suitable terrain for learning, which is pleasurable, and that this experience and understanding is embodied.[231] Meaning-making derived from the visual is literally grounded physically in materiality; and the elemental components of mark-making present terrain for instances of pleasure as they engage the mind and brain in the play involved in coming to understand.[232]

Mirror neurons and other cognitive mappings of neural network spaces may present a fragmented perspective, a fundamentally divided, non-unified vision, where "…the self or cognizing subject is fundamentally fragmented, divided, or non-unified."[233] It is our minds that create some sort of linearity and a cohesive narrative from the fragments before it, and that unified narrative is part of a web of experience that is shared.[234] This cognitive process suggests that these novel blends constitute the formation of a totality, which occurs by way of a cohesion of fragments and abstractions. The power of abstraction lies in the potential it carries to represent the whole, a potential that must be actively realized by the viewer.[235] We must engage in an active process of connection and inference, connecting a part to its whole, which in turn highlights the fact that abstraction is an interwoven discourse that is an integral part of life.

Damisch acknowledges this in his 'Remarks on Abstraction' where he asserts that abstraction is a mode of operation that is not confined to art, but rather one that touches almost all human activities, "from the most elementary forms of measurement and calculation to the most ethereal mathematics and from logic and philosophy to the natural sciences." He continues:

> Even from a strictly historical point of view, no matter whether the historical perspective turns into narrative as such, we would have to agree that the problem of abstraction, considered as an operative mode or as a thought process, totally surpasses the restricted area allowed to abstract art in the program of modernity, to say nothing of the temporal as well as the conceptual limits, thus relegating it to the status of a "genre." Abstraction, in the broader sense, is something that goes upstream far beyond the medieval period and the so-called dispute of "universals," up to what is conventionally regarded as the Greek origins of Western thought, which by the way coincide with the origin of Geometry.[236]

The role of abstraction and fragmentation in visual practice as related to our neurophysiological attraction to it, speaks to Didi-Huberman's discussion of the "detail" in relation to the fragment. For Didi-Huberman, the notion of the detail operates as a pictorial signifier within the greater tradition of the rhetoric of interpretation. Pushing against this tradition, he argues for the primacy of indeterminacy found in the opaque "patch" over the sharpness and reduction which analysis traditional favours, bringing to focus ideas of density and surface. This is structured through a dialogue between the eye as a lens, as opposed to the eye as part of the body, and as such, embodied.

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[231] See Eric Kandel's argument that abstract art challenges the brain so it is more pleasurable to experience as it presents a terrain of ambiguity that requires the

[232] See *hypertext* 35.

[233] Varela et al, *The Embodied Mind: Cognitive Science and Human Experience*, xvii.

[234] C.f. *hypertext* 2 on blending theory.

[235] Abstraction, here, is seen as the material representation of a model, an absolute. It is the presentation of a part as a representation the whole, facilitating an expand … inner vision till it embraces the whole …" (Worringer, *Abstraction and Empathy*, 5).

[236] Damisch, 'Remarks on Abstraction', trans. Rosalind Krauss, *October* 127 Winter 2009, 136-140.

Can *you* tell the difference? I mean *really* tell? I see the object. I translate that seeing into vision. I encode that vision into language, and append whatever speculations and special pleadings I deem appropriate to the occasion. At this point, whatever I have written departs. It enters the historical past, perpetually absent from the present, and is only represented there in type, while the visible artifact remains in the present moment – positively there, visually available for the length of its existence regardless of its antiquity, perpetually re-created by the novelty of its experiential context. As a consequence, what I write and what I have written about diverge from the moment of the confluence and never meet again. So, where engaged writing and art can also be defined on formal or structural grounds, based on the respective position of writer and reader, they actually belong to the same time, to the same place. This shared occupancy is what *insinuates,* a point at which art remains a condition of possibility in which neither artist nor viewer has the upper hand. We might say it is a prioritization of complexity over simplicity, pattern over form, repetition over composition, feminine over masculine, curvilinear over rectilinear, and the fractal, the differential, and the chaotic over Euclidean order. To celebrate the idea of space over the idea of volume, the space before the object over the volume within it elevates concepts of externalized consciousness over constructions of alienated, interior self.

But Izi, you still need to acknowledge your own volume, your own volume in space, your body. Space only exists because bodies do. Not just as upholstered skeletons, but oozing flesh with all its sculptural contortions breathing the dizzyingly thin air on the snowy peak. Respectable locomotion of flesh. And the difference between an image and a symbol is simple: an image has a body a symbol does not. And when an image changes, it undergoes metamorphosis: body changes into body without any intervening abstraction – without, that is, the *gap* which is both freedom and alienation.[33]

brain to engage and problem-solve. C.f. Eric Kandel, *Reductionism in Art and Brain Science*, New York: Columbia University Press, 2018.

experience of the whole as a reflection of the Idea behind a given material form. In apprehending a disassociated part, an abstraction, one is forced "to

> As if the visible world were a surface. As if paint had no density. As if a flow of pigment had the legitimacy of a topographical projection: such is the hidden ideal underlying the notion of technical skill, which requires that the hand itself be turned into a 'Faithful Eye'; that is to say an organ independent of a human subject. […] As if that eye were 'pure' – and organ lacking drives or desires. And as if the 'purity' of its gaze entailed the act of observing everything, capturing everything, and retracing everything, or, to put it another way, *detailing*, describing, and depicting the visible, making of it an aspectual sum-total with no residue.[237]

Didi-Huberman's discussion of the detail leads him to the space between surface and density that Damisch also occupies. He breaks down a traditional model of painting and depiction in favour of approaching the concept of representation as fluid and mobile. He builds a tension between, on the one hand, the detail and fragment as a disembodied sign or symbol with a representational function, and on the other, the 'patch' that possesses power and rawness which "confronts us with material opacity" carrying a charge that we ground and from which we derive meaning.[238] He develops these ideas in relation to the body, positioning ideas of the 'patch' of paint in line with the notion of a symptom, embodied and fetishized. This positions painting as "…a material cause, and matter in the sense Aristotle gave it, namely something which does not correspond to a logic of contraries but rather to a logic of desire and protension …".[239]

This is an embodied approach, and expresses the idea of the "patch" as distinct from the detail – where the detail is something that can be located, recognized and named, whereas the "patch" resists the same. Instead, "…the patch *stares you in the face*, mostly in the foreground of the picture, frontally, indiscreetly; but for all that it does not let itself be identified or enclosed: once uncovered it remains problematic."[240] Didi-Huberman argues that we seek out the "patch" as it is an intrusion to a greater logic, as this research explores; an intrusion and disruption to which cognitive science indicates we are neurophysiologically attracted. Within the field of embodied cognition, our relationship to abstraction stipulates affective inference is a vital impulse, pointing to how we generate meaning.

34 The cognitively penetrable model of perception offers a position driven by empirical and conceptual arguments that aim to show that perception is subject to various higher-order top-down influences.[241] From this perspective, the illusion of sight is very compelling, but it is porous and affected by transient internal states, such as wishes, expectations and beliefs.[242] That is, what we see – the process of transforming visual input from the retina – is influenced by other processes generated in the mind.[243] This perspective is based on studies such as attention/shift interpretation that point to active cognitive interference with perception, where the mind sees where its attention is directed.[244] Here cognition effects perception where attention mediates between cognition and observation.[245] This top-down approach is also

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[237] Didi-Huberman, "Vermeer – the detail and the patch ," 144, 147.

[238] Ibid, 153. Didi-Huberman further discusses the patch as an accident, "a sovereign product of chance." (Ibid, 154). This is interesting in connection to Rebecca

[239] Didi-Huberman, "Vermeer – the detail and the patch ," 160.

[240] Ibid, 165.

[241] Accounts of perception are roughly divided between internalists and externalists, the former placing perception and knowledge of objects as aspects of the which include proprioception, or the internal experience of the body, including where our limbs are, if we are hungry, whether we are sitting, etc.; and exteroception Philosophy of perception is mainly about exteroception, exploring how we can gain knowledge from perceptual data. Traditional views of human visual perception relationship to what is being perceived, without direct influence from higher level cognitive states. This is a sensory, bottom-up model, where data is translated that most aspects of visual processing are cognitively impenetrable. Cognitive impenetrability implies that basic sensory perception is processed without the ability *of Mind an Essay on Faculty Psychology*, Cambridge: MIT Press, 1983). This model has largely been challenged as it does not seem to be able to account for the *The Mind and its Depths*, Boston: Harvard University Press, 1993; Ned Block, "Consciousness, accessibility, and the mesh between psychology and neuroscience. *Behav. Brain Sci.* 39:e229 (2015).

[242] Ned Block summarizes this position as the following: "First, the minimal constitutive supervenience base for perceptual experience is the brain and does Helmholtz) much of perceptual experience can be understood in abstraction from such causes." Ned Block, "Review of Alva Noë: *Action in Perception," Journal of*

[243] C.f. Bayesian system of weighing sensory input (bottom-up) and prior expectations (top-down) as presented in D.C. Knill, & A. Pouget, "The Bayesian brain: the

[244] A rudimentary example is the Necker Cube which is perceived one way or another, depending on what you are primed to see. See also William James on

[245] C.f. Hubel DH and Wiesel TN., *Brain and Visual Perception: The Story of a 25-Year Collaboration*, New York: Oxford University Press, 2005. Their research showed that

Isaac never accepted the limits of his body, and there is no reason that he should have. But he never accepted, either, the limits of his ability to do anything about that resistance to his own form. There is only so much that can be done to create fertile ground where none exists. Harmony may emanate from the unity of nature or the nous, but harmony cannot be imposed on those who are not ready to receive it. Electromagnetism may trace a rose in iron filings, but it is powerless to induce order into sawdust. The forces of fertility have no power in certain situations, and it is the response to that powerlessness that the true roots of the tension between fecundity and order, imagination and will, emerge.

About the connection between the body and the brain: its all a matter of having a desirable model in the cortex. For the noble, self-conception is everything. For as conception is, so the fellow is. You are in the flesh, and so is the rest of you. And in that manner, a fellow really is the artist of himself. Body and face are secretly painted by what's inside, working through the cortex and brain ventricles three and four, which direct the flow of vital energy all over. As far as the laws of mathematics refer to reality, they are not certain. And, really, as far as they are certain, they do not refer to reality. Honestly Izi, it's one thing to believe, on theoretical evidence, that we live in the prison-house of language. It is quite another to know it, to actually peek into the slippery emptiness as the world explodes around you. If you could allow yourself to celebrate escape from linguistic control by flowing out, filling that rippling void with meaningful light, laughter, and a gorgeous profusion. So you can feel your own beating pulse sliding on tiny neural lapses.[34] Not in any kind of obvious way, but so you can feel it in

Fortnum's work on not knowing. C.f. *On Not Knowing: How Artists Think*, ed. Elizabeth Fischer and Rebecca Fortnum, 2014.

mind, the latter maintaining that perceptual data constitute real aspects of the world, external to the mind. Within this debate are categories of perception which has to do with sensory perception, and its relationship to the world. How does perceptual (sensory) data relate to knowledge about the world? stipulate that processing and understanding basic visual properties (such as lightness/darkness, spatial layout, depth, etc.) derive from an input-output according to relatively fixed rules not affected by cognitive processing. In this model, perception is dependent on action in a purely instrumental way, so to consciously and purposefully modulate. It is "informationally encapsulated, domain specific and its operation is mandatory." (Fodor, J. A., *The Modularity* rich and continuous visual experience generated from the disjointed and fragmented data we receive through our sensory organs. C.f Richard Wollheim, *Behav. Brain Sci.* 30, (2007) 481–548; Firestone, C., and Scholl, B. J., "Cognition does not affect perception: evaluating the evidence for "top-down" effects,"

not include the rest of the body. Second, although motor outputs and motor output instructions affect perceptual experience (as has been known since
Philosophy 102:259-272 (2005).
role of uncertainty in neural coding and computation," *Trends in Neuroscience*, 27, 712-719 Nov 2005.
attention.
there is a topographical map in the visual cortex where visual cortical neurons encode image features to help us build our perception of the world around us.

apparent in amodal perception, which has to do with the representation of those parts of perceived objects from which we get no sensory stimulation. They are presentations of incomplete forms triggering us to complete a perceptual field.[246] When we see an object, we also represent those parts of it that are not visible, we complete the form following the visual suggestion.[247]

Bonnard exploited this in a number of his paintings, allowing what must be to commingle with what is present. Not only is there aggressive cropping that severs what must necessarily be filled in to complete the scene, but what is presented is not fully there, demanding or forcing the viewer into active complicity. This quality is described by Howard Hodgkins as *dematerialized*, so that what is staged is a terrain of loss, presenting a possibility for adaptation and imagination to fill in gaps, leading to:[248]

> ... the most extraordinary sense of reality [sic] because of the fact that what you see has not been finally made into the sort of tight image of realism that we've been led to expect in all sorts of ways, but has the kind of glancing, slightly dematerialised quality that one does actually see in reality.[249]

Amodal perception is also tactile. If we hold a bowl, we have the sense of its entirety even though we are only touching it at 5 points with our fingers, or holding only a portion with our hand. There are countless other examples that also explore cross-modal perception, distributed attention, blind spots, peripheral vision, occlusion, etc. What is important is that this position is a top-down theory of perception – maintaining that it is our minds that create coherence by filling the gap (through a process of visualizing or imagining).

The idea of filling a gap or completing an absence is explored by Derrida in relation to the draftman's contour line which depicts through absence. In his discussion of *"the trait of the trace"* in *Memoires of the Blind*, Derrida presents the condition of experiencing the visible as tightly linked to the invisible:

> A tracing, an outline, cannot be seen. One should in fact not see it …insofar as all the colored thickness that it retains tends to wear itself out so as to mark the single edge of a contour: between the inside and the outside of a figure. Once this limit is reached, there is nothing more to see, not even black and white, not even figure/form, and this is the *trait*, this is the line itself. […] This limit is never presently reached, but drawing always signals toward this inaccessibility, toward the threshold where only the surrounding of the *trait* appear – that which the *trait* spaces by delimiting and which thus does not belong to the *trait*.[250]

Derrida continues to suggest that the visible produces blindness, in the same way the mark produces absence. And this absence and blindness are ultimately what constitutes insight. This is a reference to visualizing that occurs in absence of something external, and this visualizing is what carries real meaning.

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[246] C.f. Kosslyn S., M., Behrmann M., Jeannerod M., "The cognitive neuroscience of mental imagery," *Neuropsychologia* 33, 1335–1344 (1995).

[247] C.f. Kurt Koffka, "Perception: An Introduction to Gestalt Theory," *Psychological Bulletin*, *19*, 1922, 531-585; C.f. also P.F. Strawson on Kant: "imagination is a
University Press, 1982; Famous examples in cognitive science are the Kanizsa triangle and the Necker Cube. C.f. Donald D. Hoffman, *Visual Intelligence*, New

[248] C.f. Alva Noë's discussion of presence in absence in *Action in Perception*, as Ned Block articulates, "the phenomenology of the back of an apple that one
of multimodal or amodal spatial imagery, and that that imagery may in part be motor imagery – since its brain basis appears to overlap with motor guidance

[249] Howard Hodgkin and David Sylvester, *Interviewed by David Sylvester*, Howard Hodgkin Archive, 1982. Hodgkin is referring specifically to Degas though within

[250] Derrida, *Memoires of the Blind*, 54.

your stomach. And the intonation is wavering, too, with the pulse in the finger on an amplified string, the bodily rhetoric of tiny increments, necessary imperfections, and contingent community. That's something you can *depend* on.

The flies wait hungrily in the air, sheets of flies that make a noise like the tearing of tissue paper.

They sat on the grass looking at the sky for a while as the warm air circled around them. Saskia found these moments between them to be especially interesting not so much for the physical properties of palpable immateriality, but for the challenge offered to the senses. This included the sense of wonder. Silence itself, by its very nature, is self-ruining and fragmentary. Like the clouds in the sky above them, the haptic silence flees in haste over the visible horizons to their world of vapour that dies before their eyes. Not a trace of its provisional existence remains.

Do you remember Ben's research? That group of astonished researchers he gathered to study the atmosphere? What happened when those amazed researchers began to realize that the atmosphere was unbelievably alive for all our notions of its emptiness? Another world, filled with an ever moving, airy regiment. They found ladybugs at 6000 feet during the daytime, striped cucumber beetles at 3000 feet during the night. They collected three scorpion flies at 5000 feet, 31 fruit flies between 2000 and 3000, a fungus gnat at 7000 and another at 10,000 feet. And at the highest elevation at which any specimen had yet been taken, a lone ballooning spider was floating on its filaments, its body borne up on unseen currents. They discovered evidence of aerial plankton, an ocean over our heads.

One strategy Saskia had for coping with Isaac was propositional. Reticence between a string of propositions until Isaac felt a desperate weight, which forced him to speak.

Its called the *sheer* Isaac said. It's a good word. How often is terminology beautiful and expressive and still matter-of-fact? You, the names of things, the names of tools, the names of colours? And the name Ben gave to that sea of invisible aerial plankton. *Sheer.*

necessary ingredient of perception itself" in "Imagination and Perception," Ralph Charles Sutherland Walker (ed.), *Kant on Pure Reason*, Oxford: Oxford York: Norton, 1998.

doesn't see but senses nonetheless, or the cat that one sees – all of it – moving behind a picket fence. I think that presence in absence may be a matter systems in the dorsal visual system." Ned Block, "Review of Alva Noë: *Action in Perception*," 263.

a more generalized discussion about "dematerialization" which is directly relevant to Bonnard.

Although ideas of the optical are theoretically aligned with the eye as the organ of visual perception, it seems coherent perceptual meaning is actually phenomenally similar to visualizing.[251] As Gombrich observed, "... seeing is never just registering."[252] From this perspective, there is no direct experience of reality – our senses deliver fragmented. often disjointed data, which is processed by the brain and presented as coherent reality, and which overlap and interfere with one another.[253] At play is an interdependent active process, where considerations of imagining, recollecting and believing impact the parameters of selection, decoding, and anticipation within the visual perceptual system.[254]

The main debate between these two models (cognitive penetrability & cognitive impenetrability) is one Wittgenstein intimated in his conceptualization of what it means to see as opposed to to interpret. For Wittgenstein, inference-making is an action, which is not to say we actively produce an interpretation, but rather that our seeing something one way or another (as a duck or as a rabbit) is an actual expression of our visual experience based on the activity of inference-making.

35 The relationship between recollection and knowledge is an ancient one, as is the connection between vision and knowledge. As Michael Newman notes in 'Derrida and the Scene of Drawing,' "That which springs forth out of forgetfulness would be nothing less than *aletheia*, the truth of the eyes." These same eyes would "have to be blind to witness it. Could a certain *anamnesis* be performed through the sacrifice of sight?"[255] Recollection as a reconstitutive activity that occurs in the process of perception involves the imagination. To understand how fundamental this is to human nature, it is useful to consider an Aristotelian reading of mimesis as a process that involves a level of invention, re-enactment, inference, and recollection. What is unique about Aristotle's conception of mimesis is its relationship to learning (mathesis), to coming to understand, which turns out to be central to how the brain operates. So looking at this concept is useful not only because it is part of art (that is representing something visually), but also because it is a conduit to situating insight in relation to vision.

For Aristotle, mimesis is the mental process where one says 'this is that' *(touto ekeino).* Through mimesis, the artist points out the relation and similarities between different things in order for the viewer to see and understand what they did not previously see. And for Aristotle, "Mimesis is innate in human beings from childhood." Mimesis is not only an act of connection, where "we enjoy looking at most exact portrayals of things" because we can connect it to the original, but it is also an act of inference. Mimesis serves to replace the original by way of its devices, namely, the artifices used to imitate. Providing the opportunity for inference, presents a terrain for the brain to exercise its desire to connect, to learn, to understand – and in this way mimesis provides the condition to produce pleasure. Nevertheless, Aristotle's presentation of mimesis is one which subverts its own devices. That is, mimesis is seen as both the act of imitating as well as the product of that imitation.[256] Thus, a given picture will "not produce its pleasure *qua* instance of *mimesis*," but rather by way of its "technical finish or colour or for some such other reason," themselves functions of mimesis.[257]

Mimesis then, is seen not only as the imitative devices which represent a given object or situation, but rather as the

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[251] C.f. George Berkeley's *Theory of Vision*. The current consensus among cognitive neuroscientists maintain that rather than the typical 5 senses, there are to one another), equilibrioception (the sense of linear acceleration and head position), thermoception (the sense of heat and cold) and nociception (the sense of

[252] E.H. Gombrich, *Art and Illusion*, 298.

[253] C.f. Donald Hoffman, "The Case Against Reality," *The Atlantic*, April 25, 2016; "The Evolutionary Argument Against Reality," Interview in *Quanta Magazine*, April *Phenomenology and Mind Online Journal*, 2013, 292-313.

[254] Recent studies by Firestone and Scholl point out some problems in experiments that are used as empirical evidence for cognitive penetrability: "Thus, activation do reflect a direct effect of feedback processing on perception, for example in unconscious inferences, this process is not under conscious control. Using neural Firestone and B. Scholl, "Cognition does not affect perception: Evaluating the evidence for "top-down" effects," *Behavioral and Brain Sciences*, 1:1-77, July 2015).

[255] Michael Newman, "Derrida and the Scene of Drawing," *Research in Phenomenology*, vol.24, fall 1994, 3.

[256] There is a compelling parallel here to Joseph Kosuth's presentation of art as a tautology in his essay *Art and Philosophy*, where he states that art is its own

[257] Aristotle, *Poetics*, 1448b-1449a.

Saskia had succeeded. And now Isaac was lost in his own train of thought.

Aristotle claimed that everything in the sublunary world was, is and forever would remain in a permanent state of flux. Four elements – air, earth, fire and water – paired with heat and cold, dryness and moisture – which were exhaled from the physical materials of the earth. The earth, for Aristotle, as much a body as ours, with aerial plankton in its hair, as dense as the sea at its feet. What is strange about the Ancient Greek conception of the world is the understanding of memory. *Anamnesis.* For Homer, the axis of time was vertical. There was no future in in the ancient world. The future was the past remembered. Not in the sense of how we think about memory, or mis-memory. But *real* remembering. *Recollecting.*[35] Sort of how it is for children, where childhood is timeless. It's always the present. Everything is in the present tense. Of course they have memories. Of course, time shifts a little for them and Christmas comes round in the end. But they don't feel it. Today is what they feel, and when they say *when I grow up* there is always an edge of disbelief – how could they ever be other than what they are? And then, perhaps later, when they become more in touch with the world, they might be told *you have a future.* Even if they believed it, what does their little future, whatever that was, have to do with the real thing, whatever that is?

But there is a vulnerability of memory as a territory, he continued. The elements of cosmic geography in the ancient world were focused upon that which is constant and unconditioned: *upon truth.* And with this is the hope of grasping the unchanging principles of life. Homer speaks to us with a strong emotional appeal, but we are quick to forget how radically the experience of Homer differs from our own. The rise of thinking among the Greeks was nothing less than an *evolution.* They discovered the human mind, mapping out new subjects for discussion – science, philosophy, art. Art and science, after all, were both products of the human imagination; both were ways of representing and giving order to the world. This drama, man's gradual understanding of himself, is traced

between 22-33 senses through which we experience the world, including proprioception (the sense of how our body parts are positioned in space relative pain). C.f. Barry C Smith, "The Senses and the Multisenses," *Edge*, June 2019.

21, 2016. See also on the multi-modal nature of sensory experience. C.f. Barry Smith, "The Nature of Sensory Experience: the case of taste and tasting,"

that is registered via an electrode or MRI scanner might be not always necessary or even not directly related to perception. Even when neuroimaging data data or behavioral data can be very useful in supporting perceptual changes by controlled top-down processes, however, it is not conclusive by itself." (C.

definition.

process of receiving this imitation which requires an act of inference (which in turn produces pleasure as we come to understand something).[258] In this way, mimesis becomes a mental act of connection and inference that is grounded in the body by way of re- enactment. That is, mimesis is more than what Plato asserts to be a mere act of copying, without any real knowledge of the act or object being copied.[259] Rather, Aristotle implies that by engaging in mimesis we can acquire embodied knowledge despite not having prior direct knowledge.[260] Its imitative quality is secondary, submitting to its primary function of re-enactment.[261] It becomes both an act and experience of representation and re-enactment (réactualisation).

Yet mimesis needs to be understood as both the cause and the product of art, and the pleasure it produces is linked to the act of learning *(mathesis).* That is, our pleasure in art lies in our natural desire to understand (as natural and innate as hunger). Satiating this desire is pleasurable; as eating satisfies hunger, so understanding "implies a restoration to a natural state." And this understanding is the act of inference derived from mimesis. "For the pleasure is not just pleasure in the object; instead there is an inference that 'This is that', so that the result is our coming to understand something."[262] This coming to understand something through inference by way of re-enactment points to the very re-combinatory process involved in metaphor which is a function of our innate faculty of imagination. Understood in this way, the roots of meaning seem necessarily both embodied and cognitive.[263]

As re-enactment is understood as patterned on a model, mimesis becomes a re-doing of what was primarily done, that is, a sort of "recall" of primary schemata. Mimesis, then, can be understood as repetition and imitation leading to representation, which in turn leads to re-enactment. And it is the experience of re-enactment that is embodied, and that brings about learning.[264] This is important when viewed next to the enactive theories of perception. These theories hold, and what embodied visual perception grounds, is that imagery (recalled or otherwise) is constituted by a sort of enactment of the perceptual acts that *would* be carried out *if one were actually perceiving whatever is being imagined.*[265] This position regards imagery not as a form of representation (pictorial, descriptive, etc.) but as a form of *action.* In this sense, enactive theory may be able to account for the intentionality of imagery.[266]

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[258] " . . . most people feel this pleasure . . . because in looking at them [pictures, re-enacted situations, etc.] they come to understand something and can infer

[259] For Plato, the act of imitation itself is the key element. This however generates a problem; if we no longer have access to any conception of the absolute, then is a static, one-dimensional process of imitation and repetition which is indeed negative as it serves to further obfuscate the possibility of accessing the Idea behind through variation. This can be viewed in relation to Cicero's definition of 'induction,' where a part is seen as progressing towards a definite goal, and continuity University Press, 1996.

[260] Aristotle's belief that mimesis can enable this sort of realization requires the acknowledgement that there is a basic element of 'truth,' that there is the possibility to the metaphysical world and compares it to Platonic Form. So Aristotle's exploration of 'participation and resemblance' as a version of mimesis is viewed in

[261] The power of artifice perceived as natural occupies an ambivalent position where the unfamiliar nature of the artifice is received by the audience as familiar. This notion of estrangement *(ostranyeniye)* in language. The tension involved in the more conceptual mimesis is in perceiving or experiencing what must be a fantasy it creates a 'vision' of the object instead of serving as a means for knowing it." (Viktor Shklovsky,"Art as Technique," *Theory of Prose*, trans. Benjamin Sher, Illinois

[262] Aristotle, *Rhetoric*, 1371a-1371b.

[263] C.f. Damisch cites Dubuffet's belief that paintings should not "be looked at passively, not embraced all at once by an observer's immediate gaze, but relived "Dubuffet, or the Reading of the World," trans. Kent Minturn and Priya Wadhera, *Art de France* 2 (1962): 337–346.

[264] The idea of knowledge springing from memory or recall located in the imagination, is an ancient one indeed, embedded in notions of truth, insight, and real, of the motif), … The peaches are contemplated rather than observed, and painting then becomes a means of extracting from nature a meaning and a value that relationship of vision to blindness to inner vision.

[265] C.f. Laeng *et al.*, "Scrutinizing visual images: The role of gaze in mental imagery and memory Article," *Cognition*, May 2014 131(2): 263–283.

[266] It is important to note the unresolved and controversial question of whether mental representations are imagistic. There is also an interesting connection here states, or "somatic markers" in relation to emotional correlates. C.f. Antonio Damasio, *Somatic Markers and the Guidance of Behaviour*, New York: Oxford University Vol. 11, No. 5, 197-203.

in art, in the history of the image. And our cognizance of ourselves, of our intellect, was not *invented* as a man would invent a tool. In a certain sense, it actually did exist before it was discovered, only not in the same form, not *qua* intellect. But in this assertion of the discovery of the intellect, is also the assertion that the *discovery* was necessary for the intellect to come into existence. Or, to put it grammatically: the intellect is not only an affective, but also an *effective* object. The self does not come into being except through our comprehension of it.

In a way. But if you reframe the idea in psychological and neuroscientific terms, it becomes a problem of *distorted cognition.* There is a collision between the *inner neural realm* and reality. This is the *ignition point.* All this hooks us because of how evolution shaped our psychology. Our ancestors survived, and bred, because they learnt to read people. And what makes us most curious about a person is unexpected change. It forces us to ask ourselves a question on which our survival would once have depended: *Who,* we want to know, *is the person?* And in asking that, we are asking about ourselves. It is the same with images. We look at something and feel our way around it. We want to find its *sacred flaw* – the thing that's irrational about it. Then you imagine what *origin damage* might have caused it. This is a moment where *confirmation bias* reinforces a misguided belief and turns it into a *neural model.* And all the while, we remain conscious of the two levels on which cognitive scientists say we exist. Not just our *top level* or inner voice, which is what we tell ourselves about ourselves, but also what lies

what each thing is, can say, for instance, 'This man in the picture is so-and-so.'" (Aristotle, *Poetics*, 1448b-1449a).
mimesis is just imitation. In fact, given Plato's theory of Forms, mimesis becomes an imitation of an imitation, an imitation twice removed. Here mimesis
a given form. Aristotle however rehabilitates this conception of mimesis by way of aesthetics. This process of connecting and inference implies a continuity
serves to establish the mental process of linking like with like. C.f. Gregory Nagy, *Poetry as Performance: Homer and Beyond*, Cambridge: Cambridge

of *mathesis* through *mimesis*. This is understood in Aristotle's Metaphysics where he discusses the Pythogorean belief in the relation of the sensible world
relation to Platonic Form.
is interesting in connection with both Freud's notion of the uncanny *(unheimlich)* as something familiar perceived as unfamiliar, and Viktor Shklovsky's
but is, at the same time, a reality. Shklovsky's idea of the capacity to see emerges from defamiliarizations which create "a special perception of the object –
State University: Dalkey Archive Press, 1991,18).

in its elaboration, remade by thought and I dare say re-enacted . . . He feels all the painter's gestures reproducing themselves in him." Hubert Damisch,

profound vision. Bonnard was "looking, taking notes, reflecting and dreaming (by which he means, perhaps, allowing his imagination to take possession
goes beyond representation." (Sara Whitfield, *Bonnard*, New York: Harry N. Abrams, 1998, 18). This idea of a meaning beyond representation points to the

to Damasio's notion of the 'as-if body loop' which refers to the brain's motor resonance in relation to emotions. Damasio located neural mappings of body
Press, 1991. See also, Freedberg, D. and Gallese, V. 2007. "Motion, Emotion and Empathy in Aesthetic Experience", *Trends in Cognitive Science*, May 2007,

36 The emphasis on raw, visceral, and tangible materiality is fundamental to Damisch's engagement with painting, looking toward elemental relationships between figure and ground, paint and its support. These elements of painting frame visual experience corporeally. In this sense, Damisch extends Merleau-Ponty's phenomenology, exploring the relationship of paint to body by way of interweaving painting and canvas. Damisch's recognition of the failings of descriptive possibilities points to the fact that the elements of painting function on a different level, pushing description to "encounter muteness" in the face of felt sense.[267] Ideas of muteness and blindness in relation to sense and meaning is the territory of insight. As descriptive possibilities fall mute, the materiality of surface takes voice, placing the act of painting as elemental to perception, and whose production presents a seductive model for meaning making.

[267] Bois et al, "A Conversation with Hubert Damisch," 14.

beneath.[36] *A stewing night ocean of feelings, urges and broken memories in which competing urges engage in a constant struggle for control.* Undifferentiated vastness, he trailed off.

The weight of these colossal pillars, the airlessness of these lofty intricate spaces, is felt as one might feel the bony structure, the spongy and capillary matter, of one's own skull and brain. It's the culmination of separation. But for our present age, which prefers the sign to the thing signified, the copy to the original, representation to reality, appearance to essence, truth is considered profane. Only illusion is sacred. Sacredness is, in fact, held to be enhanced in proportion as truth decreases and illusion increases, so that the highest degree of illusion comes to be the highest degree of sacredness. And here we are, somewhere between the sacred and profane, *in medias res.*

Appendix

1 a_poria: ***an irresolvable internal contradiction***

Aporia begins as a series of 30 or so drawings of clouds in red chalk on small postcards (about 10 x 15 cm). Suggestive of quattrocento cartoons and the inception of formalized perspective within the practice of painting, this imagery points to ideas around measuring – how to figure the unfigurable. Damisch's discussion of the cloud as symbols of the celestial/immaterial – atmospheric form as reference to intangibility – as standing outside spatial organization, situate traditional discussions of visual perception in art.[269] Here, the *possibility* of imagery is important.

I subjected these images to a range of processes – manual, digital, and mechanical – to interrogate the relationship between various forms of feedback. By feedback here, I mean a process-based approach that initiates a systematic to-and-fro dialogue between the actual mechanics of a particular process and the material generated as a result of the process. For example, beginning with warm, gestural studies in brick conté, I exposed these tiny postcard-sized images to different technical/mechanical processes ranging from photocopies to digital transfers to various printing techniques. Each process initiates a sort of dialogue between the form of the work and the content it seeks to explore, to create a material terrain of looping and folding in on itself, where processes self-refer and intertwine, blurring the haptic, the mechanical and the digital as a material manifestation of the dialogue between internal and external, body and machine.[270] Moving between different physical engagements serves to blur any specific relationship between viewing and making that might normally contain a process. This resulted in a transformation of these small studies into a series of more human-scale steel plates (80 x 100cm).[271] These plates were in turn subjected to degrees of repetition, corrosion, inversion and manipulation, using a painterly method within mechanical means. The effect is a manipulation of the steel material into a range of warm and cold tactility The material itself, due to its inherent sheen, lends itself to aspects of vision in relation to light, distance, angle etc. of the viewer's position and gaze.[272]

From these I engaged various experiments, pulling and rubbing prints, with a deliberate unconventional use (or misuse) of the mechanical processes enlisted, pushing back and forth, wet and dry, colour over colour in different degrees of viscosity and wash. The method of paint application in relation to ground references a clear two-dimensionality, while the pulling and rubbing of the layers, produces an image that hesitates to emerge – withdrawing, concealing and re-emerging. Implicit in the process is reference to the physicality of time, not only in the mechanics of layering, but in the dialogue between inscription and erasure.[273] This also speaks to ideas of slippage, where there is human intervention in what would be otherwise confined in uniform mechanical reproduction. However, though the semi-figurative imagery suggests a potential for tangible form, its treatment is one of material truth rather than of depiction.[274] That is, the intention is for the

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[268] C.f. Jacques Derrida, *Aporias*, Stanford: Stanford University Press 1993; See also Nicholas Rescher, *Aporetics: Rational Deliberation in the Face of Inconsistency*, Pittsburgh PA: University of Pittsburgh Press 2009.

[269] C.f. Damisch, *The Origin of Perspective*, trans. John Goodman, Boston: MIT Press, 1995. See also *text*, 59.

[270] C.f. *hypertext* 1; *subtext* 194, 195.

[271] C.f. *subtext* 188 on body scaling.

[272] C.f. *hypertext* 24, 25, *subtext* 57, 59, 265 role of the gaze in imagery.

[273] C.f. *hypertext* 29 on embodied cognition's schema *Time as Space; hypertext* 32 on ideas of temporalities and micro-consciousnesses.

[274] C.f. *text* 29, 41; *hypertext* 21, 24, 26; *subtext* 208.

[1_a_i] aporia series, steel plate with rust, 80 x 100 cm, 2015

material substance of the work to convey a sense, rather than the imagery itself to function as a vehicle of depiction.[275] Still there is a looped dialogue engaged between form, process, and content.[276] In this way, the idea of internal and external as separate is challenged materially, where the haptic residue of the process becomes the content itself.

The final piece in this series is a rubbing of the plates in brick red chalk. This is larger than body-sized (200 x 350 cm) on thin, unprimed, unstretched canvas. The result arrives at a trembling surface, like skin – intimating organs of vision and touch.[277] The restlessness of the marks sit within the dialogue of more weighty gestural marks that dominate so much of painting. Though this canvas is the result of rubbings, there is a suggestion of rubbing out, of erasure – as well as of smearing, and attempting to clean by rubbing or scrubbing. That is, there is a feeling of layered tracings, like a palimpsest of markings, where gestures over time accumulate to form a density – vying with a sense of erased marks, or with layers of residue from cleaning smudges over time, like a painter's well used palette where traces of years of paint and colour might embed themselves in the grain of the glass.[278] In this, there is a deliberate intimation of the liminal, indicating a residue that intends to convey a sense of something.

The allusion to the palimpsest references language, which the rubbings and markings themselves suggest, like wax paper rubbings of the Rosetta Stone.[279] The sense of inscribed language and the idea of a constellation of erased graphic marks intends to give the sense of a map or landscape, or something in between.[280] The horizontal dimension, installed as a sort of panorama, suggests a potential narrative to the sequence of latent forms, further intimating time and language.[281] And the title invites a studied gaze, the meditation of divination – *scrying* – where the viewer is invited to step in and disrupt or engage with the terrain, in an attempt to *see*.[282]

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[275] C.f. *hypertext* 27.

[276] C.f. *hypertext* 1.

[277] C.f. *hypertext* 16 on the relationship between eye and skin.

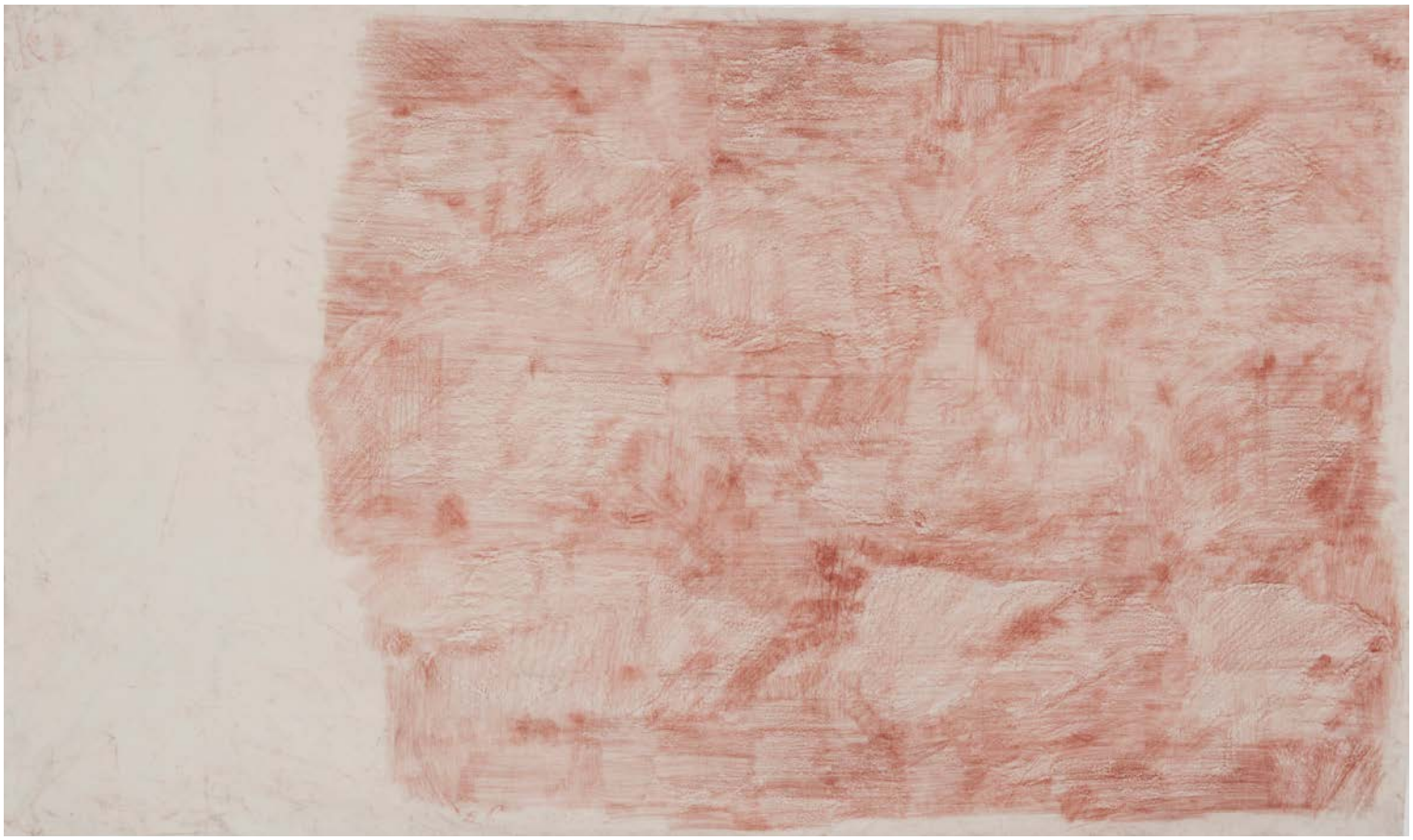
[278] It may be worth noting that during this period I engaged in creating a short experimental video involving small pencil and ink drawings of clouds, erased and re-inscribed, documented and edited in stop-animation loop. The sound accompanying the video is of the breath – breathing, sighs, sneezes, etc. The video was displayed as an interactive installation at the RCA Biennale (*Why Would I Lie?*, Dyson Gallery, 2016) using arduino sensors, which triggers the video to respond/react to the viewer's position, the image becoming more or less blurred and pixulated in response to the viewer's movement, and the breath becoming louder/softer and/or interrupted by coughs, sighs, sneezes etc. depending on the nature of the motion by the viewer. This experimentation attempts to play with ideas of conceptual blending, cross-sensory and multi-modal networking, and the integration of analogue and digital modalities within the use of the gesture. These were tiny experiments, but there is inspiration from the work of William Kentridge, Stan Brackage and Gregory Markopoulos, elements of which have touched on my painting practice which remains dominant in my research practice.

[279] There is reference here to the work of Mary Kelly, specifically her Rosetta Stone rubbing from prototypes for *Post-Partum Document VI*, Mary Kelly, 1978. I also draw from the work of Cy Twombly though not in the sense of graffiti, but rather in reference to the performance of writing, or the nature of appropriating annotations as painterly marks.

[280] C.f. *subtext* 151 on touch and topography.

[281] C.f. *hypertext* 19 on Bonnard's drawing as a material link between time and space.

[282] This indicates a dialogue between internal and external, where space and time are internalized to point to a state of reverie.



[1_a_ii] aporia series, *scrying shroud*, chalk rubbing on canvas, 200 x 350cm, 2016

1 b_agnosia: ***the inability to recognize objects by looking at them***

Agnosia builds and develops the reference to quattrocento drawings of atmospheric imagery, referencing as well the spatial suspension of early pre-renaissance landscape painting.[283] From postcard-sized scale I shift to A3 or so sized studies which are rendered in cross-hatched sketches in India Ink on glassine mounted on birch plywood or canvas, built up through layers of rubbing, erasing, redrawing and varnishing. Glassine is a thin, smooth, glossy paper that is semi-transparent, and depending on how it is used, can become either clear or opaque. Though it is water and grease resistant, when soaked, it can become an almost transparent pulp. When it is then glued and mounted to a flat surface it becomes wedded to it, like a layer of skin. Its relationship to the mounted surface has to do with how it's mounted – how viscous the glue used to wet and mould the paper, and how attentively its surface is massaged to ensure no foreign particles or air bubbles are trapped, allowing it to completely bond with the surface below. Then the drawing begins, built up between layers of glue of various viscosities, each layer manipulated by touch, pushing the surface to remove any unwanted folds or particles, and then as the glue and varnish dry, gently brushing across the marks the brush leaves in application. As the brush marks are removed by hand, the finger itself leaves traces in the drying glue, which then become the tooth to which the ink adheres, allowing the touch itself to serve as armature for the image the surface holds. In this way, ideas around surface and depth are referenced through an engagement with touch, and with flatness.[284] The final layer of glue and varnish render the surfaces of the boards shiny, the glassine now one with the board, a membrane-like skin.

The ambiguous imagery too takes on a sense of skin or folds of flesh. These surfaces and spatialities are important in that they reference the body directly, suggesting skin, touch, and their relationship to the eye, which is intended to be conveyed through the actual material.[285] The work continues to seek to transfer sensation, one that is not only sensed through the suggestive imagery, but through the material itself; sense as both sensory and meaning, as far as one is distinct from the other as this research explores.

These images are then scanned, extracting small corners and isolated areas to transform and render into large screens for print as a means to re-compile and re-formulate similar imagery after it has succumbed to process.[286] This speaks to post-medium practice, where painting and drawing is diversified by expanded image technologies, notions of networks, and channels of information transmission.[287] The zooming in and out results in fragmented, abstracted forms – details – becoming less and less recognizable and occupying a dialogue between content as form.[288] The imagery is deliberately abstracted from its source, and repeated as it is transferred to various surfaces in experimentation, looking to locate the play of the eye in vision

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[283] C.f. *subtext* 34, 56, 160, 190, 208, 215.

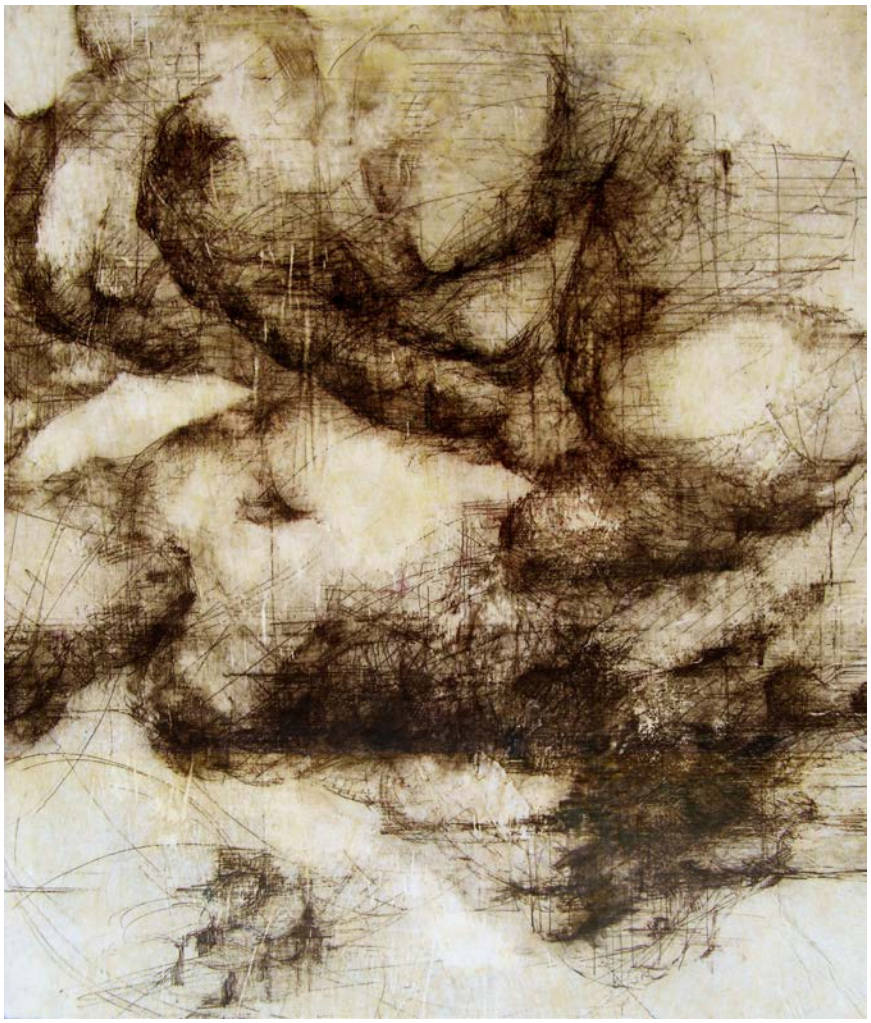
[284] C.f. *hypertext* 22 on flatness; *hypertext* 30 on depth.

[285] C.f. *hypertext* 16 on the relationship between eye and skin, hypertext 26 on the relationship between the felt-sense and the optic.

[286] There is oblique reference to the work of Ned Vena and Wade Guyton in the self-referentiality of surfaces representing their own means of production, specifically the use of technology – digital and mechanical means of reproduction.

[287] C.f. Joselit, *After Art*, Princeton: Princeton University Press, 2012. I also draw on Frank Stella's ideas of spatial expansion of formalist abstraction as presented in *Working Space* (Frank Stella, *Working Space*, Charles Elliot Norton Lectures, Cambridge: Harvard University Press, 1986).

[288] C.f. *hypertext* 2; *hypertext* 33 on ideas of rupture and dissonance where points of instability invite viewer complicity.



[1_b_i] agnosia series, ink on glassine on birch plywood, 45 x 65 cm, 2016

(binocular/monocular, saccades, etc.)[289] in exploring ideas of near and far, closeness and distance, light and density – and engaging a dialogue between gestural and mechanical line.[290] The density that is built by superimposing traces and lines over lines, builds on the sense of a palimpsest and the relationship of the mark to the smudge that is of central interest and concern, specifically in relation to language and the mark. The paint application is flat, smooth, and controlled. Ideas of flatness draw from ideas present not only in the relationship of surface to depth, but from questions of orientation – the horizontal and the vertical – that is, the relationship of the making of the large paper painting/prints on a flatbed to its vertical orientation when hung on a wall. There is reference here to Leo Steinberg's idea of the "flatbed picture plane," in reference to Robert Rauschenberg, which "makes its symbolic allusion to hard surfaces such as tabletops, studio floors, charts, bulletin boards – any receptor surface on which objects are scattered [...] [which] changed the relationship between artist and image, image and viewer."[291] These rapports, where the act of viewing and experiencing a visual presentation becomes an engaged mutual acknowledgement of shared inference, interpretation, and criticality, between work and viewer, artist and a greater network, speaks to the nature of enactive embodied visual perception explored in this research.[292]

I have engaged a decidedly gestural effect where there is an expressive looseness to an ultimately mechanically rendered line. The experiments take shape in a range of dense to fluorescent colour prints and collages, on different grounds from textiles to transparent films to wall surface installations. Figure and ground initiate a more direct dialogue between viewer/beholder and depicted/literal/conceptual space, with an eye to a final surrender to material. There is an engagement with ground that speaks to the tradition of humanism, where "...we find clearly enunciated the velum principle, the checkered cloth onto which the painter could transfer directly, by transparence, the contours of an object, without having to resort to geometry."[293] This is, of course, a relationship of figure to ground. But also, this is an engagement with the nature of geometry; that is, the figuring or estimating of space sits in relation to proportions and analogies of points, lines and surfaces, as the externalization of an internal process. The humanist tradition of organizing space on a surface is referenced and explored in relation to ideas of depth. Flatness continues in this work to initiate a dialogue between depth and density.[294] Within this also sits the relationship of painting to architectural space.[295]

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[289] C.f. *hypertext* 5; *hypertext* 22 on shifting attention and distance/close-up viewing; subtext 160.

[290] C.f. *hypertext* 34 on the contour line.

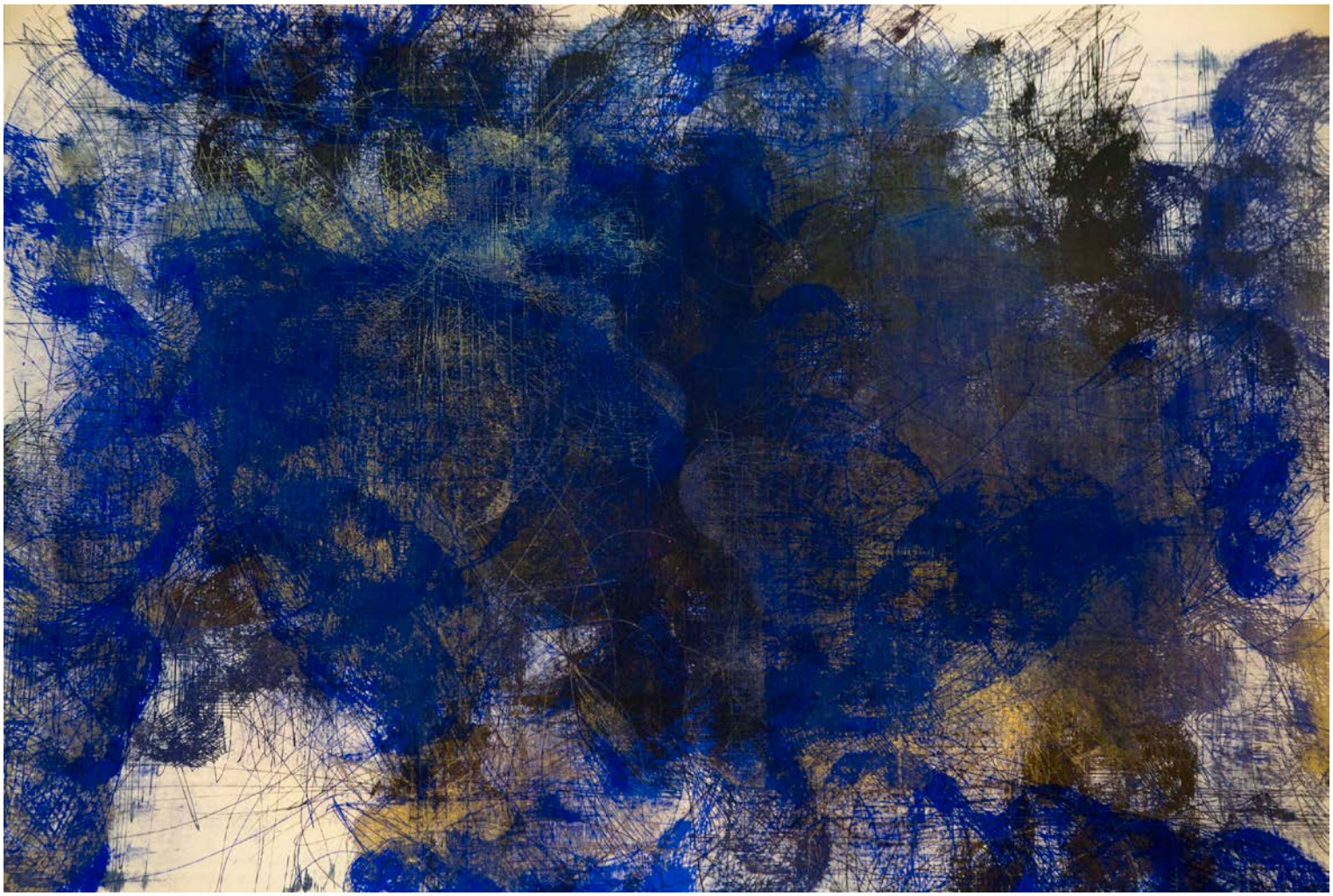
[291] Leo Steinberg, *Other Criteria: Confrontations With Twentieth-Century Art*, New York: Oxford University Press, 1972, 84.

[292] C.f. *text* 57, 59.

[293] Damisch, *The Origin of Perspective*, 22.

[294] C.f. *hypertext* 22, 30.

[295] C.f. Frank Stella's position that 'by shaping its own space, painting makes itself incompatible with architecture, competing directly with it for control of the available space.' (Stella, *Working Space*, 9).



[1_b_ii] agnosia series, acrylic on paper, 100 x 150cm, 2017

1 c_anopsia: *the inability to see*

Isolated fragments of my drawings find their way directly onto wall surfaces exploring ideas of space, and bodies in space – and questions of figure to ground including the relationship of painting to architectural space.[296] In turn this enlists a more direct dialogue with the body, not only in the scale and process used to create the work, which is inherently more physical, but also in the sense of the touch of the mark on the surface – pointing to tracks, or bodily traces.[297] The relationship of figure to ground to body cannot be explored without a reference to Abstract Expressionism. The role of the body as a source in Action Painting, ideas of "getting inside the canvas" sitting across from notions of distance, are unavoidable in an investigation of embodied visual perception.[298] As is the role of gesture to mark-making in relation to surface. Yet the underlying trajectory of this research has been one that seeks to subvert the phallogocentric position of the privilege of the male/objective/mental over the female/subjective/emotional.[299] And this sits decidedly in opposition to the historical position of Abstract Expressionism and the male gesture.[300]

The privilege of the male gesture, as Hélène Cixous explains, is "shown in the opposition between activity and passivity, which he uses to sustain himself."[301] Traditionally, action painting is gendered as masculine,

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[296] C.f. *hypertext* 36 on ideas of painting and its support.

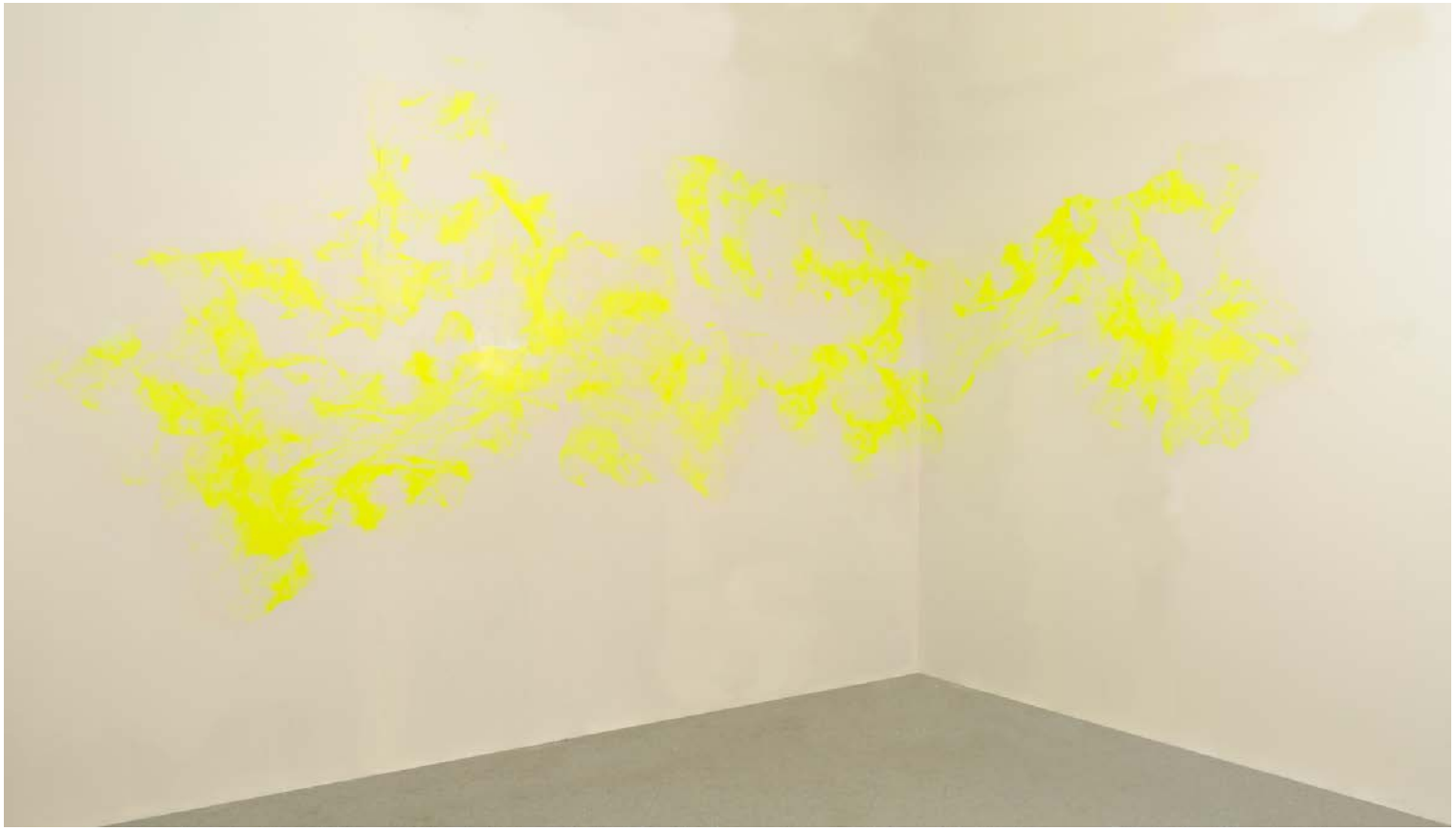
[297] Michael Newman discusses this relationship in terms of Walter Benjamin's distinction, where "…he understands the 'graphic line' as belonging to the sphere of the sign, wheras the 'mark' is characteristic of painting. The mark involves the body, something smudged or laid on a surface, and also time – the German word for mark, *Mal* is etymologically linked to painting *(Mallerie)* and means a moment in time. The word, for Benjamin, enters into a painting as the name that is required to link it to the world." (Newman, *Drawing Time*, 2013).

[298] C.f. Harold Rosenberg, "The American Action Painters," *The London Magazine*, vol. 1 no. 4, 1961.

[299] Derrida coined phallogocentrism and defined it as "the system of metaphysical oppositions," where a binary system has dominated western philosophy that is both male and "determinate." (Derrida,*Writing and Difference*, Chicago: The University of Chicago Press 1978, 20); See also Hélène Cixous and Catherine Clément, *The Newly Born Woman*, trans. Betsy Wang. Minneapolis: University of Minnesota Press, 1986. Furthermore, analytical philosophy has traditionally set itself in opposition with phenomenology in its approach to the study of knowledge. It positions itself as a (male) objective voice, marginalizing art and fields that involve (female) emotive, non-cognitive faculties in terms of the depth of insight they can offer towards the real understanding of meaning and how we relate to the world. Phenomenal consciousness is contrasted with intentionality as the domain of the subjective, and thus somehow less accurate or important. Ideas around embodied visual perception point to a unified perspective, where perception and thought are actually very closely involved. From this perspective, the distance between descriptive, mental (cognitive) meaning and emotive, affective (non-cognitive) meaning shrinks, re-situating aesthetics and art practice as central to understanding how we generate meaning. It is further interesting to note Katherine Hayles' argument that the source wich exposed the binary division that Derrida names, lies in fact in communication and technology. As she states, "…the dialectic between absence and presence came clearly into focus with the advent of deconstruction because it was already being displaced as a cultural presupposition by randomness and pattern. Presence and absence were forced into visibility, so to speak, because they were already losing their constitutive power to form the ground for discourse. In this sense deconstruction is the child of an information age, formulating its theories from strata pushed upward by the emerging substrata beneath." (Hayles, 1999, 44).

[300] C.f. Griselda Pollock, *Vision and Difference: Feminism, Femininity and Histories of Art*, New York: Routledge 2003; The structure of the text sits as a binary dialogue between Isaac and Saskia, each representing and embodying a blurred position to be subverted.

[301] Cixous and Clément, *The Newly Born Woman*, 78. C.f. also Fred Orton and Griselda Pollock's discussion of T.J. Clark's "metaphorics of masculinity" in *Avant-Gardes and Partisans Reviewed*, Manchester: Manchester University Press, 1997.



[1_c_i] anopsia series, *installation view*, acrylic on glassine mounted on wall, 150 x 500cm, 2016

and is a bodily, athletic exercise, that sits across from the passive, softness of the female gesture.[302] This binary gender structure is made explicit to how the eye and body are positioned in contrast, pulling in different directions. This takes form in the post-medium dialogue of pushing painting outside the canvas, exploring the need to step beyond its purported constraints in order to contend with pictorial dynamics.[303] This is an engagement with the distinction between illustrated space and pictorial space; that is, referential as opposed to transformative dynamics. The latter is a call to enter into work, to discover space in a way, to see into painting. This is a painter's invitation, one that is referential in that it alludes to something beyond materiality by way of the material. The causal trace of the touch and gesture left on the wall intends to claim the space it inhabits, and invites the viewer to engage actively, cultivating and rejecting the pictorial dynamics it sets up for itself.[304]

Fluorescent colour is used throughout this series not only to mark the most visible way to bring about attention, but in initiating a play in opticality that results from how the eye engages, the fluorescent yellow in this case leaving an imprint of purple in the eye, squinting as it were in front of a very bright hue.[305] Here the work holds and responds to ideas of scanning, darting eye movements propelled both by colour and disjunct, reconfigured imagery, as a method to convey sense or content.[306] This is not a scientifically recorded configuration of saccadic movements in relation to a specific memory or goal-oriented movement, but rather an engagement of the possibility of such a dialogue, and the arbitrary though equally meaningful result which might unfold.[307] The line or path which the track of colour delineates holds a momentum that is both deliberate and haphazard. There is a sense of journey that is intended, where the spatial and temporal embody a physical confluence.[308]

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[302] This is not a dialogue that is deliberately taken in hand in this research, but certainly exists as a subtext in both the content and form of this presentation. It is also a dialogue that remains an active part of the history of painting, and so must be contended with in any wet studio practice.

[303] C.f. Joselit, *Painting Beside Itself*, 2009, specifically artists he references who explore networks and webs of references and how these are circulated and interpreted, including how painting could be performatively mediated.

[304] There is a cultivation and rejection of illusion in painting that is relevant to this research, specifically exploring the nature of space (pictorial or real). To this end I am interested in the painting/installations of Katharina Gross. Laura Owens is also of interest in her approach and transformation of cultural references within painterly material. Finally, Sigmar Polke is of overarching influence not only in the fluidity of his medium and his relationship to mechanic processes and painting, but in his interest in the transformative possibilities of the material in relation to ideas of the metaphysical. Of particular interest here are his *Sliver Paintings* (1990), his *Transparents* (1992-5), and his *Lens Paintings* (2006-8).

[305] C.f. *hypertext* 20.

[306] C.f. *hypertext* 15; subtext 142, 143.

[307] C.f. *hypertext* 6, 15 and 23 on the relationship between eye-movement and memory, 32 on the idea of micro-consciousnesses.

[308] C.f. *hypertext* 29 on "Time as Space" schema.

[1_c_ii] anopsia series, *installation view* (detail), 2016

1 d_aphasia: *speechless; a state of wonderment*[309]

As my investigation progresses, colour becomes less important, and ideas of tone become more central and at the same time more subtle.[310] In terms of the mechanics of sight, tone is central to depicting spatial relations, which in turn points to ideas around depth and surface.[311] The work suggests ideas of conceptual or imagined space in relation to the depicted space of painting as a platform for viewing, beholding, gazing.[312] This series of work plays entirely within a range of metallic hues (sliver/grey) acrylic paint on transparent vinyl, paper, and fabric – ultra-suede, faux fur, semi-gloss satin, etc. The material ground adds to the tonal range possible, and is inherently tactile – fuzzy, shiny, textured etc. It also allows the paint to soak into its fibres, so that it is not sitting on top but rather almost woven within. Spatially this causes a crowding, a density.[313] There is a flatness that grows and vyes with this, and through the concentration of the tonal range of the paint applied, the relationship between space or depth to surface is explored. The imagery has also become more abstracted from its source, and repetitive, pointing to the near and far exercise engaged in figuring and rendering as artists do – as if with pencil and thumb, seeking to capture the heavens. In this sense there is reference to ideas of endlessness, both spatially and conceptually.[314] Questions remain at stake to do with the relationship between form and ground, real/depicted/conceptual space, the virtual to the illusion, the imagined to the rendered, inner to outer, sight/vision to touch/skin. As before, the work begins in drawing.

Aphasia Installation consists of a dialogue between painting, wall hangings, and wall mounted installation. Each piece consists of a web of layers upon layers of metallic acrylic, altered slightly either in tone or viscosity. The effect intends a sort of focused blur.[315] More formal concerns circle around questions of invented distance and depth, centrality and periphery, hierarchies and subversions of focal points, and the relationship of painted space to architectural space. The installation asks for embodied attention referencing both the haptic and the virtual, staging an experience that is frustrating in its ability to surrender to one perspective, to allow

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[309] Roman Jakobson describes aphasia as a language disturbance where there is a "disintegration of the verbal pattern" so that the context of language becomes essential to understanding. A second type of aphasia, termed 'the contiguity disorder' causes the degeneration of the sentence into mere "word heap," where "word order becomes chaotic; the ties of grammatical coordination and subordination, whether concord or government are dissolved." He calls this "agrammatism." (Roman Jakobson, "Two Aspects of Language and Two Types of Aphasic Disturbances," *On Language*, ed. R Waugh and Monique Manville Burston. Cambridge: Harvard University Press, 1956/1990, 116, 125); Also interesting is paragrammatic aphasia in relation to Julia Kristeva's 'Toward a Semiology of Paragrams' ed. French and Lack, *The Tel Quel Reader*, New York: Routledge, 1998, 25-49. C.f. Sigmund Freud, *On Aphasia: A Critical Study*, New York: International Universities Press, 1953.

[310] C.f. *hypertext* 20.

[311] C.f. *hypertext* 30, *hypertext* 20 on luminance; *subtext* 135, 139, 160.

[312] C.f. *hypertext* 22.

[313] C.f. *hypertext* 25 on ideas of visual acuity, density, and micro-saccades.

[314] Some of this work draws from the large etchings of Piranesi, particularly *Carceri's* imaginary labyrinthine paradoxical spaces.

[315] C.f. *hypertext* 25; *subtext* 176.

[1_d_i] aphasia series, 100 x 240 cm, diptych, acrylic on satin, 2017

a comfortable viewing point where things might come together into a recognizable image or resolved vista. What is significant is the density of ink on the light satin ground presenting an embodied materiality, engaging the natural motion of the organ of the eye scanning across an intricate surface. The intention is to implicate touch, the body is sought to be accessed through the eye.[316]

Scale is also important, the wall installation measures almost 4 meters each way.[317] The body stands before this, or shifts from side to side, negotiating the sheen/gloss of the paint in an attempt to discern an image, one that recedes or is no longer really there or detectable. The wall piece has, as its source, a photographic image of a cloud.[318] Even without the minor digital manipulations of the rendered image, after enlarging, printing and transferring it onto the wall – only a vestigial trace remains, deliberately placing the physical material of the installation at the fringe of liminal space. The tiny source image was divided into rectangular fragments to fit on 20 silk-screens (about 80 x 100cm) in order to re-scale the image to fit the wall. These were then screen-printed on glassine before being collaged onto the wall in-situ. The collaging involved wetting and gluing the glassine on the wall, and patching bits up in order to mend and compensate for gaps left after the material stretched and tore from the application. In this way, the image itself was pushed, pulled, and in turn transformed, animating a bodily relationship to the image. Using scaffolding to apply the collage, the process of making assumed the role of a physical re-enactment of the act of measuring and re-scaling.[319] And the act of collaging big, membrane-thin paper, took the whole body – ending with hands and fingers to smooth out and push the material flat into the wall.

Virtual transparency enters in dialogue with depicted texture, suggesting a material reference to the liminal and pointing to a palpable sense of atmosphere – the literal affect of the image which seeks to access territory of insight. In the end, what began as a probing of the silvery coat of a cloud, the surface of the wall became closer to the shiny, silver, scaly skin of a fish – decidedly of this world – trembling, smelly, and difficult to hold on to.

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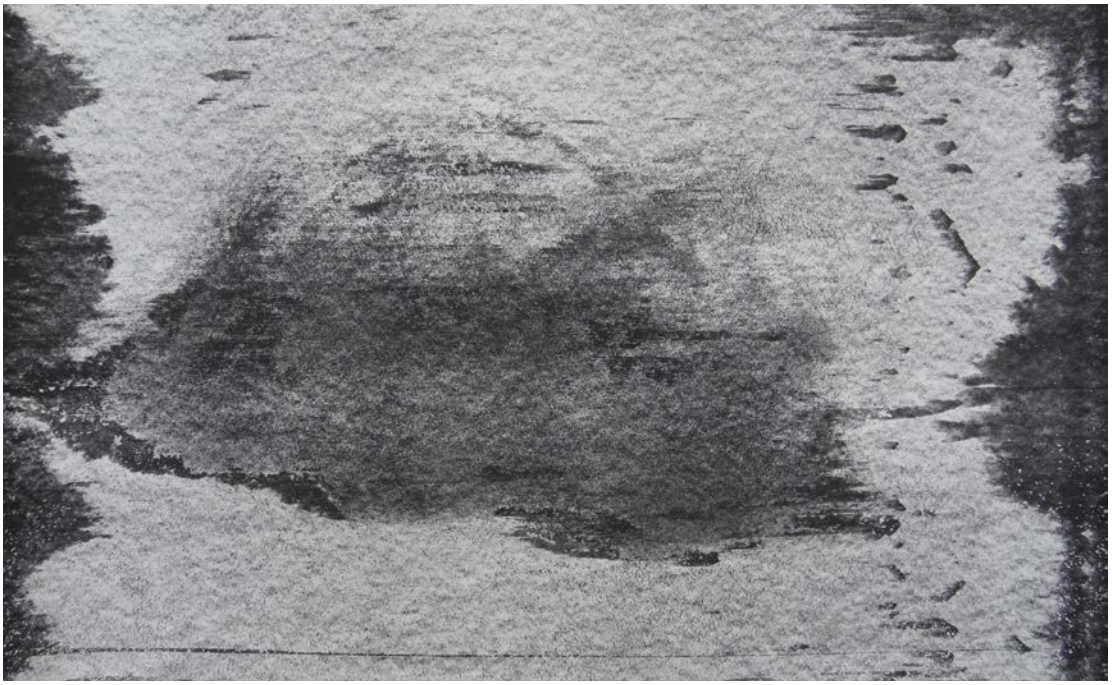
[316] C.f. *hypertext* 26.
[317] C.f. *subtext* 188.
[318] This is not without reference to the relationship of photography to painting, though ultimately more rooted in chirographic sources; there is a subversion of the causal nature of photography, to the causal trace of the painter through gesture and touch.
[319] C.f. *hypertext* 35 on re-enactment.

[1_d_ii] aphasia series, *installation view I*, 400 x 400 cm, acrylic on glassine mounted on wall, 2017

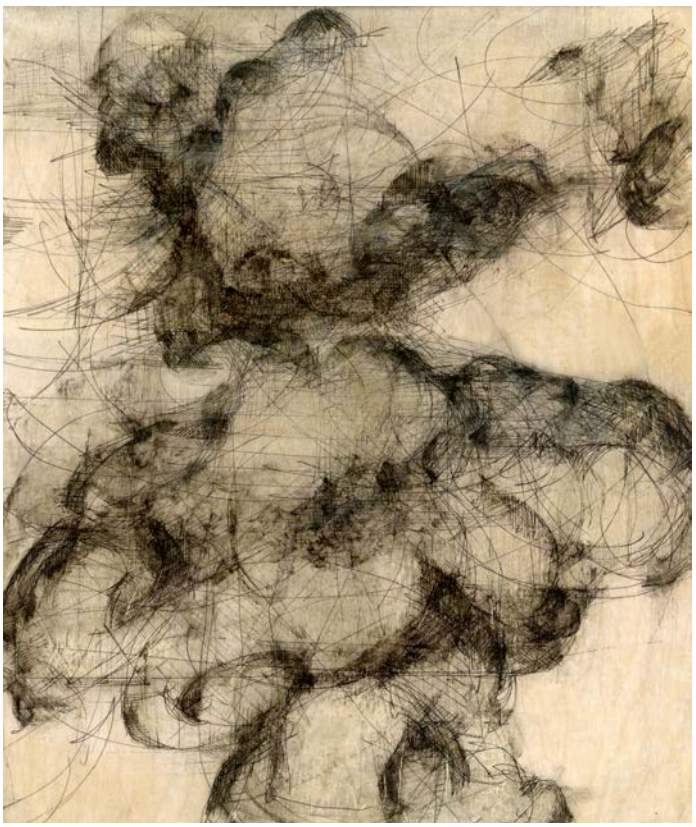
2 _images of work

[2_a_i-iv]
aporia series
80 x 100 cm
steel plates
2015

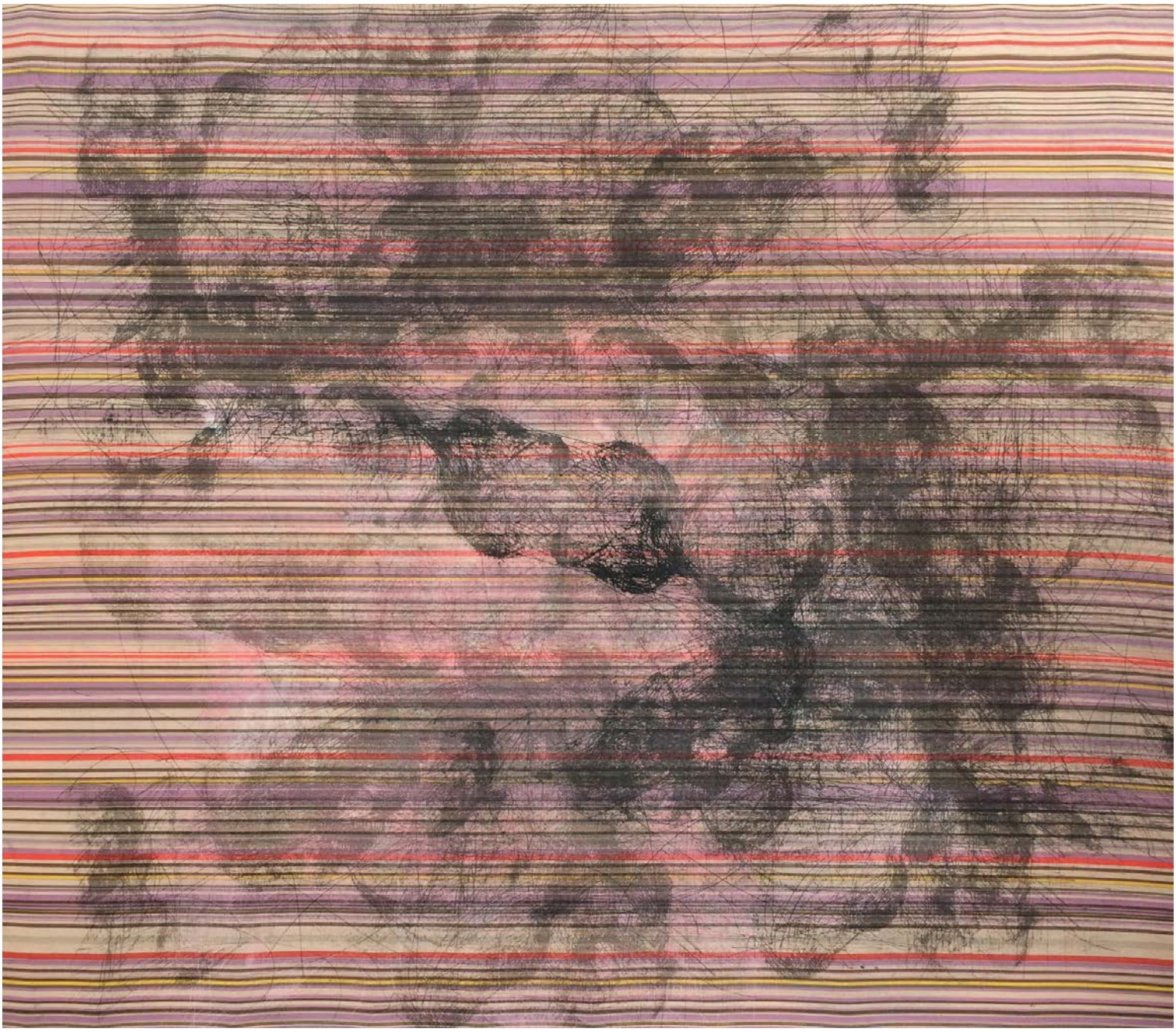
[2_a_v-vi]
aporia series,
rubbings,
80 x 100 cm
acrylic, wax on paper
2015



[2_b_i-iii]
agnosia series, *drawings*
45 x 65 cm
ink on glassine on birch plywood
2016



[2_b_iv]
agnosia series
150 x 180 cm
acrylic on fabric
2016



[2_b_v]
agnosia series
100 x 150 cm
acrylic on paper
2016

[2_b_vi]
agnosia series
80 x 100 cm
acrylic on glassine
2016

[2_b_vii]
agnosia series,
diptych
100 x 240 cm
acrylic, ink,
newsprint,
glassine on canvas
2016

[2_c_i]
anopsia series, *wall installation*
300 x 300 cm
acrylic on glassine mounted on wall
2016

[2_b_vii-viii]
agnosia series
100 x 150 cm
acrylic on paper
2016

[2_b_ix]
agnosia series
100 x 120 cm
acrylic on faux fur fabric
2016

[2_c_ii-iii]
anopsia series, *drawings*
80 x 100 cm
ink on glassine
on birch plywood
2017

[2_d_i-ii]
aphasia series
150 x 150 cm
acrylic on satin
2017

[2_c_iv]
anopsia series, *installation view*
140 x 300 cm
acrylic on vinyl
2016

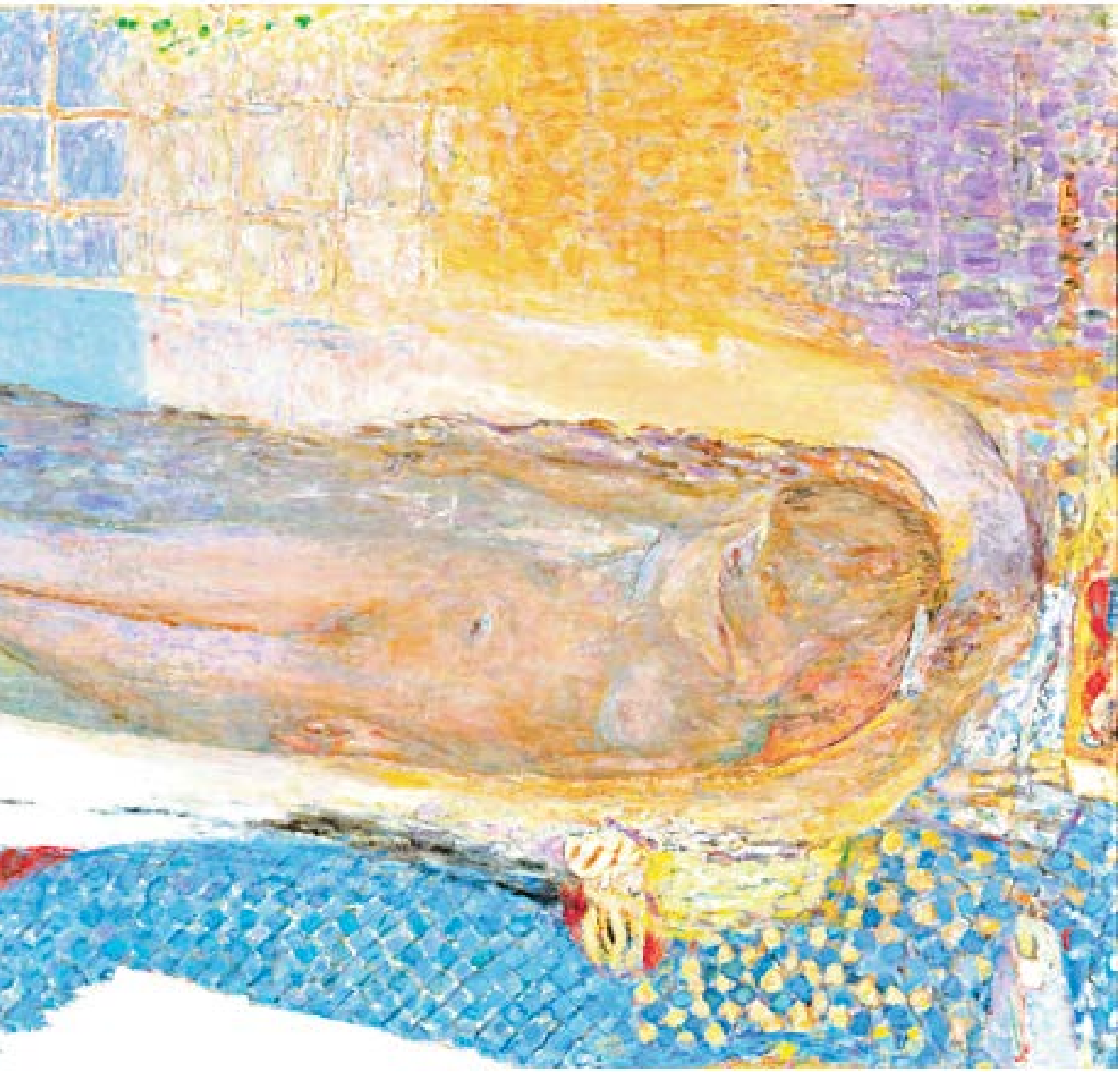
[2_d_iii]
aphasia series
110 x 180 cm
acrylic on satin
2017

[2_d_iv]
aphasia series, *installation*
140 x 300 cm
acrylic on satin
2017

[2_c_vi]
aphasia series, *installation view II*
400 x 400 cm
acrylic on glassine mounted on wall
2017

3_image reference

[Figure 1]
Pierre Bonnard, *Nude in the Bath*, 1936
Oil on Canvas
93 x 147 cm
Musée de l'Art Moderne
de la Ville de Paris



References

1_references for *hypertext*

Aristotle, *Metaphysics*, trans. Richard Hope, Ann Arbor: University of Michigan Press, 1960.

----, *Poetics*, trans. S. H. Butler, London: Macmillan, 1917.

----, *Rhetoric*, trans. Lane Cooper, New York, London: D. Appleton and Co., 1932.

----, *De Anima*, 428a 1-4.

Arnheim, Rudolf, *New Essays on the Psychology of Art*, Berkeley: University of California Press, 1986.

Ashby, Ross, *An Introduction to Cybernetics*, London: Chapman & Hall,1956.

Block, Ned "Review of Alva Noë: *Action in Perception*," *Journal of Philosophy* 102:259-272 (2005).

Bonnard, Pierre and Nicole R. Myers, Allison Stielau, *Pierre Bonnard: The Late Still Lives and Interiors*, New York: Metropolitan Museum of Art, 2009.

Bois, Yve-Alain, *Painting as Model*, Cambridge: MIT Press, 1993.

----, Denis Hollier, Rosalind Krauss and Hubert Damisch, *A Conversation with Hubert Damisch*, *October* Vol. 85 (Summer, 1998), 3-17.

----, and John Sheply in "Painting as Model Reviewed Work(s): Fenêtre jaune cadmium, ou, Les dessous de la peinture by Hubert Damisch", *October*, Vol. 37 (Summer, 1986), 125-137.

Bowman, Matthew, "The intertwining – Damisch, Bois, and October's Re-Thinking of Painting," *Journal of Contemporary Painting*, 5.1, April 2019.

Bryson, Norman, *Word and Image: French Painting in the Ancien Regime*, Cambridge: Cambridge University Press, 1983.

----, "The Gaze in the Expanded Field," *Vision and Visuality*, ed. Hal Foster, New York: The New Press, 1988.

Chaplin, Adrienne Dengerink, "Art and Embodiment: Biological and Phenomenological Contributions to Understanding Beauty and the Aesthetic," *Journal of Contemporary Aesthetics* (2005).

Cixous, Hélène and Catherine Clément, *The Newly Born Woman*, trans. Betsy Wang, Minneapolis: University of Minnesota Press, 1986.

Colby, Georgina, *Kathy Acker: Writing the Impossible*, Edinburgh: Edinburgh University Press, 2016.

Conner, Steven, "Topologies: Michel Serres and the Shapes of Thought," *Anglistik*, 15 (2004): 105-1`7.

Bevil Conway and Margaret Livingstone, "Perspectives on Science and Art," *Curr Opin Neurobiol*, 2007 Aug; 17(4): 476.

Currie, G. & Ravenscroft, I., *Recreative minds: Imagination in philosophy and psychology*, Oxford: Oxford University Press, 2002.

Damasio, Antonio, The Feeling of *What Happens: Body and Emotion in the Making of Consciousness*, London: Vintage Books, 2000.

----, *Looking for Spinoza*, New York: Harvest, 2003.

Damisch, Hubert, *A Theory of /Cloud/*, trans. Janet Lloyd, Stanford: Stanford University Press, 2002.

----, 'Remarks on Abstraction', trans. Rosalind Krauss, *October*, 127 Winter, 2009, s136-140.

----, "L'éveil du regard," *Les Lettres Nouvelles* 61, June 1958.

----, "Eight Theses for (Or against?) a Semiology of Painting," *Oxford Art Journal*, Vol. 28, No. 2, 259-267, Oxford University Press, 2005.

----, *The Origin of Perspective*, trans. John Goodman, Boston: MIT Press 1995.

----, "Dubuffet, or the Reading of the World," trans. Kent Minturn and Priya Wadhera, *Art de France* 2 (1962): 337-346 .

Danto, Arthur C., "The Transfiguration of the Commonplace," *The Journal of Aesthetics and Art Criticism*, Vol. 33, No. 2 (Winter, 1974).

Davidson, Donald, Subjective, *Intersubjective*, *Objective: Philosophical Essays*, Vol 3, Oxford: Clarendon Press, 2001.

----, *"What Metaphors Mean," Critical Inquiry* Vol. 5, No. 1, Special Issue on Metaphor (Autumn, 1978), 31-2.

Derrida, Jacques, *The Truth in Painting*, trans. Geoff Bennington and Ian McLeod, London: The University of Chicago Press, 1987.

----, *Memoirs of the Blind*, trans. Mascale-Anne Brault; Michael Naas, Chicago: University of Chicago Press, 1993.

----, *Speech and Phenomena: And Other Essays on Husserl's Theory of Signs,* Evanston: Northwestern University Press, 1973.

----, *Writing and Difference*, Chicago: The University of Chicago Press, 1978.

Didi-Huberman, Georges, *Confronting Images*, trans. John Goodman, Pennsylvania: Pennsylvania State University Press, 2005.

----, "The art of not describing: Vermeer - the detail and the patch," *History of the Human Sciences*, Vol. 2, No. 2., 1989.

----, *Fra Angelico: Dissemblance and Figuration,* Chicago: University of Chicago Press, 1995.

----, "The Supposition of The Aura: The Now The Then and Modernity," *Walter Benjamin and History*, Andrew Benjamin (ed.), New York: Continuum, 2005.

----, *Ce Que Nous Voyons*, *Ce Qui Nous Regarde*, Editions de Minuit: 1992.

Dixon, Graham, "Bonnard: Drawing Color, Painting Light," *artcritical*, March 2009.

Elderfield, John, *Bonnard*, New York: Harry N. Abrams, 1998.

Evans, David, 'Introductions: Seven Types of Appropriation," in *Appropriation*, London: Whitechapel Gallery and MIT Press 2009.

Fauconnier, Gilles, *The Encyclopedia of the Social and Behavioral Sciences,* N.J. Smelser and P.B. Blates (eds.) Oxford: Pergamon, 2001.

----, and Mark Turner, *The Way We Think: Conceptual Blending And The Mind's Hidden Complexities*, New York: Basic Books, 2003.

C. Firestone and B. Scholl, "Cognition does not affect perception: Evaluating the evidence for "top-down" effects," *Behavioral and Brain Sciences*, 1:1-77, July 2015.

Fodor, Jerry, *RePresentations: Philosophical Essays on the Foundations of Cognitive Science*, Cambridge: MIT Press, 1981.

----, *The Language of Thought*, New York: Crowell, 1975.

----, *The Modularity of Mind an Essay on Faculty Psychology*, Cambridge: MIT Press, 1983.

Forrester, John V. and Andrew D. Dick, Paul G McMenamin, Fiona Roberts, Eric Pearlman, *The Eye: Basic Sciences in Practice*, Saunders Ltd. 2015.

Freedberg, David, and Vittorio Gallese, "Motion, Emotion and Empathy in Aesthetic Experience." *Trends in Cognitive Sciences* 11 (5):197–203, 2007.

Gallagher, Shaun, *How the Body Shapes the Mind*, Oxford: Oxford University Press, 2005.

Gallese, Vittorio, "Mirror Neurons and Art," pp. 441–449 *Art, and the Senses*, eds. Francesca Bacci and David Melcher, Oxford: Oxford University Press, 2010.

----, et al., "Abstract Art and Cortical Motor Activation: an EEG Study," *Frontiers in Human Neuroscience*, 6 (311), November 2012.

----, "The manifold nature of interpersonal relations: The quest for a common mechanism," *Philosophical Transactions of the Royal Society of London*, (2003), 358 (1431), 517-528.

----, Freedberg, David, "Motion, Emotion and Empathy in Aesthetic Experience," *Trends in Cognitive Sciences* 11 (5):197–203, 2007.

----, "Seeing Art...Beyond Vision: Liberated Embodied Simulation in Aesthetic Experience," 62–65, *Seeing with the Eyes Closed*, eds. Alexander Abbushi, Ivana Franke and Ida Mommenejad, Berlin: Association of Neuroesthetics, 2011.

----, Luciano Fadiga, Leonardo Fogassi, and Giacomo Rizzolatti, "Action Recognition in the Premotor Cortex." *Brain*, 1996.

----, and George Lakoff, "The Brain's Concepts: The Role of the Sensory-Motor System in Conceptual Knowledge." *Cognitive Neuropscyhology*, 2005.

Gibson, James J., *The Ecological Approach to Visual Perception*, Boston: Houghton Mifflin, 1979.

Gill, Jerry H., "Wittgenstein and Metaphor," *Philosophy and Phenomenological Research*, Vol. 40, No. 2 (Dec., 1979), 272-284.

Goodman, Nelson, *Languages of Art: An Approach to a Theory of Symbols*, 33, Indianapolis: Hackett Publishing,1976.

Guattari, Felix, *The Machinic Unconsious: Essays in Schizoanalysis*, trans. Taylor Adkins, Boston: MIT Press, 2010.

Hayles, Katherine, *How We Became Posthuman: Virtual Bodies In Cybernetics, Literature, and Informatics*, Chicago: University of Chicago Press, 1999.

Heidegger, Martin, *What Is Called Thinking?*, trans. Glenn Gray, New York: Harper & Row, 1954.

von Hildebrand, Adolf, *The Problem of Form in Painting and Sculpture*, 1932.

Hodgkin, Howard, and David Sylvester, *Interviewed by David Sylvester*, Howard Hodgkin Archive, 1982.

Hoppe, S. and T. Loetscher, SA. Morey, A. and Bulling (2018) "Eye Movements During Everyday Behavior Predict Personality Traits," *Front. Hum. Neurosci.* 12:105.

Hyman, Timothy, *The World New Made*, London: Thames & Hudson 2016.

----, *Bonnard*, London: Thames & Hudson, 1998.

Inwood & Gerson, *The Stoics Reader: Selected Writings and Testimonials*, Indianapolis: Hackett Publishing. 2008,

Ionescu, Vlad, "What do you see? The phenomenological model of image analysis: Fiedler, Husserl, Imdahl," *Image & Narrative*, Vol. 15, No. 3, 2014.

Jakobson, Roman, "Two Aspects of Language and Two Types of Aphasic Disturbances," *On Language*, ed. R Waugh and Monique Manville Burston, Cambridge: Harvard University Press, 1956/1990.

Jamrozik, A., McQuire, M., Cardillo, E.R. et al. "Metaphor: Bridging Embodiment to Abstraction," *Psychon Bull Rev* (2016) 23.

Johansson R., and M. Johansson, "Look here, eye movements play a functional role in memory retrieval," *Psychol Sci.* 2014 Jan; 25(1): 236-42.

Johnson, Mark, *The Meaning of the Body: Aesthetics of Human Understanding*, Chicago: University of Chicago Press, 2007.

Kandel, Eric R. (October 2009). "The biology of memory: a forty-year perspective". *J. Neurosci.* 29 (41): 12748–56.

----, "The Brain and Behaviour," *Principles of Neural Science*, Fifth Edition, The McGraw-Hill Companies, 2013.

----, "NOBEL LECTURE: The Molecular Biology of Memory Storage: A Dialog Between Genes and Synapses," *BioScience Reports*, October 2001, Volume 21, Issue 5, 565-611.

----, "The New Science of Mind and the Future of Knowledge," *Neuron* Vol. 80 Issue 3, 30 October 2013, 546-560.

Kant, Immanuel, *The Critique of Judgement*, trans. J.C. Meredith, Oxford: Clarendon Press, 1991.

Koestler, Arthur, *The Art of Creation*, London: Arkana, 1964.

Lakoff, George, *Metaphors We Live By*, Chicago: University of Chicago Press, 2003.

----, *Meaning and Mental Representations*, ed. Umberto Eco et al, Bloomington: Indiana University Press, 1988,

----, "The Contemporary Theory of Metaphor," *Metaphor and Thought*, Andrew Ortony (ed.), Cambridge University Press, 202-251 (1993).

----, and Mark Johnson, *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought*, New York: Basic Books, 1999.

Livingstone, Margaret, and David Huble, *Vision and Art: The Biology of Seeing*, New York: Harry N. Abrams, 2008.

----, and Doris Tsao, "Mechanisms of face perception," *Annual Review of Neuroscience*, 2008; 31: 411–437.

Mann, Sargy, "Shared Experience," *Selected by Semir Zeki for the Philosophical Transactions of the Royal Society,* Sargy Mann Archive: 1996.

----, 'Let it be felt the painter was there…', Hayward Gallery, London: 1984.

Martinez-Conde, Susana, and Stephen L. Macknick, "Unchanging visions: the effects and limitations of ocular stillness," *Philosophical Transactions Royal Society London Biological Sciences*, v. 372 (1718); 2019 April 19.

Merleau-Ponty, Maurice, *The Visible and the Invisible*, Evanston: Northwestern University Press, 1969.

----, *Phenomenology of Perception*, trans. Colin Smith, London: Routledge: 1962.

Meyerhold, Vsevolod, *On Theatre*, New York: Hill and Wang, 1969.

Modell, Arnold, *Imagination and the Meaningful Brain*, Cambridge: MIT Press, 2003.

----, "The Body in Psychoanalysis and the Origin of Fantasy," *The Embodied Subject: Minding the Body in Psychoanalysis*, ed. John P. Muller and Jane G. Tillman, New York: Rowan & Littlefield, 2007.

Musil, Robert, *Man without Qualities*, London: Picador, 1995.

Newman, Michael, "Derrida and the Scene of Drawing," *Research in Phenomenology*, vol.24, fall 1994.

----, "Drawing Time: Tacita Dean's Narratives of Inscription," *Enclave Review*, Spring 2013.

Ooi et al, "Distance determined by the angular declination below the horizon," *Nature* 414, 2001, 97–200.

Reichart, Kolja and Christian Kobald, "Essay: After Work," *Spike,* no. 43, Spring 2015.

Rizzolatti, G., and L. Fadiga, V. Gallese, L.Fogassi, "Premotor cortex and the recognition of motor actions," *Cogn. Brain Res.*, 3 (1996), 131-141.

Sartre, Jean-Paul, *The Imaginary*, New York: Routledge, 2004.

Sbriscia-Fioretti, C. and Berchio, D. Freedberg, V. Gallese, M. Umiltà, "Abstract Art and Cortical Motor Activation: an EEG Study," *Frontiers in Human Neuroscience*, 2012, 6:311.

Schlovsky, Viktor, "Art as Technique," *Theory of Prose*, trans. Benjamin Sher, Illinois State University: Dalkey Archive Press, 1991.

Serres, Michel, *The Five Senses: A Philosophy of Mingled Bodies*, London: Bloomsbury, 2008.

----, *The Troubador of Knowledge*, trans. Shelia Faria Glaser and William Paulson, Michigan: University of Michigan Press, 2000.

Steinberg, Leo, *Other Criteria: Confrontations With Twentieth-Century Art*, New York: Oxford University Press, 1972.

Frank Stella, *Working Space*, Boston: Harvard University Press, 1986.

Strzemiński, Władysław, *Theory of Vision*, 1958.

Sylvester, David, *About Modern Art: Still Life*, New Haven: Yale University Press, 2001.

Varela, Francesco, "Neurophenomenology: A methodological remedy for the hard problem," *Journal of Consciousness Studies*, (1996), 3(4), 330-349.

----, *Autonomy and Autopoiesis*, in Roth, G., and H. Schwegler (eds.), Self-organizing Systems, Frankfurt: Campus Verlag, 1981.

Whitfield, Sara, *Bonnard*, New York: Harry N. Abrams, 1998.

Wittgenstein, Ludwig, *Lectures and Conversations on Aesthetics*, *Psychology and Religious Beliefs*, ed. Cyril Barrett, Berkeley and Los Angeles: University of California Press, and Oxford: Basil Blackwell, 1966.

Worringer, Wilhelm, *Abstraction and Empathy*, *A Contribution to the Psychology of Style*, trans. Michael Bullock, New York: International Universities Press, 1953.

Yates, Frances, *The Art of Memory*, London: Pimlico, 1966.

Zeki, Semir, *A Vision of the Brain*, Oxford: Blackwell Scientific Publications, 1993.

----, *Inner Vision: An exploration of Art and the Brain*, Oxford: Oxford University Press, 1999.

----, "Art and the Brain," The Artful Mind: Cognitive Science and the Riddle of Human Creativity, ed. Mark Turner, Oxford: Oxford University Press, 2006.

----, "The Neurology of Ambiguity," *Consciousness and Cognition*, 13 (2004) 173–196.

----, "A Theory of Micro-Consciousness," *in The Blackwell Companion to Consciousness*, ed. Max Velmans, Oxford: Wiley-Blackwell, 2007.

2_bibliography for *hypertext*

Altieri, Charles, *The Particulars of Rapture: An Aesthetics of the Affects*, Ithaca: Cornell University Press, 2003.

Arcaro, Michael J. and Peter F Schade, Justin L Vincent, Carlos R Ponce, Margaret S Livingstone, "Seeing faces is necessary for face-domain formation." *Nature Neuroscience*, 2017.

Austin, J.L., *Philosophical Papers*, Oxford: Oxford University Press, 1979.

Barrett, Lisa Feldman, *How Your Emotions Are Made: The Secret Life of the Brain and the Future of Human Nature*, Stuttgart: Pan Macmillan, 2017.

Bateson, Gregory, *Steps to and Ecology of Mind*, Chicago: University of Chicago Press, 1972.

Benjamin, Walter, 'The Author as Producer,' in *The work of Art in the Age of Its Technological Reproducibility and Other Writings on Media*, trans. Edmund Jephcott et al., Cambridge MA: Harvard University Press, 2009.

Bergson, Henri, *Matter and Memory*, Cambridge MA: Zone Books, 1998.

Blanchot, Maurice, *The Gaze of Orpheus*, trans. Lydia Davis, Barrytown/Station Hill: 2000.

Black, Max *Models and metaphors: Studies in language and philosophy*, Ithaca: Cornell University Press, 1979.

Block, Ned, "Consciousness, accessibility, and the mesh between psychology and neuroscience, *Behav. Brain Sci.* 30, (2007) 481–548.

Boden, Margaret, *Mind As Machine: A History of Cognitive Science*, Oxford: Oxford University Press, 2006.

Brenner, Teresa, *The Transmission Affect*, Ithaca: Cornell University Press, 2004.

Burleigh, Alistair and Robert Pepperell, and Nicole Ruta, "Natural Perspective: Mapping Visual Space with Art and Science," *Vision*, 2018.

Cage, John, *Silence: Lectures and Writings*, Weslyan: Welsyan University Press, 1961.

Chomsky, Noam, "A review of B.F. Skinner's Verbal Behavior," *Language*, Vol. 35, 1959.

Clark, Andy, *Surfing Uncertainty: Prediction, Action and the Embodied Mind*, Oxford: Oxford University Press, 2016.

Damasio, Antonio, *Somatic Markers and the Guidance of Behaviour*, New York: Oxford University Press, 1991.

DeLanda, Manuel, *Philosophy and Simulation: The Emergence of Synthetic Reason*, London & New York: Continuum, 2011.

Deleuze, Gilles, *The Fold*, trans. Tom Conley, London: Continuum, 2001.

----, *Difference and Repetition*, London: Continuum, 2004.

----, and Felix Guattari, *A Thousand Plateaus*, trans. Brian Massumi, Minneapolis: University of Minnesota Press, 1987.

Derrida, Jacques, *Aporias*, Stanford: Stanford University Press, 1993.

Dewey, John, *Art as Experience*, New York: The Berkley Publishing Group, 1980.

Dostoyevsky, Fyodor, *The Idiot*, London: Penguin, 2004.

Eisenstein, Sergei, *Towards a Theory of Montage*, vol. 2, ed. Michael Glenny and Richard Taylor, trans. Michael Glenny, London: British Film Institute, 1991.

Fischer, Elizabeth and Rebecca Fortnum, *On Not Knowing: How Artists Think*, London: Black Dog Publishing, 2014.

Sigmund Freud, *On Aphasia: A Critical Study*, New York: International Universities Press, 1953.

Galloway, Alexander R, *The Interface Effect*, Cambridge: Polity Press, 2012.

Gere, Charlie, *Art, Time and Technology*, London: Berg Publishers, 2006.

Gill, Jerry, "Wittgenstein and Metaphor," *Philosophy and Phenomenological Research*, Vol. 40, No. 2 (Dec., 1979), 272-284.

Goguen, Joseph A., "Art and the Brain," *Journal of Consciousness Studies*, June/July 1999.

----, and Harrell, F. *Style as a Choice of Blending Principles*, San Diego: University of California, 1993.

Gombrich, E.H., *The Image and the Eye: Further Studies in the Psychology of Pictorial Representation*, London: Phaidon, 1982.

----, Art and Illusion: *A Study in the Psychology of Pictorial Representation*, London: Phaidon, 1960.

Grau, Oliver, *Virtual Art: From Illusion to Immersion*, Cambridge: MIT Press, 2004.

----, Media Art Histories, ed. Oliver Grau, Cambridge: MIT Press, 2010.

Harrell, D. Fox, *Phantasmal Media: An Approach to Imagination, Computation, and Expression*, Cambridge: MIT Press, 2013.

----, "Toward a Theory of Phantasmal Media: An Imaginative Cognition- and Computation-Based Approach to Digital Media," *CTheory*, September 2, 2009.

Henry, R. C., *"The Mental Universe,"; Nature* 436:29, 2005.

Hoffman, Donald, *Visual Intelligence: How We Create What We See*, New York: Norton, 1998.

----, "The Case Against Reality," *The Atlantic*, April 25, 2016; "The Evolutionary Argument Against Reality," Interview in *Quanta Magazine*, April 21, 2016.

Hubel DH and Wiesel TN., *Brain and Visual Perception: The Story of a 25-Year Collaboration*, New York: Oxford University Press, 2005.

Hyman, John, "Art and Neuroscience," *Beyond Mimesis and Convention: Representation in Art and Science*, ed. Roman Frigg and Matthew Hunter, Dordrecht: Springer, 2010.

James, William, *The Principles of Psychology*, New York: Dover Publications, 1950.

Joselit, David, *After Art*, Princeton: Princeton University Press, 2012.

----, *Painting Beyond Itself: The Medium in the Post-medium Condition*, Berlin: Sternberg Press, 2016.

Koffka, Kurt, "Perception: An Introduction to Gestalt Theory," *Psychological Bulletin*, 19, 1922, 531-585.

van der Kolk, Bessel, *The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma*, New York: Viking, 2014.

Kosslyn S., M., Behrmann M., Jeannerod M., "The cognitive neuroscience of mental imagery," Neuropsychologia 33, 1335–1344 (1995).

Krauss, Rosalind, *The Originality of the Avant-Garde and Other Modernist Myths*, Cambridge MA: MIT Press, 1986.

Kristeva, Julia, "Toward a Semiology of Paragrams," ed. French and Lack, *The Tel Quel Reader*, New York: Routledge, 1998, 25-49.

Laeng et al., "Scrutinizing visual images: The role of gaze in mental imagery and memory Article," *Cognition*, May 2014 131(2): 263-283.

Livingstone, Margaret S. and Bevil R. Conway, "View Masters," *Skeptical Inquirer*, Nov.–Dec. 2006.

----, and Conway, B. R. "Neural Basis of Color Vision," *Encyclopedia of Cognitive Science*, ed. L. Nadel, New Jersy: Wiley, 2006.

Linkovski, Omer & Katzin, Naama & Salti, Moti. (2016), "Mirror Neurons and Mirror-Touch Synesthesia." *The Neuroscientist*. 23.

Lyotard, Jean-François, *The Postmodern Condition: A Report on Knowledge*, *Theory and History of Literature*, Vol. 10, trans. Geoff Bennington and Brian Massumi, Manchester: Manchester University Press, 1984.

Mac Low, Jackson, 'Poetry and Pleasure" in *Thing of Beauty: New and Selected Works*, ed. Anne Tardos, Berkeley and London: University of California Press 1999/2008.

Malabou, Catherine, *Plasticity at the Dusk of Writing: Dialectic*, *Destruction*, *Deconstruction*, trans. Carolyn Shread, New York: Columbia University Press, 2010.

Massumi, Brian, *Parables for the Virtual: Movement*, *Affect*, *Sensation*, Durham: Duke University Press, 2002.

Maxwell, James Clerk, *The Scientific Papers of James Clerk Maxwell*, New York: Courier Dover Publications, 2013.

Merleau-Ponty, Maurice, "Eye and Mind" in Galen A. Johnson (ed.), *The Merleau-Ponty Aesthetics Reader*, trans. Michael B. Smith, Evanston, Illinois: Northwestern University Press, 1993.

Mothersill, Mary, *Beauty Restored*, London: Clarendon Press, 1984.

Nancy, Jean-Luc, *Of the Sublime: Presence in Question*, trans. Jeffery Librett, Albany NY: State University of New York Press, 1993.

Noë, Alva, *Action in Perception*, Boston: MIT Press, 2006.

Orton, Fred and Griselda Pollock, *Avant-Gardes and Partisans Reviewed*, Manchester: Manchester University Press, 1997.

Osborne, Peter, *Anywhere or Not at All: Philosophy of Contemporary Art*, Brooklyn: Verso, 2013.

Packer, Randall, and Ken Jordan (Eds.), *Multi-Media: From Wagner to Virtual Reality*, New York: Norton & Company Inc., 2002.

Piaget, Jean, *Intelligence and affectivity*, Palo Alto, CA: Annual Reviews, 1981.

----, *Towards a Logic of Meanings* (with Rolando Garcia), Hillsdale, NJ: Erlbaum Associates, 1991.

----, *The Child's Conception of the World*, Maryland: Littlefield Adams: 1951.

----, and Inhelder, B., *An essay on the construction of formal operational structures. The growth of logical thinking: From childhood to adolescence* (A. Parsons & S. Milgram, trans.), New York: Basic Books,1958.

Pickering, Andrew, *The Cybernetic Brain: Sketches of Another Future*, Chicago: University of Chicago Press, 2011.

Pollock, Griselda, *Vision and Difference: Feminism*, *Femininity and Histories of Art*, New York: Routledge 2003.

Popper, Frank, *From Technological to Virtual Art*, Cambridge: MIT Press, 2006.

Radall, Marilyn, *Pragmatic Plagiarism: Authorship*, *Profit, and Power*, Toronto: University of Toronto Press, 2001.

Ramachandran, Vilayanur, *The Emerging Mind*, London: Profile Books, 2003.

----, and Hubbard, *Journal of Consciousness Studies*, 10, No. 8, 2003.

Reddy, Michael, "The conduit metaphor: A case of frame conflict in our language about language," *Metaphor and Thought*, Cambridge: Cambridge University Press, 1979, 284–310.

Rescher, Nicholas, *Aporetics: Rational Deliberation in the Face of Inconsistency*, Pittsburgh PA: University of Pittsburgh Press 2009.

Richards, I. A., *The Philosophy of Rhetoric*, New York: Oxford University Press, 1936.

Ricoeur, Paul, *The Rule of Metaphor: The Creation of Meaning in Language*, New York: Routledge, 2003.

----, *Memory, History, Forgetting*, Chicago: The University of Chicago Press, 2004.

Rorty, Richard, *Philosophy and the Mirror of Nature*, Princeton: Princeton University Press: 1979.

Rosenberg, Harold, "The American Action Painters," The London Magazine, vol. 1 no. 4, 1961.

Scarry, Elaine, *On Beauty and Being Just*, Princeton: Princeton University Press 2001.

----, *The Body in Pain: The Making and Unmaking of the World*, Oxford: Oxford University Press, 2010.

Searle, John, *Mind Design: Philosophy Psychology*, Artificial Intelligence, ed. J. Haugeland, Cambridge: MIT Press, 1981.

----, "Speech Acts: An Essay in Philosophy of Language, Philosophical Quarterly, 20 (79):172-179 1969.

Sedgwick, Eve Kosofsky, *Touching Feeling: Affect, Pedagogy, Performativity*, Durham: Duke University Press, 2003.

Smith, Barry C, "The Senses and the Multisenses," *Edge*, June 2019.

----, "The Nature of Sensory Experience: the case of taste and tasting," *Phenomenology and Mind Online Journal*, 2013, 292-313.

Sobchak, Vivian, *Carnal Thoughts: Embodiment and Moving Image Culture*, Oakland: University of California Press, 2004.

Strawson, P.F., *Philosophical Writings*, Oxford: Oxford University Press: 2014.

----,"Imagination and Perception," Ralph Charles Sutherland Walker (ed.), *Kant on Pure Reason*, Oxford: Oxford University Press, 1982.

Tomkins, Silvan, *Affect Imagery Consciousness*, New York: Springer Publishing, 1991.

Turkle, Sherry, et al. *Evocative Objects: Things We Think*, ed. Sherry Turkle Cambridge: MIT Press, 2007.

----, "Artificial Intelligence and Psychoanalysis: A New Alliance", *Daedalus* (Winter): 1988.

Turner, Mark, *The Origin of Ideas: Blending, Creativity, and the Human Spark*, Oxford: Oxford University Press, 2014.

Tye, Michael, *The Imagery Debate*, Cambridge: MIT Press, 2000.

Vico, Giambattista, *New Science*, London: Penguin Books, 2000.

Wiener, Norbert, *Cybernetics or control and commuciation in the animal and the machine*, Cambridge MA: MIT Press, 1961.

Wollheim, Richard, *The Mind and its Depths*, Boston: Harvard University Press, 1993.

Zizek, Slavoj, "Organs Without Bodies: Gilles Deleuze", *Lacan dot com*, 2008.

3_references for *text*

Francis Alys
Sophie Astier-Vezon
Paul Auster
Saul Bellow
George Berkeley
Simon Bill
Luis Bunuel
Victor Burgin
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