

**Process Philosophy and Feminist New Materialism:
Time, Affect, and Aesthetics**

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Abstract

This project brings feminist new materialism into a closer conversation with process philosophy through the philosophical works of Alfred North Whitehead. New materialism already depends upon theoretical components that can be read as deeply process-influenced. The commitments in new materialism to rethink stubborn dualisms (human/animal, subject/object, mind/body) resonate with the basic tenets of process philosophy. Despite these similar goals and concepts, new materialism tends to engage first and foremost with continental philosophy. By drawing deeper comparisons between new materialism and process philosophy, I will highlight the benefits of a process approach and investigate further pathways for collaboration between the two trends of thought. I focus on three key themes I see as central to both new materialism and process thought: time, affect, and aesthetics. I read these themes, respectively, through three foundational texts to feminist new materialism, Karen Barad's *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (2007), Brian Massumi's *Parables for the Virtual: Movement, Affect, Sensation* (2002), and Jane Bennett's *The Enchantment of Modern Life: Attachments, Crossings, and Ethics* (2001) and *Vibrant Matter: A Political Ecology of Things* (2010).

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Chapter One. Introduction

1.0 Introduction

In the late 1990s, Manuel DeLanda and Rosi Braidotti began to use the term “new materialisms” to describe an emerging trend in critical theory.¹ Largely driven by post-humanist thought, symptoms of new materialism include an ontological and ethical interest in the vitality of matter, nonhuman agency, and a vigilant anti-anthropocentrism. Most generally, the concern of the “new materialists” is to challenge and interrogate dualistic structures of thought; in particular, binaries like human/nonhuman, mind/body, animate/inanimate, nature/culture. Contributors to the movement come from many disciplines, including but not limited to: sociology, science studies, geography, queer theory, philosophy, political science, and feminist theory. New materialism is not a unified field, but operates as an theoretical umbrella term for several interweaving inquiries, like speculative realism, affect theory, object-oriented ontology (OOO), and feminist new materialism. Feminist new materialism maintains the non-dualist motivation of the standard issue new materialism, with notable interests in matter, nature, and corporeality; as “the emancipation of mat(t)er is also by nature a feminist project.”²

¹ Rick Dolphijn Tuin and Iris van der, “New {Materialism}: {Interviews} & {Cartographies},” *New Metaphysics*, 2012, <https://doi.org/10.3998/ohp.11515701.0001.001>, 49.

² *Ibid.*, 93.

New materialism describes a movement that is not exactly ‘new,’ and not quite ‘materialism.’ Materialism, in the conventional understanding, is a substance-based philosophy that positions matter as the fundamental and ontological base of existence, wherein material processes and interactions are responsible for all things. The ‘old’ materialism is often associated with physicalist and mechanistic views of the universe. In its ‘new’ incarnation, the vibrancy, dynamism, and flux of matter are central. As opposed to viewing matter as inert or dead, matter is viewed as lively. Matter is integral, active, and entangled and as such it decenters the human subject and create opportunities for more agential ontologies.

The focus on the dynamic nature of things, as well as the ontological arguments central to feminist new materialism, have brought these new materialist scholars into closer conversation with philosophies of flux and process. Often discussed are Benedict Spinoza, Henri Bergson, and most frequently Gilles Deleuze and the works authored by Deleuze with Felix Guattari. Less frequently, but still on the roster, is the process philosophy of Alfred North Whitehead. Whitehead’s philosophy, originally published in the first half of the 20th century, initially recruited a small group of followers but is not widely studied in mainstream Western philosophy. Recently published works, notably Isabelle’s Stengers’s 2002 *Penser avec Whitehead*, have drawn more attention to his philosophy and its usefulness and value to new materialist projects.³ Despite the renewed interest in Whitehead’s work, few new materialist have engaged fully with his thought, preferring to stick with the terminology and philosophy of Deleuze and engaging first and foremost with continental philosophy. Several scholars have contributed to mapping the resonance and compatibilities of Whitehead and Deleuze, along with Deleuzian interpretations of

³ Isabelle Stengers, *Thinking with Whitehead: A Free and Wild Creation of Concepts*, ed. Michael Chase (Harvard University Press, 2011). French edition originally published in 2002.

Whitehead and Whiteheadian readings of Deleuze.⁴ Both Deleuze and Whitehead present a metaphysics of becoming that is valuable for further development in the new materialist project.

This dissertation brings together a selection of prominent texts from the realm of feminist new materialism with the extensive philosophical system of Alfred North Whitehead to examine the themes of time, affect, and aesthetics. Not to discount what Deleuzian thought brings to new materialism, but to explore what a deeper engagement with the process philosophy of Alfred North Whitehead can provide. As aspects of a process ontology already exist in feminist new materialism, via Deleuze and others, it is both timely and tempting to see how the tools developed across Whitehead's philosophy can be diffractively read with the scholarship underpinning the feminist new materialist movement. In particular, I am interested in how Whitehead's thought can maintain the general commitments and tenets of new materialism while avoiding points of critique leveled at the movement. As Whitehead's body of work provides a speculative metaphysics, a philosophy of science, and concepts relevant to social theory, I argue that Whitehead offers resolutions to gaps and omissions in new materialist thinking with the aim of activating its ethics and politics.

In the next sections of this chapters, I will give a short account of the 'feminist' strain of new materialist thinking as well as the shared affinities and politics associated with the movement. Further, I will delineate the limits and scope of this project, position the feminist new

⁴ Including but not limited to: Keith Robinson, ed., *Deleuze, Whitehead, Bergson: Rhizomatic Connections* (Palgrave Macmillan, 2009).

Steven Shaviro, *Without Criteria: Kant, Whitehead, Deleuze, and Aesthetics* (Cambridge: The MIT Press, 2009).

Michael Halewood, "On Whitehead and Deleuze: The Process of Materiality," *Configurations* 13, no. 1 (2005): 57–76.

Roland Faber and Andrea M. Stephenson, eds., *Secrets of Becoming: Negotiating Whitehead, Deleuze, and Butler* (New York: Fordham University Press, 2011).

Keith Robinson, "Back to Life: Deleuze, Whitehead and Process," *Deleuze Studies* 4, no. 1 (2010): 120–33.

materialist texts that I will discuss in the body of this dissertation, and provide a map of chapters to follow.

1.1 Feminist new materialism

In *Generational Feminism: New Materialist Introduction to a Generative Approach*, Iris Van Der Tuin credits philosopher Donna Haraway with ‘planting the seed for feminist new materialism’ in her 1988 article “Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective.”⁵ Haraway’s argument about knowledge and objectivity from the feminist perspective at first may appear as an epistemological one, but her problem is much more complicated. She writes:

“So, I think my problem, and “our” problem, is how to have *simultaneously* an account of radical historical contingency for all knowledge claims and knowing subjects, a critical practice for recognizing our own “semiotic technologies” for making meaning, *and* a no-nonsense commitment to faithful accounts of a “real” world, one that can be partially shared and that is friendly to earthwide projects of finite freedom, adequate material abundance, modest meaning in suffering, and limited happiness.”⁶

The political and ontological implications of this ‘epistemological’ question have had far-reaching impacts for feminist scholarship. Monika Rogowska-Stangret argues, alongside Van Der Tuin, that the Haraway’s essay encompasses the major themes that set the stage for feminist new materialism, “it shows the interrelations between epistemology, ontology, ethics, and politics, the agentic capabilities of ‘objects’ and methodologies, human and non-human, the impossibilities of clear-cut disconnections, and so on.”⁷

⁵ Iris van der Tuin, *Generational Feminism: New Materialist Introduction to a Generative Approach* (London: Lexington Books, 2015), 26.

⁶ Donna Haraway, “Situated Knowledges: The Science Question in Feminim and the Privilege of Partial Perspective,” *Feminist Studies* 14, no. 3 (1988): 575–99, 579.

⁷ Monika Rogowska-Stangret, “Situated Knowledges,” *New Materialism Almanac*, 2018, <https://newmaterialism.eu/almanac/s/situated-knowledges.html>.

As previously mentioned, the broadest conception of new materialism includes several porous sub-genres. The question of which authors, texts, and concerns are grouped under the banner ‘feminist’ is a debatable one. Several authors currently considered under the moniker of feminist new materialism have long been considered feminist thinkers, like Braidotti and Haraway. While others under the new materialist umbrella, like the speculative realists led by Ray Brassier, Iain Hamilton Grant, Graham Harman, and Quentin Meillassoux, are regularly called out as a boys’ club. I am unwilling to and uninterested in deciding which new materialists texts meet the criteria for being sufficiently ‘feminist.’ Rather, I accept the authors that include themselves under the banner at their word and acknowledge that all the various strands of new materialist thought tend to inform one another.

In describing some of the features of the feminist new materialism, I want to note that not all concerns are shared across this group or at the same level of interest, but, as an interrogation of arbitrary and damaging dualisms, feminism and new materialism share common ground. In *New Materialism: Ontology, Agency, and Politics*, Samantha Frost and Diane Coole categorize the new materialists concerns into three general trends:

“First among them is an ontological reorientation that is resonate with, and to some extent, informed by, developments in natural sciences: an orientation that is posthumanist in the sense that it conceives of matter itself as lively or as exhibiting agency. The second theme entails consideration of a raft of biopolitical and bioethical issues concerning the status of life and of the human. Third, new materialist scholarship testifies to a critical and nondogmatic reengagement with political economy, where the nature of, and the relationship between, the material details of everyday life and broader geopolitical and socioeconomic structures is being explores afresh.”⁸

This dissertation addresses texts that would fall under the first theme, with focuses on a post-humanist ontological and agential approach to matter.

⁸ D. Coole and S. Frost, “New Materialisms. Ontology, Agency, and Politics,” *Duke University Press*, 2010, 347, <https://doi.org/10.1215/9780822392996>, 6-7.

The post-humanist and non-anthropocentric approach rejects the human/nonhuman binary and intends to de-center the human as the central subject and central actant. As such, relations are no longer just relations between existing human actors, but relations exist between humans, nonhuman animals, objects, fungus, matter, etc. – all of which are seen as agential and generative. As Coole and Frost writes, “materiality is always something more than “mere” matter: an excess, force, vitality, relationality, or difference that renders matter active, self-creative, productive, unpredictable.”⁹ Further, relations are seen as primary. In Karen Barad agential realist framework, “relata do not preexist relations,” or in other words, what exists becomes through intra-actions.¹⁰

The move to vitalize materiality in this way has complex repercussions for typical models of causation and subject-object relations. Active and agential matter requires models that accept the interdependence and inter-relatedness of things. One way of working through how forces and things impact one another is through affect theory. Affect is an unconscious, asocial intensity. While affect is not limited to human exchanges, humans are traditionally the starting point for understanding how affect is captured and embodied. The “affective turn” barely predates the “[new] materialist turn” in presenting ideas that bodies of all kind, animate/inanimate, can impact each other as “new materialism is fascinated by affect, force, and movement as it travels in all directions.”¹¹

Despite the increased attention to new materialisms, it has also attracted many critics. When all matter is conceived of as agential and the role of the human is de-centered, how do we conceive of the real human problems, like racism, classism, colonialism, ableism, patriarchy,

⁹ Ibid, 9.

¹⁰ Karen Barad, “Posthuman Performativity: Toward an Understanding of How Matter Comes to Matter,” *Signs: Journal of Women in Culture and Society* 28, no. 3 (2003): 801–31, 815.

¹¹ Tuin and van der, “New {Materialism}: {Interviews} & {Cartographies},” 113.

heteronormativity, and others? If we are unable to establish equality even among humans, what is the benefit of a new materialist ontology? Manuel DeLanda, one of the earliest authors using the term new materialism advocates a flat ontology. A flat ontology refers to a non-anthropocentric ontological system that sets humans, animals, objects, etc. on equal ontological footing without privileging an individual or group.¹² What is the political and ethical impact of a flattened ontology? In a system that privileges relations over subjects and levels humans and objects, what are the impacts for marginalized populations?

Like this dissertation, new materialism, even at its most inclusive definitions, is overwhelmingly white and Western with nearly no acknowledgment of issues of race and limited if any engagement with scholars of color. Most new materialist ideas are not new or white. Sonia Hazard provides several examples, like Jefferson-Tatum's work on material agencies in Africana traditions, Govrindrajan's exploration of the human/animal relations in the central Himalayas, and Kim TallBear's research on vibrant matter in Dakota, Lakota, and Nakota cultures.¹³ As Kim TallBear notes, the move toward "multi-species ethnography" and entangled new materialist practices can show the importance of existing indigenous thought, but, she writes: "the field has starting points that only partially contain indigenous standpoints...indigenous peoples have never forgotten that nonhumans are agential beings engaged in social relations that profoundly shape human lives."¹⁴ Zoe Todd argues that the post-

¹² Manuel DeLanda, *Intensive Science and Virtual Philosophy* (New York: Bloomsbury Academic, 2002).

¹³ Sonia Hazard, "Two Ways of Thinking About New Materialism," *Material Religion: The Journal of Objects, Art and Belief* 15, no. 5 (2019): 629–31.

Elena Jefferson-Tatum, "Sacred Matters: Africana Religious Materialities in Africa, the Caribbean, and the Americas," in *American Academy of Religion* (San Antonio, TX, 2016).

Radhika Govindrajan, *Animal Intimacies: Interspecies Relatedness in India's Central Himalayas* (Chicago: University of Chicago Press, 2018).

¹⁴ Kim TallBear, "An Indigenous Reflection on Working Beyond the Human/Not Human," *GLQ: A Journal of Lesbian and Gay Studies* 21, no. 2–3 (2015): 230–35.

human ontological trend in scholarship represents the colonization of indigenous thought without credit or engagement.¹⁵

Whitehead's philosophical engagement is limited to the Western canon as well. Since its publication, his work has drawn frequently comparisons to Eastern schools of thought that are built on processual ideas, especially Daoism and Buddhism, though there is no evidence Whitehead was well-versed in either. In *Process and Reality*, he recognized this similarity but does not develop the comparison further; he writes: "the philosophy of organism seems to approximate more to some strains of Indian, or Chinese, thought, than to western Asiatic, or European, thought. One side makes process ultimate; the other side makes fact ultimate."¹⁶ While Whitehead's work has been all but ignored in the Western philosophical academy for decades, over 20 universities in China have established centers for process studies and Whiteheadian research.¹⁷ The only research center for process and Whitehead studies in the U.S. is located at the Claremont School of Theology. The Claremont Center for Process Studies runs two projects focused on China and Korea to foster academic exchange and translate works across linguistic divides.

¹⁵ Zoe Todd, "An Indigenous Feminist's Take On The Ontological Turn: 'Ontology' Is Just Another Word For Colonialism," *Journal of Historical Sociology* 29, no. 1 (2016): 4–22.

¹⁶ Alfred North Whitehead, *Process and Reality: An Essay in Cosmology*, ed. David Ray Griffin and Donald W Sherburne (New York: The Free Press, 1978), 7.

¹⁷ Fubin Yang, "The Influence of Whitehead's Process Thought on the Chinese Academy," *Process Studies* 39, no. 2 (2010): 342–49.

1.2 Feminist new materialism and the philosophy of Alfred North Whitehead

Over the course of the following chapters, I will bring the philosophy of Alfred North Whitehead to readings considered central to the feminist new materialist movement. The texts I have chosen are already very processual in content and in theory, making them a closer study of the specifics of Whitehead's philosophy of organism. Engaging with the texts as well as critiques, I want to explore what attention to Whitehead's philosophy can bring to the subject matter. While Whitehead's name and general notions of his work are becoming more common in feminist new materialism, his concepts and terminology rarely carry over.

In Chapter 2 of this dissertation, I provide the reader a summary of the life and works of Alfred North Whitehead. Process philosophy is grounded in notoriously difficult texts and has a smaller, but growing, group of followers. There are many reasons why the adherents of process philosophy are so few, some of them due to the theological followings it has inspired or the fact that other thinkers with process-influenced ideas have a more cemented status in critical theory. I trace Whitehead's career and accomplishments as a mathematician, turning to philosophy only in his later years. The full extent of his philosophy is too broad to examine in close detail, but I will provide an overview of the important concepts and structures from Whitehead's philosophy of organism while also giving insights on how his commitments and style can best be understood.

Chapter 3 introduces the first text, Karen Barad's 2007 book *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*.¹⁸ In this work, Barad introduces her agential realism, "an epistemological-ontological-ethical-framework" based on

¹⁸ Karen Barad, *Meeting the Universe Halfway* (Durham: Duke University Press, 2007).

her reading of Niels Bohr's interpretation of modern quantum physics. The concepts developed in this book, her rethinking of agency, 'intra-action', and agential realism are central to the feminist new materialist movement. Additionally, the diffractive reading methodology she proposes as an alternative to comparative methods is used throughout new materialism. I follow Barad's positioning of Bohr and offer a parallel track for Whitehead. As a philosopher of science with interest in quantum theory and relativity at the precipice of quantum mechanics, much of Whitehead's work as a speculative metaphysics remains relevant to the case put forward by Barad and her interpretation of Niels Bohr. Moving into her agential realism, I map Barad's expanded view of agency, as an ontological base, and engage with criticisms particular to Barad but also common to any formulation of non-human agency. Bringing together Barad and Whitehead, shows several similarities in their commitment to thinking with quantum theory. Differences arise in their respective approaches to time and endurance, which have strong implication for the subject-object relationship that is temporalized in Whitehead.

Chapter 4 bring us to the affect theory of Brian Massumi, outlined in his 2002 book, *Parables for the Virtual: Movement, Affect, Sensation*. Massumi's work is almost the oldest of the set discussed in this dissertation, however, its impact on feminist new materialism lays a groundwork for engagement with both Deleuze and science.¹⁹ Affect has become a foundational concept in feminist thought, drawing on the work of Massumi and the Silvan Tompkins-inspired work of Eve Sedgwick and Adam. Drawing from philosophy and physio-psychology, respectively, the two strains of theory have continued to develop across disciplines; though they are rarely entirely discrete. I will provide a brief overview of the development of these branches of affect theory and the criticisms and questions that surround their applications. Using

¹⁹ Brian Massumi, *Parables for the Virtual* (London: Duke University Press, 2002).

these critiques as a line of inquiry, I introduce the concept of “feeling” and “prehension” developed in Whitehead’s metaphysics. I argue that Whitehead’s process approach provides a relational model similar to that of affect, but also skirting some of the critiques in original ways that maintain the underlying philosophical commitments of feminist new materialism.

Chapter 5 discusses takes two texts by Jane Bennett, reading them unified gesture toward her “vital materialism.” In *The Enchantment of Modern Life*, Jane Bennett argues that the modern world is not the disenchanted place Max Weber has proposed, but that modern life is full of enchantment and enchanting experiences if we cultivate the habits to perceive and enjoy them.²⁰ Bennett draws from cross-disciplinary sources to create alter-stories of the enchanting experiences of modernity. Using Bennett’s enchantment as a starting point within feminist new materialism, I will read her concept through Whitehead’s writing on aesthetics and John Dewey’s aesthetic experience. I also work through key concepts found her Bennett’s *Vibrant Matter*, which outlines her vibrant materialism more fully.²¹ In particular, I will engage with the implications of late capitalism on aesthetics experience and the power and ethics of a process aesthetics.

The aim of this work is to bring feminist new materialism in closer conversation with process philosophy, specifically the work of Alfred North Whitehead. Process philosophy is mind-bending and complex, but also powerful and possibly humane and revolutionary. Much of feminist new materialism is already working with similar ideas and concepts that find their roots in process philosophy, but future projects could be greatly enhanced by deeper engagement with this philosophical tradition.

²⁰ Jane Bennett, *The Enchantment of Modern Life: Attachments, Crossings, and Ethics* (Princeton: Princeton University Press, 2001).

²¹ Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham: Duke University Press, 2010).

Chapter Two. Lure for Feeling

“Pythagoras and Plato had let their views of the universe be shaped by mathematics, and I followed them gaily. It was Whitehead who was the serpent in this paradise of Mediterranean clarity. He said to me once: “You think the world is what it looks like in fine weather at noon day; I think it is what it seems like in the early morning when one first wakes from deep sleep.” I thought his remark horrid, but could not see how to prove that my bias was any better than his. At last he showed me how to apply the technique of mathematical logic to his vague and higgledy-piggledy world, and dress it up in Sunday clothes that the mathematician could view without being shocked. This technique which I learned from him delighted me, and I no longer demanded that the naked truth should be as good as the truth in its mathematical Sunday best.¹

2.0 Introduction

The Concept of Nature, one of Alfred North Whitehead’s earliest works of philosophy, was originally published 100 years ago. Following this book came several more, perhaps most notably *Process and Reality*, which became the cornerstone of process thought and outlined his metaphysical system. After its initial emergence a century ago, process philosophy fell out of general philosophical scholarship. However, a steady interest in Whitehead and his work has developed and grown significantly in recent years with the advent of new materialism, speculative realism, and the occasional speculative materialism. Until recently, both continental and analytical Western scholarship have avoided and dismissed Whitehead’s philosophy, particularly *Process and Reality*, on the grounds that it is impenetrably written, poorly structured,

¹ Bertrand Russell, *Portraits from Memory and Other Essays* (New York: Simon and Schuster, 1956), 39-40.

and often labeled as ‘unintelligible.’² While I personally enjoy it, even the strongest advocates will agree that *Process and Reality* is not a linear read, but a circular journey that requires movement, leaps, and many re-reads.

In his review of *Process and Reality*, Henry Nelson Wieman wrote:

“Not many people will read Whitehead’s recent book in this generation; not many will read it any generation. But its influence will radiate through concentric circles of popularization until the common man will think and work in the light of it, not knowing whence the light came. After a few decades of discussion and analysis one will be able to understand it more readily than can now be done.”³

I am not sure if we have reached the point where Whitehead can be better understood, as Wieman proposes, though I hope this work contributes to move the dial towards greater understanding and identifying the light of process thought. The challenges that Whitehead’s tinkering puts forth and the problems that his philosophy anticipated are demand enough to reconsider the value of process thought in the face of modern problems.

In this chapter, I will introduce Whitehead’s philosophy to the extent that it is necessary for the arguments in this dissertation. I will not provide a full summary of the complexity of his thinking but explore the overarching themes in his philosophical works, with focus on the elements necessary for understanding Whitehead’s theories of time and endurance, and philosophy of feeling and aesthetics. Beginning with a brief biographical sketch, I position Whitehead and his work in time and among his contemporaries. Providing a general review of his philosophy, I will also introduce and engage with some of Whitehead’s concepts that will be explored more fully in the following chapters. Through this overview, I account for some of the

² While Whitehead’s work has been largely ignored in Western scholarship, some philosophers have had interests in his work, notably Gilles Deleuze, Hannah Arendt, and Maurice Merleau-Ponty. Ronny Desmet and Andrew Irvine, “Alfred North Whitehead,” *Stanford Encyclopedia of Philosophy*, 2018.

³ Henry Nelson Weiman, “A Philosophy of Religion,” *The Journal of Religion* 10 (1930): 137–39, 137.

difficulty and criticism associated with process philosophy and its rejection by the academic mainstream.

2.1 Altie

Whitehead was born in Ramsgate, Kent on the southeast coast of England on February 15, 1861 where his father was an Anglican clergyman. He was educated at Trinity College, Cambridge in mathematics and remained there as an instructor for many years. In 1890 he married Evelyn Wade, with whom he had 3 children. Whitehead attributed much of his success to his partnership with Wade, writing: “The effect of my wife upon my outlook on the world has been so fundamental that it must be mentioned as an essential factor for my philosophic output.”⁴ During this period, he co-authored the landmark three-volume *Principia Mathematica* with Bertrand Russell. In 1910, the Whiteheads moved to London where he later accepted another position in mathematics at the University of London, Imperial College. In London, Whitehead shifted focus from applied mathematics to mathematical physics and relativity, authoring an alternative version of Einstein’s general theory of relativity. He also took on several administrative functions at the university, advocating for educational equality for women and writing several essays on the topic of education.⁵

In 1914, Gertrude Stein and Alice B. Toklas visited the Whiteheads in England. The declaration of war extended their stay to several months. In Stein’s book, *The Autobiography of Alice B. Toklas*, Stein, as Alice, names Whitehead as one of the true geniuses met in the narrator’s life: “The three geniuses of whom I wish to speak are Gertrude Stein, Pablo Picasso,

⁴ Alfred North Whitehead, *Science and Philosophy* (Open Road Media, 2014).

⁵ Michael Halewood, *A. N. Whitehead and Social Theory* (London: Anthem Press, 2011), 2.

and Alfred Whitehead.”⁶ Of the batch, Whitehead, the quiet and gentle-tempered mathematician, stands out against the other famously big personalities. Yet Stein and Whitehead were linked by another genius. Both were heavily influenced by the same figure, Stein’s former teacher who Whitehead refers to as, “that adorable genius, William James.”⁷ The impact of James’s work on Whitehead ripples through his philosophy.

WWI brought tragedy to the Whiteheads, as “a whole generation of his English pupils was nearly wiped out;” and in 1918, their younger son, an air force pilot, was shot down and killed in France.⁸ The impact of this loss has been attributed by Bertrand Russell and others as a motivational factor for Whitehead’s turn to philosophy. After decades as a mathematician, instructor, and administrator, at the age of 63 Whitehead was offered a professorship in philosophy at Harvard University and the Whiteheads moved to America. The majority of his philosophical works were authored at this time. Whitehead lectured with greater frequency than required by his position, as exchanges with his students were a source of great inspiration. He retired from Harvard in 1937 and passed away ten years later at the age of 86. Per his request, his *nachlass* was destroyed after his death leaving very few documents or letters, as Whitehead was notoriously delinquent at returning correspondence.

2.2 Thinking like Whitehead

Most texts dedicated to analyzing Whitehead’s philosophical works will provide a warning in the opening pages – to remember that Whitehead was first a mathematician. From the early works of Victor Lowe, Ivor LeClerc, and Dorothy Emmet to the more recent scholarship on

⁶ Gertrude Stein, *The Autobiography of Alice B. Toklas* (New York: Harcourt, Brace and Company, 1933), 9.

⁷ Alfred North Whitehead, *Science and the Modern World* (London: Cambridge University Press, 1925), 3.

⁸ Victor Lowe, *Understanding Whitehead* (The Johns Hopkins University Press, 1966), 9.

his philosophy, authors rarely skip a mention of Whitehead's journey from math to philosophy. Whitehead's career as a philosopher did not begin in earnest until his 60s, where the lore states that the first philosophy class he attended was the first lecture he gave on topic at Harvard.⁹ Beyond an interesting biographical note referring to his long career as a successful mathematician, the call to remember Whitehead's mathematical background is advice on how to understand his approach and his thinking. Isabelle Stengers demonstrates this with great clarity and marks a reintroduction of Whitehead into critical thought.¹⁰

“Whitehead was a mathematician,” Stengers writes, “and mathematicians are they who do not bow down before contradictions but transform them into an ingredient of the problem.”¹¹ For a mathematician, the problem must be well-formulated; the ‘ingredients’ of the problem must be understood; one cannot ‘forget what is presupposed’ in the formulation of the problem.¹² *Principia Mathematica* provides an illustrative example of not ‘forgetting what is presupposed,’ as the second half of the first volume and first 86 pages of the second volume are devoted to proving that $1+1=2$. Upon completion of the proof, is the line: “The above proposition is occasionally useful.”¹³ Mathematics is a field of pure abstraction in which there is no “particular instance.” Whitehead writes “no mathematical truths apply merely to fish, or merely to stones, or merely to colours.”¹⁴ From mathematical abstractions, to scientific abstractions to the interrogation of philosophical abstractions – the ‘ingredients’ of the problem must be understood.

⁹ Halewood, A. N. *Whitehead and Social Theory*, 2.

¹⁰ “As I will not tire of emphasizing,” Stengers writes, “Whitehead was a mathematician.” In Isabelle Stengers, *Thinking with Whitehead: A Free and Wild Creation of Concepts*, ed. Michael Chase (Harvard University Press, 2011), 119.

¹¹ *Ibid.*, 15.

¹² *Ibid.*, 35.

¹³ Alfred North Whitehead and Bertrand Russell, *Principia Mathematica: Volume II* (Cambridge: Cambridge University Press, 1927), 86.

¹⁴ Whitehead, *Science and the Modern World*, 26.

For a mathematician, there may be more than one way to the solution of a problem, some ways more elegant, others more complicated or technical. When Whitehead developed his alternative theory of relativity, it was not because he took issue with the result of Einstein's general theory of relativity, but with the way in which it was explained. Whitehead felt it lacked 'coherence with basic intuitions.'¹⁵ Before publishing his book, *The Principle of Relativity with Application to Physical Science* in 1922, Whitehead is said to have met Einstein and attempted to sway him toward his way of thinking. "Einstein, however, was not inclined to give up a theory [curvature of space] against which neither logical nor experimental reason could be cited, nor considerations of simplicity and beauty. Whitehead's metaphysics did not seem quite plausible to him."¹⁶

In *Understanding Whitehead*, Victor Lowe poses the question "Mathematician or Philosopher?" to which he replies that the only possible response is: "At all times, both."¹⁷ Whether as a mathematician or a philosopher, Whitehead was driven to develop coherent frameworks that help us understand experience. Lowe suggests that the definition Whitehead provides to the term 'speculative philosophy' bridges his mission, synthesizing his work as a mathematician to the developments that structured his thinking as a philosopher:

"Speculative Philosophy is the endeavor to frame a coherent, logical, necessary system of general ideas in terms of which every element of our experience can be interpreted. By this notion of 'interpretation' I mean that everything of which we are conscious, as

¹⁵ Desmet and Irvine, "Alfred North Whitehead."

¹⁶ P. Frank, *Einstein: His Life and Times* (Cambridge: Da Capo Press, 2002), 189. In Ronny Desmet, "Did Whitehead and Einstein Actually Meet?," quoted in *Researching Whitehead: System and Adventure*, ed. Franz Riffert and Hans-Joachim Sander (Freiburg: Verlag Karl Alber, 2008), 127–55.

"It is important to stress that Whitehead had no intention of improving the predictive content of Einstein's GTR [General Theory of Relativity], only the explanatory content. However, Whitehead's replacement of Einstein's explanation with an alternative explanation entailed a replacement of Einstein's formulae with alternative formulae; and these different formulae implied different predictions. So it would be incorrect to say that Whitehead's ATG [Alternative Theory of Gravitation] is empirically equivalent to Einstein's GTR. What can be claimed, however, is that for a long time Whitehead's theory was experimentally indistinguishable from Einstein's theory." Desmet and Irvine, "Alfred North Whitehead."

¹⁷ Lowe, *Understanding Whitehead*, 291. In addition to *Understanding Whitehead*, Lowe is the author of a two-volume biography on Whitehead that traces his life and works, the only attempt of its kind.

enjoyed, perceived, willed, or thought, shall have the character of a particular instance of the general scheme. Thus the philosophical scheme should be coherent, logical, and in respect to its interpretation, applicable and adequate. Here ‘applicable’ means that some items of experience are thus interpretable, and ‘adequate’ means that there are no items incapable of such interpretation.”¹⁸

For Whitehead these are all ‘adventures,’ necessarily bold and risky endeavors for coherence and adequacy. As he writes in his last book, “[t]he aim of philosophy of sheer disclosure.”¹⁹

I resist the urge to say that any insight into Whitehead’s oeuvre is the “key” to his thinking or his philosophy, though Stengers offers a reading of Whitehead’s body of work that poses him as a mathematician first and uses this position to help clarify a philosophy that is often criticized as difficult or unintelligible. In doing so, she has helped to popularize his philosophy, inspiring many more scholars to ‘adventure’ under the banner of “thinking with Whitehead.” To see Whitehead as a philosopher, or a mathematician, or as theologian (as some do), is still to see him in one dimension. Stengers provides a current engagement to see him “at all times, both” a philosopher and mathematician. There are still many more dimensions to view his thinking and on which to pivot his work. Evelyn Wade Whitehead is quoted as saying:

“His thinking is a prism. It must be seen not from one side alone, but from all side, then from underneath and overhead. So seen, as one moves around it, the prism is full of changing lights and colours. To have seen it from one side only is not to have seen it.”²⁰

2.3 Whiteheadian terminology

While clarity can be found turning over his thought and with serious study, the language he chooses to express his ideas, while affective, can also be confusing. His terminology is notorious and several glossaries have been authored to help interested readers keep track of his

¹⁸ Whitehead, *Process and Reality: An Essay in Cosmology*, ed. David Ray Griffin and Donald W Sherburne (New York: The Free Press, 1978), 3.

¹⁹ Alfred North Whitehead, *Modes of Thought* (New York: The Free Press, 1968), 49.

²⁰ Lucien Price, *The Dialogues of Alfred North Whitehead* (Boston, 2001), 16.

usages which often bend away from conventional definitions and tend to morph and change over his philosophical work. In *Modes of Thought*, Whitehead describes the challenges of using language to convey his philosophy:

“Language halts behind intuition. The difficulty of philosophy is the expression of what is self-evident. Our understanding outruns the ordinary usage of words. Philosophy is akin to poetry. Philosophy is the endeavor to find a conventional phraseology for the vivid suggestiveness of the poet.”²¹

Whitehead’s work is littered with words that he transforms in ‘terms,’ and in some cases, providing updated definitions of how they should be interpreted. In other cases he invents words entirely; he coined the term “creativity.”²² Sometimes he uses words to conjure associations without expressly intending their literal definition. Frequently he quotes scriptures or Romantic poetry to illustrate his thinking and provide the “vivid suggestiveness” he wants to express. He is particularly fond of references to Wordsworth and Shelley, as their work, Whitehead argues, embodies the philosophy of organism. In *Companion to Process and Reality*, Elizabeth Kraus defends the slippery character of his terminology, as it does “not in any way imply that process philosophy is de jure fuzzy, but that that is must contain an element of vagueness in its language, its concepts themselves must have ragged edges.”²³ For Whitehead, whose reality is not that of a sunny day but of a foggy awakening, the affective and evocative use of language is necessary for the world he describes. As such, it is often helpful to quote passages of Whitehead’s text in full, a technique used by Stengers as well, to see his descriptions *in situ* and allow the reader to draw as much as possible from the specifics of his word choice.

²¹ Whitehead, *Modes of Thought*, 49-50.

²² Michael Halewood, “Death, Entropy, Creativity and Perpetual Perishing: Some Thoughts from Whitehead and Stengers,” *Social Sciences* 4 (2015): 655–67, 663.

In *Process and Reality*, Whitehead writes, “In the abstract language here adopted for metaphysical statement, ‘passing on’ becomes ‘creativity,’ in the dictionary sense of the verb *create*, ‘to bring forth, beget, produce.’ (PR 213)

²³ Elizabeth M. Kraus, *The Metaphysics of Experience: A Companion to Whitehead’s Process and Reality*, 2nd ed. (New York: Fordham University Press, 1998), 5.

One particularly difficult term Whitehead employs in his system is God. God, for Whitehead is not a Judeo-Christian theological figure, but a necessary element that rounds out his metaphysics. I mention God here to draw attention to it first as a problem of terminology. The concept of God has more prominence in his earlier works, like *Science and the Modern World* and *Process and Reality*, but the use of the terms becomes more limited in his later work *Adventure of Ideas*. John Cobb notes that Whitehead likely did not fully comprehend the difficulty in convincingly using the word God in a secular sense. But that his later books, with fewer references to God, indicate he did not want to abandon the concept but possibly began to realize that its presence would limit his audience.²⁴

Beyond the terminology in the system, the mathematician-philosopher who rarely answered letters, also rarely edited or proofread his philosophical work. *Process and Reality*, already a challenging and technical text, was printed riddled with errors and editorial oversights. The state of his print editions seriously contributed to the difficulty faced by readers and likely discouraged other scholars from engaging with his texts. His handwriting was difficult to decipher and the typists who prepared his copies likely had great difficulty. Ahead of the publication for his lectures, a telegram was transmitted which proved “a bad omen for what would happen to the book: “...TITLE GIFFORD LECTURES IS PROCESS AND REALITY SYLLOBUS FOLLOWING SHORTLY BY MAIL WHITCHCAD.”²⁵ Two prominent Whitehead scholars, David Ray Griffin and Donald Sherburne, edited, corrected, and proofed a new corrected edition of *Process and Reality* published in 1978 which provided a much clearer text for future scholars.

²⁴ John B. Cobb Jr., “Whitehead, God, and a Contemporary Rift Among Whiteheadians,” *Process Studies* 45, no. 2 (2016): 132–42, 141.

²⁵ Whitehead, *Process and Reality: An Essay in Cosmology*, vii.

2.4 The philosophy of organism

The limitations of this chapter and this dissertation prevent an exhaustive recounting of the development, growth, and focuses of Whitehead's philosophy over the course of his philosophical writings. Stengers's *Thinking with Whitehead* provides an insightful and modern reading of Whitehead's work, tracing his thought book by book through his philosophical works. As the scope of this work is much less ambitious, I want to instead draw attention to the overall themes of his philosophy and some of the central concepts and terms he employs that will prepare the reader for the following chapters of analysis. In this section, I will provide an overview of the bifurcation of nature, the fallacy of misplaced concreteness, Whitehead's use of the word 'organism,' actual entities and actual occasions, prehensions, creativity, eternal objects, and God.

Whitehead's philosophy is considered a process philosophy, which subscribes to an ontology of becoming that emphasizes change over static substance. William James and Henri Bergson, both influential to Whitehead's work, are also considered in the line-up of process philosophers. The process line of thinking dates back to the Greek philosopher Heraclitus, to whom the adage and process tagline 'you never step in the same river twice' is frequently accredited. Even though process thinking extends before and after Whitehead, his work is considered central to process thought and frequently 'process philosophy' and Whitehead are used synonymously if not interchangeably.

Stengers, Halewood, and others argue that Whitehead's 'bifurcation of nature' can be read as a through line, or red thread, woven across his work. First described in the 1920 *book Concept of Nature*, Whitehead writes:

“What I am essentially protesting against is the bifurcation of nature into two systems of reality, which, in so far as they are real, are real in different senses. One reality would be the entities such as electrons which are the study of speculative physics. This would be the reality which is there for knowledge; although on this theory it is never known. For what is known is the other sort of reality, which is the byplay of the mind. Thus there would be two natures, one is the conjecture and the other is dream. Another way of phrasing this theory which I am arguing against is to bifurcate nature into two divisions, namely into the nature apprehended in awareness and the nature which is the cause of awareness...The meeting point of these two natures is the mind, the causal nature being influent and the apparent nature being effluent.”²⁶

Whitehead is calling out against is the division of nature into two realities, one accessible through science and the other through human experience. The bifurcation takes the mechanistic universe of atoms, “real and yet valueless,” and sets it against the “psychic additions” of the human mind like sound, color, and texture.²⁷

This bifurcation can be seen in different incarnations in modern thought. Whitehead shows how knowledge itself becomes implicated in this bifurcation through education systems that separate fields of study into artificial disciplines, creating divisions that concentrate and abstract from the whole.²⁸ Halewood, in *A.N. Whitehead and Social Theory*, furthers this discussion, using Whitehead’s bifurcation of nature to illustrate the bifurcation between the biological “natural” body and the social / cultural body as well as the distinction between public and private in social theory.²⁹ The bifurcation of nature abstracts parts from the whole, but Whitehead’s philosophy works to build resistance against these modes of thinking and theories that depend upon and reproduce bifurcation. This commitment, as Stengers notes, mean that

²⁶ Alfred North Whitehead, *Concept of Nature* (Cambridge University Press, 1920), 30-31.

²⁷ Bruno Latour, “What Is Given in Experience?,” in *Thinking with Whitehead: A Free and Wild Creation of Concepts* (Harvard University Press, 2011), xii.
Whitehead, *Concept of Nature*, 29.

²⁸ Whitehead, *Science and the Modern World*, 245.

²⁹ Halewood, *A. N. Whitehead and Social Theory*, 9.

“[e]very statement that makes nature bifurcate will be a defeat” and his philosophy and concepts will have to avoid the pitfalls of bifurcation.³⁰

Whitehead almost jokes about the absurdity of the bifurcation of nature, claiming that the result of this way of thinking elevates the human mind as the source of vibrant qualities and reduces the natural world as merely mechanistic:

“Thus, nature sees itself credited with that which, in fact, should be reserved for ourselves: the rose for its smell, the nightingale for its song, and the sun for its brilliance. The poets are entirely wrong. They should address their songs to themselves, and should turn them into odes of self-congratulations for the splendor of the human mind. Nature is a stupid business, bereft of sounds, odors and colors; it is only matter in a hurry, without end and without meaning.”³¹

In committing to theorizing without bifurcation, Whitehead also recognizes how pervasive the tendency toward bifurcation is as an inherited mode of thinking; “like the air we breathe, such a form is so translucent, and so pervading, and so seemingly necessary, that only by extreme effort can we become aware of it.”³² As such, his interest in metaphysics and first principles is not surprising. The mathematician behind *Principia Mathematica* exercises his tenacity in *Process and Reality*, showing how far down the bifurcation of nature goes and constructs a view of nature that does not reinforce or reintroduce this split.

The interrogation of abstractions is one of the ways to counter the trend to bifurcate. For Whitehead, “[p]hilosophy is the criticism of abstractions which govern special modes of thought.”³³ Far from demonizing abstraction, Whitehead recognizes the necessity of abstraction for thought. However, he insists upon understanding what is presupposed in abstraction, as what is abstracted is always abstracted out of its environment. Practices of abstraction can lead to the

³⁰ Stengers, *Think. with Whitehead A Free Wild Creat. Concepts*, 38.

³¹ Whitehead, *Science and the Modern World*, 68-69.

³² Alfred North Whitehead, *Adventures of Ideas* (New York: The Free Press, 1967), 12.

³³ Whitehead, *Modes of Thought*, 48-49.

fallacy of misplaced concreteness, an reconfiguration of the bifurcation of nature, in which an abstraction is taken as concrete. He writes:

“The advantage of confining attention to a definite group of abstractions, is that you confine your thoughts clear-cut definite things, with clear-cut definite relations... We all know those clear-cut trenchant intellects, immovable encased in a hard shell of abstractions. They hold you to their abstractions by the sheer grip of personality. The disadvantage of exclusive attention to a group of abstractions, however well-founded, is that, by the nature of the case, you have abstracted from the remainder of things. In so far as the excluded things are important in your experience, your modes of thought are not fitted to deal with them. You cannot think without abstractions; accordingly it is of the utmost importance to be vigilant in critically revising your *modes* of abstraction.”³⁴

Through these interrelated ideas, the bifurcation of nature and the fallacy of misplaced concreteness, we see two facets of the prismatic problem that Whitehead’s philosophy sets out to resolve and the thematic red thread that runs through his work.

As a philosophy of process, change, and flux, Whitehead is opposed to certain components of a substance-based philosophy. The problem of a substance returns squarely to the bifurcation of nature, wherein “[t]he whole being of substance is as a substratum for attributes.”³⁵ Under scrutiny, substance becomes matter existing in space and time on which attributes are grafted. Not only does it reinforce the bifurcation, but relations and interconnection are lost when substance is the base fact. When substance is primary, Halewood describes, “Each item becomes a solitary thing, an object, unrelated to any other. It is therefore impossible for information to pass between such object. This position both denies, and is unable to account for, any notions of dynamism, fluency or process.”³⁶ Hence, the focus on substance is in opposition to a focus on flux as well as abstracting things away from their environments, making them appear singular and unrelated.

³⁴ Whitehead, *Science and the Modern World*, 72-73.

³⁵ Whitehead, *Concept of Nature*, 21.

³⁶ Halewood, A. N. *Whitehead and Social Theory*, 11-12.

Substance-based thought has further epistemological and linguistic implications. The subject-predicate form of statement continues to reinforce the separateness of things from each other and object from their attributes, but it also separates the “knower” and the “known.” Whitehead uses the example of the statement “This water is hot” to demonstrate that a specific vessel of water is “being hot.”³⁷ Hot is an abstracted attribute that is applied to the water. “Hot” exists for us as an abstract idea in the mind that can be applied to things that display a raised temperature, but in the world there is not “hot” unless something is “being hot,” like air, rocks, quiche, or a dog’s belly. Whitehead explains:

“A substantial thing can acquire a quality, a credit – but real landed estate, never...All modern epistemologies, all modern cosmologies, wrestle with this problem. There is, for their doctrine, a mysterious reality in which the background, intrinsically unknowable by any direct intercourse. In the foreground of direct enjoyment, there is the play and interplay of various qualities diversifying the surface of the substantial unity of the solitary individual in question.”³⁸

This is how we see the bifurcation of nature operating with different consequences in a substance-focused philosophy, and it is against this backdrop that Whitehead’s philosophy takes shape.

Whitehead’s process philosophy is often termed (by him and others) ‘the philosophy of organism.’ Organism, in this sense, is not a strictly biological term in his usage. His choice of the word should not be taken as indicative of life or living creatures, but rather that organisms (living and non-living) exist under sets of internal and external relations. For Whitehead, electrons, atoms, and molecules are organisms as well as amoebae, live oak trees, and humans. He writes: “Biology is the study of the larger organisms; whereas physics is the study of the smaller organisms...The organisms of biology include as ingredients the smaller organisms of

³⁷ Whitehead, *Adventures of Ideas*, 132.

³⁸ *Ibid.*, 133.

physics...”³⁹ Whether living or not, organisms interact with each other and possess differing levels of complexity. Though Whitehead continues to use ‘organism’ as descriptive of his philosophy, the general ideas of organism become technically parsed and renamed in *Process and Reality* in his formulations of ‘nexus’ and ‘society’ (discussed further in Chapter Three).

The basic unit of Whitehead’s philosophy is called the “actual entity” or “actual occasion.” Whitehead often uses these terms interchangeably, but at this time I will use the term actual entity for consistency in this chapter. In its usage, “entity” implies a materiality that would be incorrect, while “occasion” has spatio-temporal implication that can be useful to draw attention to those factors in his philosophy. Whitehead defines the term as follows:

“‘Actual entities’ – also termed ‘actual occasions’ – are the final real things of which the world is made up. There is no going behind actual entities to find anything more real. They differ among themselves: God is an actual entity, and so is the most trivial puff of existence in far-off empty space. But, though there are gradations of importance, and diversities of function, yet in the principles which actuality exemplifies all are on the same level. The final facts are, all alike, actual entities; and these actual entities are drops of experience, complex and interdependent.”⁴⁰

Actual entities are units of process and the building block of existence often described as drops, pulses, or buds of experience. For Whitehead, experience can be understood as the synthesis of what is given or apprehended from the world, the multiplicity, into a “private unity.”⁴¹ No ‘thing’ is an actual entity, but all things are ‘societies’ of actual entities. As a unit of process, the actual entity does not, as itself, change. It becomes a subject through its experience, unifying the data perceived or apprehended into a novel ‘superject’ which then perishes. Every actual entity is a unique, novel “conrescence of prehensions” or a new unity of feelings and felt data.⁴² After the unifying conrescence, the actual entity perishes, becoming an object of data for the becoming of

³⁹ Whitehead, *Science and the Modern World*, 129.

⁴⁰ Whitehead, *Process and Reality: An Essay in Cosmology*, 18.

⁴¹ Kraus, *The Metaphysics of Experience: A Companion to Whitehead’s Process and Reality*, 8.

⁴² Whitehead, *Process and Reality: An Essay in Cosmology*, 23.

other entities. He explains, “An actual entity is to be conceived both as a subject presiding over its own immediacy of becoming, and a superject which is the atomic creature exercising its function of objective immortality.”⁴³ Hence, the actual entity is a subject-superject. In process, the distinction of subject or subject-superject and object are temporal.

Kraus illustrates how the actual entity as a “drop of experience” is essentially a quantum of space-time.

“[T]he spacetime of experience must have extended and undivided spatio-temporal units as its ultimate constituents: atomic blocks of experience. He maintains therefore that a spatio-temporal quantum duration results from the prehensive process, and undivided pulse of spacetime in which the achieved pattern is displayed. This quantum has limits, a beginning and an end, so to speak but it appears all at once.”⁴⁴

Though the actual entity goes through ‘phases’ in the process of becoming, they are not a linear progression and they are not actually divisible discrete stages of becoming – they appear like a quantum jump. The ‘becoming’ of an actual entity creates time and space. Again, actual entities are not things, they are occasions of experience. The comparison to quanta is intended as illustrative of process not to imply that actual entities are synonymous with quantum particles. Halewood argues that “their role is not to describe the world “as it is” but to enable novel conceptual constructions which more fully and adequately account for the diversity and process of reality.”⁴⁵ The focus on experience and events in this way establishes the base of process philosophy, in contrast to other substance-based philosophies.

The ‘becoming’ of the actual entity is also what it *is*, or as Whitehead says, “*how* an entity *becomes* constitutes *what* that actual entity *is*.”⁴⁶ An actual entity *is* a becoming, a “concrecence of prehensions.” Prehensions are a central concept to the philosophy of organism

⁴³ Ibid., 45.

⁴⁴ Kraus, *The Metaphysics of Experience: A Companion to Whitehead’s Process and Reality*, 21.

⁴⁵ Halewood, A. N. *Whitehead and Social Theory*, 30.

⁴⁶ Whitehead, *Process and Reality: An Essay in Cosmology*, 23.

that describe how an actual entity relates to and internalizes felt data from other entities. There are different types of prehensions, but most generally, they are vector feelings; “for they feel what is *there* and transform it into what is *here*.”⁴⁷ When an actual entity prehends other entities, it is objectifying the feelings of the other prehended entities. Prehensions are the “vehicle” by which data is grasped by an actual entity. Prehension can be positive prehensions, which contribute to the concrescence of an actual entity, or negative prehensions, which eliminate data from inclusion in concrescence. Concrescence, then, fuses together the prehensions creating “*what the actual entity is*.”⁴⁸ Whitehead writes, “Concrescence is the name for the process in which the universe of many things acquires an individual unity in a determinate relegation of each item of the ‘many’ to its subordination in the constitution of the novel ‘one.’”⁴⁹

In this way, each actual entity is entirely novel from those that precede it. This is what Whitehead calls creativity:

“‘Creativity’ is the principle of *novelty*. An actual occasion is a novel entity diverse from any entity in the ‘many’ which it unifies. Thus ‘creativity’ introduces novelty into the content of many, which are the universe disjunctively. The ‘creative advance’ is the application of this ultimate principle of creativity to each novel situation which it originates.”⁵⁰

The many prehended actual entities become one, plus one – as the novelty of the becoming actual entity achieves its satisfaction and perishes, becoming immortal objectively as data for the next becoming entity.

While the actual entity can be thought of as a “cell with atomic unity,” concrescence as the process of becoming, can be thought of as having two phases or ‘poles.’⁵¹ Whitehead draws

⁴⁷ Ibid., 87.

⁴⁸ Ibid., 23.

⁴⁹ Ibid., 211.

⁵⁰ Ibid., 21.

⁵¹ Ibid., 227.

on William James, not only for his description of actual entities as “drops of experience” but he also quotes James to explain that the division of phases in concrescence is strictly for the purposes of analysis. Citing “[t]he authority of William James,” Whitehead quotes:

“Either your experience is of no content, of no change, or it is of a perceptible amount of content or change. Your acquaintance with reality grows literally by buds or drops of perception, Intellectually and on reflection you can divide these into components, but as immediately given, they come totally or not at all.”⁵²

The actual entity is dipolar, with a mental and physical pole or phase. The chosen terminology, physical and mental poles, lends itself to confusion. The physical pole is the first receptive phase in which the feeling of the other is felt, this is a “physical inheritance.”⁵³ The mental pole is conceptual and individual. Whitehead writes, “[t]he mental pole introduces the subject as a determinant of its own concrescence.”⁵⁴ The term mental in “mental pole” does not imply mentality as consciousness at the level of an actual entity, but rather it is intended to allude to a mode of feeling.⁵⁵ The temporality of actual entity is rooted in this physical pole which receives its inheritance of prehensions in the world, while the mental pole is valuative, individual, and private. Whitehead explains, “Every actual entity is ‘in time’ so far as its physical pole is concerned, and is ‘out of time’ so far as its mental pole is concerned. It is the union of two worlds, namely the temporal world, and the world of autonomous valuation.”⁵⁶

It is important to note that by ascribing a physical pole and mental pole to actual entities Whitehead is not trying to sneak a mind/matter dualism through the back door. The mental and

⁵² William James, *Some Problems of Philosophy: A Beginning of an Introduction to Philosophy* (London: Longmans, Green, and Co., 1916). Quoted in Whitehead, *Process and Reality: An Essay in Cosmology*, 68.

⁵³ Whitehead, *Process and Reality: An Essay in Cosmology*, 108.

⁵⁴ *Ibid.*, 248.

⁵⁵ *Ibid.*, 56

⁵⁶ *Ibid.*, 248

physical poles of the actual entity are dual inseparable processual aspects without ontological difference. He explains,

“[T]he dipolar character of concrescent experience provides in the physical pole for the objective side of experience, derivative from an external actual world, and provides the mental pole for the subjective side of experience, derivative from the subjective conceptual valuations correlate to the physical feelings.”⁵⁷

This dipolarity (which he occasionally calls bipolarity) is meant to explain how every actual entity has an experience of “past world” (the objective data prehended from previous actual entities) in the physical pole and the “possibilities for its own becoming,” (the feeling of that prehended data in synthesis to the subjective form of the actual entity) as part of its mental pole.⁵⁸

The mental pole is not granting consciousness to actual entities, rather, it means that there is a proto-mental quality to all actual entities and therefore some kind of mentality is distributed across all existence. Electrons, rocks, pineapples, puppies, etc. with or without a brain or central nervous system, without the distinction of being “alive,” everything has a mental quality. This philosophical position is commonly referred to as panpsychism.⁵⁹ Many philosophers and scholars disparage panpsychism as nonsense. Colin McGinn’s comments are typical of the scholarly response when he describes panpsychism as “a complete myth, a comforting piece of utter balderdash...and isn’t there something vaguely hippyish, i.e. stoned, about the doctrine?”⁶⁰

Despite the criticism, the panpsychic position addresses real philosophical issues. The mind-body problem and the emergence of consciousness are both potentially resolved by the

⁵⁷ Ibid., 277

⁵⁸ C. Robert Mesle, *Process-Relational Philosophy: An Introduction to Alfred North Whitehead* (Templeton Foundation Press, 2008), 101.

⁵⁹ Panpsychism is also referred to by other names: panexperientialism (John B. Cobb, David Ray Griffin), psychicalism (Charles Hartshorne)

⁶⁰ Colin McGinn, “Hard Questions - Comments on Galen Strawson,” *Journal of Consciousness Studies* 2 13, no. 10–11 (2006): 90–99, 93.

idea of mentality in germ in all things. But for Whitehead, aside from the hard problems, it is necessary to maintain the metaphysical scheme's coherence. According to Whitehead's ontological principle, "there is nothing which floats into the world from nowhere."⁶¹ Things and their reasons must be found or referable actual entities, or in other words, "everything is positively somewhere in actuality, and in potency everywhere."⁶² In this way, panpsychism meets the requirement set out by the ontological principle by granting mentality to all actual entities.

Additionally, as Steven Shaviro argues, panpsychism "persists as a kind of counter-tendency to the anthropocentrism, and the hierarchical ontologies, of mainstream philosophical dogmas."⁶³ Shaviro characterizes Whitehead's panpsychism as a philosophical solution that also upends the narrative of human exceptionalism and philosophies of human access. He writes,

"All actual entities constitute themselves by prehending other actual entities; this process is not limited to the case of human beings endowed with the special gift of self-consciousness. What's more, all actual occasions pass through the roles both of subject and of object in the course of their process...It is there impossible to divide the world between a group of especially privileged, rational and sentient subject (ourselves) and an undifferentiated agglomeration of supposedly mute and passive objects (everything else)...Considered in such terms "[human] access" is not an epistemological quandary, but a matter of basic ontology."⁶⁴

The panpsychic view, in a way, works to level off one of the sharper divides between humans and everything else.

Novelty and creativity in each actual entity are possible through eternal objects, which are often compared to Platonic forms. The reader may not like the word "eternal" and Whitehead suggests "pure potential" or "Pure Potentials for the Specific Determination of Fact, *or* Forms of

⁶¹ Whitehead, *Process and Reality: An Essay in Cosmology*, 244.

⁶² *Ibid.*, 40.

⁶³ Shaviro, "Consequences of Panpsychism," in *Metaphysics and Things* (Claremont, CA, 2010), 3.

⁶⁴ *Ibid.*, 6.

Definiteness” in its stead.⁶⁵ But this word choice can be instructive in building out this concept.

In reference to color, as sense, being an eternal object, Isabelle Stengers argues:

“Eternal not because it is always there – it would never be anything but an indefinite endurance – but because experience testifies to color in the sense that it is what it is, without reference to a process in time...Red testifies to something that, in nature, does not emerge from this order like all that endures and changes. Red appears “when it is called,” although the sensation of red requires the endurance proper to the eye and the brain...Red does not emerge from the order to which the eye and the brain testify, but rather the eye and the brain must be understood on the basis of the possibility of the ingression to which the sensation “red” testifies.”⁶⁶

Eternal objects are not the psychic additions of that mind that bifurcate nature; they do not require poets to revise their praise toward their own minds instead of the color of a flower. The ingression of an eternal object is the subtraction from pure potentials – that specific red, not any other. The becoming of each actual entity requires the selection and inclusion of one or some eternal objects and the rejection of others.

Eternal objects are ingressed as “conceptual feelings.” Positive prehensions are also called feelings, of which there are simple physical feelings (or causal feelings) and conceptual feelings – which are the feeling of an eternal object. Whitehead writes,

“The actualities *have* to be felt, while the pure potential *can* be dismissed. So far as concerns their functionings as objects, this is the great distinction between an actual entity and an eternal object. The one [actual entity] is stubborn matter of fact; and the other [eternal object] never loses its ‘accent’ of potentiality.”⁶⁷

The actual entity becomes definite through its selection from the possibilities provided by the eternal object. Conceptual feelings are valued up and down in importance to determine how the eternal object will be ingressed into the actual entity. The actual entity selects or decides from

⁶⁵ Whitehead, *Process and Reality: An Essay in Cosmology*, 22.

⁶⁶ Stengers, *Think. with Whitehead A Free Wild Creat. Concepts*, 155.

⁶⁷ Whitehead, *Process and Reality: An Essay in Cosmology*, 239.

the potentialities of the eternal object, which then becomes determinate and actual. As

Whitehead writes,

“The word ‘decision’ does not here imply conscious judgment, though in some ‘decisions’ consciousness will be a factor. The word is used in its root sense of a ‘cutting off.’ The ontological principle declares that every decision is referable to one or more actual entities, because in separation from actual entities there is nothing, merely nonentity - “The rest is silence.””⁶⁸

The capability of an actual entity to decide in this sense, is not indicative a total freedom. The past inherited by the actual entity contributes to its “habits” of selection. Yet still, the actual entity selects, decides, values from the potentialities of an eternal object as a subjective operation and so it becomes part of the concrescence of that entity.

In accordance the ontological principles, all eternal objects as potentiality must exist ‘somewhere.’ This is where Whitehead’s God comes in. God is secular entity and not a personal agent demanding worship or gratitude.⁶⁹ Donald Sherburne explains, “The structure of God is the mirror image to the structure in the world. The world is incomplete; in its very nature it requires an entity at the base of all things to complete it. This entity is God.”⁷⁰ God has two ‘natures,’ the primordial nature and the consequent nature. God’s primordial nature constitutes all eternal objects. The primordial nature of God is analogous to the mental pole, and it is ‘outside of time.’

Whitehead writes,

“[t]he general potentiality of the universe must be somewhere; since it retains its proximate relevance to actual entities for which it is unrealized...This ‘somewhere’ is the non-temporal actual entity. Thus ‘proximate relevance’ means ‘relevance as in the primordial mind of God.’”⁷¹

⁶⁸ Ibid., 43.

⁶⁹ Throughout the philosophical work, Whitehead refers to God with the pronouns “he/his.” I retain this usage as an artifact from his text.

⁷⁰ Donald W Sherburne, *A Key to Whitehead’s Process and Reality* (Chicago: University of Chicago Press, 1966), 226.

⁷¹ Whitehead, *Process and Reality: An Essay in Cosmology*, 46.

The consequent nature of God aligns to the physical pole, in which God “prehends and preserves each generation of actual entities and mediates their efficacy in the future” or the objective immortality of concrescent actual entities.⁷² In this way, the consequent nature of God is ‘in time,’ as Whitehead writes:

“The consequent nature of God is his judgment on the world. He saves the world as it passes into the immediacy of his own life. It is a judgement of a wisdom which uses what in the temporal world is mere wreckage.”⁷³

God, like everything else that actually exists for Whitehead is an actual entity. God is different in that the poles are reversed; hence, God as the “mirror image.” He explains,

“An actual entity in the temporal world is to be conceived as originated by physical experience with its process of completion motivated by consequent, conceptual experience initially derived from God. God is to be conceived of as originated by conceptual experience with his process of completion motivated by consequent, physical experience, initially derived from the temporal world.”⁷⁴

This inversion, the presence of God, is necessary for mathematician’s philosophy to meet his criteria of adequate and coherent.⁷⁵

Two of the trickiest, most slippery concepts in Whitehead’s scheme are his secularized conceptualization of God and eternal objects. Both are requirements of the metaphysical system, which according to the ontological principle needs to account for everything, as all questions “can only be answered by reference to some actual entity.”⁷⁶ Several scholars have attempted to amend Whitehead’s philosophy and excise these two components possibly for of the complexity and theological baggage that comes with them or they interpret and apply his thought in ways that avoid engagement with these components. Stengers, in reminding us that Whitehead is a

⁷² Sherburne, *A Key to Whitehead’s Process and Reality*, 227.

⁷³ Whitehead, *Process and Reality: An Essay in Cosmology*, 346.

⁷⁴ *Ibid.*, 345.

⁷⁵ In *Without Criteria*, Steven Shaviro draw parallels between Whitehead’s God and Deleuze and Guattari’s ‘body without organs.’ See Steven Shaviro, *Without Criteria: Kant, Whitehead, Deleuze, and Aesthetics* (Cambridge: The MIT Press, 2009), 99-142.

⁷⁶ Whitehead, *Process and Reality: An Essay in Cosmology*, 250.

mathematician, argues that the conditions set by the problem require the concept of God to prevent nature from bifurcating.⁷⁷

This concludes this summary of Whitehead's philosophy, tailored to the requirements of the arguments presented in the following chapters. As eternal object and God do not figure largely in this dissertation, I have only provided a short introduction to his use of these terms. However, the importance of these concepts to Whitehead's system require a discussion of their purpose and the help the reader to understand how their complexity has often resulted in their exclusion.

⁷⁷ Stengers, Think. with Whitehead A Free Wild Creat. Concepts, 17.

Chapter Three.

Time, as a Symptom: Endurance and Time

1.0 Introduction

Cleopatra's Needle is an Egyptian obelisk in London near Charing Cross measuring nearly 21 meters tall. It has resided on the Embankment since 1877, a gift from the Ottoman governor of Egypt. Cleopatra's Needle is a favorite and famous example that Whitehead puts forth in *The Concept of Nature* and has been reflected on by many scholars that study his work. He writes,

“The static timeless element in the relation of Cleopatra's Needle to the Embankment is a pure illusion generated by the fact that for purposes of daily intercourse its emphasis is needless. What it comes to is this: Amidst the structure of events which form the medium within which the daily life of Londoners is passed we know how to identify a certain stream of events which maintain permanence of character, namely the character of being the situations of Cleopatra's Needle. Day by day and hour by hour we find a certain chunk in the transitory life of nature and of that chunk we say, ‘There is Cleopatra's Needle.’ If we define the Needle in a sufficiently abstract manner we can say that it never changes. But a physicist who looks on the part of life of nature as a dance of electrons, will tell you that daily it has lost some molecules and gained others, and even the plain man can see that it gets dirtier and is occasionally washed. Thus the question of change in the Needle is a mere matter of definition. The more abstract your definition, the more permanent the Needle.”¹

¹ Alfred North Whitehead, *Concept of Nature* (Cambridge University Press, 1920), 167.

The Needle is an enduring object. It is never the same as the last time you saw it. It exists in a welter of relations - dirt, air quality, the sun's radiation, pigeons, tourists, diplomacy, occupation, imperialism, etc. The Needle appears as a large permanent granite phallus, yet it constantly experiencing changes – it is an identifiable “stream of events” - that maintains “the character of being the situations of Cleopatra’s Needle.” It wasn’t always there, and it won’t be there forever. Yet, as Whitehead says, “There it is again.”²

Flux and process tend to highlight the churn of events and experiences, while endurance is associated with more substance-oriented thought and the legacy of classical physics that places physical things in fixed time and space. Whitehead’s philosophy secures the primacy of process while still being able to say, “There it is again,” without sinking back into substance or reifying classical physics. Karen Barad’s agential realism is a framework exploring the agential intra-action and becoming of phenomena into legible subjects. It is a non-representationalist model that allows the rethinking of the way matter *matters*. Both thinkers hinge on quantum physics. Whitehead was inspired by the findings of quantum physics and Barad, a physicist herself, cites Niels Bohr as a baseline for her thought. In this chapter, I will bring together Whitehead’s philosophy with the work of Karen Barad to show the impact and implications of thinking about endurance in these systems, by tracing their respective theories of time and subject/object relations. Barad’s work is a common touchstone in feminist new materialism, especially for rethinking the subject/object distinction. Thinking about Barad’s work with Whitehead helps to locate where process philosophy can help to avoid point of critique and keep in line with the commitments of new materialism.

² Ibid., 144.

Barad has figured largely in setting the scene and authoring foundational texts for new materialism. In her 2007 book, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*, Barad develops “an epistemological-ontological-ethical framework” based around Niels Bohr’s scientific-philosophical interpretation of modern quantum physics.³ While Barad does not directly reference Whitehead in *Meeting the Universe Halfway*, there are many points of resonance between the agential realist framework the system of thought put forth by Whitehead.

Barad is perhaps best known for how she presents agency and matter in her framework. Feminist new materialism has been both praised and criticized for its reconceptualization of agency. At its extremes, this rethinking can be cast as a move toward making the vibrancy of matter *actually* matter, or as a flattened ontology that depoliticizes and disregards power relations. The ontological status of matter is a pressing concern for new materialism. As opposed to a dead or inert substance, new materialists adopt a more vitalist approach that views matter as possessing some level of agency. In a collection of essays entitled *New Materialisms*, editors Diana Coole and Samantha Frost sketch its general trends in their introduction: “[W]e discern as an overriding characteristic of the new materialists their insistence on describing active processes of materialization of which embodied humans are an integral part, rather than the monotonous repetitions of dead matter from which subjects are apart.”⁴ Rethinking matter in these terms is consistent with the larger commitments seen in new materialism that seek to dismantle limiting or arbitrary dualisms; human/nonhuman, subject/object, animate/inanimate, nature/culture, etc.

³ Barad, *Meeting the Universe Halfway*.

⁴ D. Coole and S. Frost, “New Materialisms. Ontology, Agency, and Politics,” *Duke University Press*, 2010, <https://doi.org/10.1215/9780822392996>, 8.

Recent works have begun to delve into the compatibilities between Barad and Whitehead. In the chapter “After Performativity: On Concern and Critique” in the volume *Butler on Whitehead*, Vicki Bell positions Barad’s work as a connecting line between Butler and Whitehead that pushes performativity into a Whiteheadian space while retaining the importance of Butlerian ethics.⁵ Melanie Sehgal’s “Diffractive Propositions: Reading Alfred North Whitehead with Donna Haraway and Karen Barad” draws together these thinkers and the idea of theory, or propositions in Whitehead’s terminology. Arguing for Whitehead’s work as a situated metaphysics, Sehgal offers a reading of Whitehead philosophy as diffractive in itself.⁶ In “Modes of Mattering: Barad, Whitehead, and Societies,” Martin Savransky looks at how relationality between enduring entities is treated ethically and methodologically in Barad and Whitehead.⁷ I will join Savransky in arguing that endurance is regrettably omitted in Barad’s agential realism. I will also extend this argument to illustrate the differences in their theories of time and the implication for their formulations of subject/object relations.

While the frameworks presented by Barad and Whitehead have many notable similarities, the differences in their systems and purposes (a methodological framework and a speculative metaphysics, respectively) prevent many direct comparisons without tearing concepts away from their larger role in the given systems and diminishing their operational value. As Sehgal notes, frictions are created when drawing together these texts:

“This friction first and foremost manifests itself in the divergent styles of...feminist philosophers and historians of science, writing at the end of the twentieth and beginning of the twenty-first century, and the process philosopher, insisting on the necessity of coherence and systematicity within a new metaphysics.”⁸

⁵ Vicki Bell, “After Performativity: On Concern and Critique,” in *Butler on Whitehead*, ed. Roland Faber, Michael Halewood, and Deena Lin (Plymouth: Lexington Books, 2012), 19–28.

⁶ Melanie Sehgal, “Diffractive Propositions: Reading Alfred North Whitehead with Donna Haraway and Karen Barad,” *Parallax* 20, no. 3 (2014): 188–201.

⁷ Martin Savransky, “Modes of Mattering: Barad, Whitehead, and Societies,” *Rhizomes: Cultural Studies in Emerging Knowledge*, no. 30 (2016): 101–14.

⁸ Sehgal, “Diffractive Propositions: Reading Alfred North Whitehead with Donna Haraway and Karen Barad,” 91.

I follow Sehgal (and Barad) in adopting a diffractive approach, in this chapter and those that follow, as a direct overlay comparing these texts is not possible and attempting to pose equivalencies between concepts does not do justice to their complexity. Barad offers diffraction as a reading methodology by which one can read texts through one another, to see the effects of difference rather than to simply reflect works upon each other to map where difference appear.

Presenting these two thinkers diffractively, this chapter takes the form of a spiral, first broadly moving between Barad and Whitehead's respective projects and purposes, then tightening, bringing them closer around specific themes and issues so show the effects of their differences. The first two sections (3.1, 3.2) situate Barad and Whitehead's projects to the problems they set out to resolve and to the relevance of quantum physics in their thought. Barad's framework is inspired through her reading of Bohr's contributions to develop his thinking into a larger system, while Whitehead watched the early quantum theory unfold and was engaged in the problems that it posed for the way we think about the world. Section 3.3 offers of a summary of Barad's agential realism, its key concepts, points of critiques, and a view on how Barad employs her framework to rethink the world. The final sections of the chapter, Whitehead and Barad are brought into closer diffractive conversation on the topics of time (3.4), their respective presentations of the subject/object relation (3.5), and how these thoughts culminate and impact the idea of endurance in their respective frameworks (3.6).

3.1 Meeting Bohr

In *Meeting the Universe Halfway*, Barad sets out on an ambitious path to develop a transdisciplinary methodology and define a set of theoretical concepts with which to analyze the

“social” and the “natural” together. This framework allows for the examination of the relationships of these phenomena, without ignoring their differences, and to understand their entanglement. This new approach is necessary for Barad as she argues that the importance of matter and materiality has been undercut by trends of scholarship that primarily account for language and culture. She writes, “Language matters. Discourse matter. Culture matters. There is an important sense in which the only thing does not seem to matter anymore is matter.”⁹ This statement resonates with the larger movement from new materialist thinkers to challenge linguistic, political, and epistemological representationalism as well as rethinking materiality.

Barad takes issue with undisturbed representationalism. This refers to the idea that there exists representations, on one hand, and the things that those representations represent, on the other; representations mediate between things that exist. Problems and questions multiply when we are unable to guarantee correct or accurate representations of the world as it is. Following Joseph Rouse, Barad connects this representationalism to Cartesian thought that divides the subject from the rest of the world.

“The presumption that we can know what we mean, or what our verbal performances say, more readily than we can know the objects those sayings are about is a Cartesian legacy, a linguistic variation on Descartes’ insistence that we have a direct and privileged access to the contents of our thoughts which we lack toward the “external” world.”¹⁰

The confidence we place in the accuracy of representation, according to Barad, is not well-founded or secure, but rather a Cartesian philosophical relic that needs reevaluation.¹¹

The alternative favored by Barad is a performative approach. Such an approach destabilizes representationalism by acknowledging first that one is not engaging with

⁹ Barad, *Meeting the Universe Halfway*, 26.

¹⁰ Joseph Rouse, *Engaging Science: How to Understand Its Practices Philosophically* (Ithaca: Cornell University Press, 1996). Quoted in: Barad, *Meeting the Universe Halfway*, 49.

¹¹ Barad, *Meeting the Universe Halfway*, 49.

representations from a distance, but from “*a direct material engagement with the world.*”¹² As opposed to the representations that allow for a disconnected distance between the knower and the known, or posits the knower as an unaffected outside observer, a performative approach requires understanding that we are a part of the world and enmeshed in it. By advocating for performativity over representationalism, Barad hopes to push back against the mental habits that tend to grant language the power to determine what exists and what is real.¹³

Barad uses the work of Niels Bohr and the Copenhagen interpretation of quantum physics as a point of origin from which to understand the relationship between nature and the social. Barad’s background as a physicist provides a vantage point for her to draw from Bohr’s foundational interpretations of quantum physics alongside the more philosophically leaning works that make up what Barad calls Bohr’s cumulative ‘philosophy-physics.’ While quantum physics is a large part of Barad’s work, through the recounting of both laboratory and *gedanken* experiments and their implications, the scope of this chapter is focused on Barad’s agential realist framework; technical analysis of quantum physics and the associated discourse, as well as competing theories and interpretations in the field are omitted and abridged when necessary. An overview of Bohr’s principle of complementarity is necessary as it provides a theoretical basis for Barad’s concept agential realism discussed further in this chapter.

Bohr’s complementarity principle attempts to address the inability to observe certain complementary variable characteristics simultaneously, like wave/particle behavior, energy/duration, and position/momentum. In 1927 Bohr and his colleague and student Werner Heisenberg intensely debated Heisenberg’s uncertainty principle which claimed that we cannot know precisely both the position and momentum of an electron, as the interaction with tools of

¹² Ibid., 49.

¹³ Ibid., 133.

measurement will obscure one value or the other. Bohr felt that Heisenberg's principle was a more superficial description of a deeper issue which he developed into a larger principle of complementarity and presented later that year. Heisenberg came to accept Bohr's account, but scholars remain divided regarding the accuracy of Heisenberg's interpretation of Bohr as well as what constitutes a definitive interpretation of Bohr.¹⁴

In Barad's reading, Heisenberg's more epistemological statement asserted that, due to disturbances caused by measurement apparatus, we are unable to know both position and momentum precisely and simultaneously. Bohr's ontological view of complementarity argues that values, like that of position and momentum, do not exist simultaneously, but that they are mutually exclusive.¹⁵ As Barad summarizes:

“In essence, Bohr is making a point about the nature of reality, not merely our knowledge of it. What he is doing is calling into question an entire tradition in the history of Western metaphysics: the belief that the world is populated with individual things with their own independent sets of determinate properties... there aren't little things wandering aimlessly in the void that possess the complete set of properties that Newtonian physics assumes (e.g. position and momentum); rather, there is something fundamental about the nature of measurement interactions such that, given a particular measuring apparatus, certain properties *become determinate*, while others are specifically excluded.”¹⁶

According to Barad's reading, Bohr is not focused on the uncertainty that Heisenberg poses in terms of one's ability to *know* both position and momentum, but rather the indeterminacy of

¹⁴ Kristian Camilleri, “Bohr, Heisenberg and the Divergent Views of Complementarity,” *Studies in History and Philosophy of Modern Physics* 38 (2007): 514–28.

¹⁵ Bohr writes: “On one hand, the definition of a state of a physical system, as ordinarily understood, claims the elimination of all external disturbances. But in that case, according to the quantum postulate, any observation will be impossible, and above all, the concepts of space and time lose their immediate sense. On the other hand, if in order to make observation possible we posit certain interactions with suitable agencies of measurement, not belonging to the system, an unambiguous definition of the state of the system is naturally no longer possible, and there can be no question of causality in the ordinary sense of the word. The very nature of the quantum theory thus forces us to regard the space-time co-ordination and the claim of causality, the union of which characterizes the classical theories, as *complementary* but *exclusive* features of the description, symbolizing the idealization of observation and definition, respectively.” (Niels Bohr, “The quantum postulate and the recent developments of atomic theory.” *Nature*, 121 (1928): 580-590. Quoted in: Camilleri. 516)

¹⁶ Barad, *Meeting the Universe Halfway*, 19.

whether both position and momentum can *exist* simultaneously.¹⁷ While Barad acknowledges that Bohr does not delve directly into questions of ontology, she finds his philosophy-physics compelling and open to an interpretation that she builds alongside other experimental findings in quantum physics to develop her concept of agential realism.¹⁸

This section has provided an overview of the issues Barad intends to resolve with her framework and how she engages with Bohr to develop a Bohrian ontology into the agential realist model. The following section will show how Whitehead's philosophical thinking was impacted the findings of quantum physics. In this way, we can see how both thinkers are addressing the same root problems posed by fall of classical physics and the different ways they opt to account for them.

3.2 Thinking quantum with Whitehead

While Bohr and Heisenberg engaged in hot debate, Whitehead spent 1927 beginning his Gifford Lectures that would later be published in 1929 as *Process and Reality*. Quantum theories and physics were already of interest to Whitehead and his engagement with modern science, as well as his metaphysics, were heavily influenced by quantum thought. In *Science and the Modern World* and *Process and Reality*, Whitehead sets out to create a philosophy that is compatible with the then emerging field of quantum theory and does not shy from critiques of classical physics. That said, his philosophy does not directly respond to the development and interpretations of quantum physics that occurred during the time of his writing. Whitehead was interested and inspired by the "old quantum theory" (1900-1925). He does not directly refer to

¹⁷ Ibid., 118.

¹⁸ Ibid., 125.

the Copenhagen Interpretation developed by Bohr, Heisenberg, and Schrodinger after 1925, however the applicability of Whitehead's thought to the "new" quantum theory has been argued.¹⁹ Whitehead intends for his metaphysics to account for all aspects of nature with full knowledge of the difficulties posed by early quantum theory as he understood it at the time.

Michael Epperson, author of *Quantum Mechanics and the Philosophy of Alfred North Whitehead*, argues that Whitehead's long career as a mathematician provided both the professional interest and the technical understanding to engage with the mathematical quantum theory and to account for its inclusion in Whitehead's philosophy.²⁰

Scholars have argued both for a fundamental disagreement between Bohr and Whitehead and for their theoretical compatibility, based on differing interpretations of Bohr's complementarity and contextuality principles, and general applicability.²¹ The focus of this chapter is not to conduct detailed comparisons of the philosophies or philosophy-physics of Bohr and Whitehead, or to contrast Barad's reading of Bohr to other interpretations. But, as Barad starts from quantum physics to build her framework, I will loosely outline parallels between Whitehead's approach to facets of the problem posed by quantum thought, as developments in the field of quantum physics can be read as an impetus for much of Whitehead's philosophy as

¹⁹ Abner Shimony, "Quantum Physics and the Philosophy of Whitehead," in *Philosophy in America*, ed. Max Black (Ithaca: Cornell University Press, 1965), 240–61. 240

Henry Folse, "Complementarity, Bell's Theorem, and the Framework of Process Metaphysics," *Process Studies* 11 (1981): 259–73.

²⁰ Michael Epperson, *Quantum Mechanics and the Philosophy of Alfred North Whitehead* (New York: Fordham University Press, 2004). 129

²¹ In "Complementarity, Bell's Theorem, and the Framework of Process Metaphysics," Henry Folse argues for the agreement of Bohr and Whitehead based on Bell's Theorem. Michael Epperson, in *Quantum Mechanics and the Philosophy of Alfred North Whitehead*, recognizes a fundamental disconnect between Bohr and Whitehead at the quantum level but sees the greater compatibility for "higher-order epistemological issues" (2). Henry Stapp advocates for a connection between Whitehead and Heisenberg, rather than Bohr, as the basis for a modified ontology in *Mind, Matter, and Quantum Physics*

well. In doing so, I will provide background to Whitehead's theoretical concepts that will be discussed and built upon in light of Barad's development of agential realism and intra-action.

Looking at the comparable arguments between Whitehead and Bohr, Henry Folse points to two specific points of critique that Whitehead makes against classical physics in response to the changing scientific landscape he was witness to: the fallacy of simple location and the bifurcation of nature (which can also be read as his fallacy of misplaced concreteness).²² Classical physics describes entities as substances which are defined by their determined position in space and time. In *Science and Modern World*, Whitehead argues that elements of experience do not possess simple location in this sense, that they are not describable independent of other spaces and durations of time, but that this characteristic is in fact an abstraction (which we will return to shortly).²³ As Folse describes:

“What a thing is, is, in essence, where that thing is in space and time. Where a thing is not, it can have no property and so no causal effect. This line of reasoning led to a view of the universe in which the interrelatedness of things was ultimately a mystery. Whitehead called it the fallacy of simple location.”²⁴

Considerable experimental evidence in quantum mechanics, including the disproving of Bell's theorem, is in line with Whitehead's thought about simple location and local causality.²⁵ This problem of simple location is an example of the other point of critique Whitehead describes, the fallacy of misplaced concreteness.

In *Concept of Nature*, published in 1920, Whitehead poses the fallacy of 'bifurcation of nature' as the root problem of modern philosophy which he sets out to argue against. Nature, for

²² Folse, “Complementarity, Bell's Theorem, and the Framework of Process Metaphysics.”

²³ Alfred North Whitehead, *Science and the Modern World* (London: Cambridge University Press, 1925), 80

²⁴ Folse, “Complementarity, Bell's Theorem, and the Framework of Process Metaphysics.”

²⁵ Folse describes Bell's theorem “which essentially places a limit on the number of pairs of particles with certain specified properties one should be able to detect experimentally. However, the evidence now strongly confirms that in actual observation this limit is exceeded. Thus if we assume that the quantum formalism is correct, as seems to be dictated by overwhelming experimental corroboration, then the assumption that quantum mechanics describes simply located particles must be regarded as false.”

Whitehead, must be theorized wholly not selectively. We cannot bracket quantum phenomena as a separate reality, but we must take seriously an undivided nature that is inclusive of electrons as well as the objects of everyday perception.

“What I am essentially protesting against is the bifurcation of nature into two systems of reality ... Thus, there would be two natures, one is the conjecture, and the other is the dream. Another way of phrasing this theory which I am arguing against is to bifurcate nature into two divisions, namely into the nature apprehended in awareness and the nature which is the cause of awareness. The nature which is the fact apprehended in awareness holds within it the greenness of the trees, the song of the birds, the warmth of the sun, the hardness of the chairs, and the feel of the velvet. The nature which is the cause of awareness is the conjectured system of molecules and electrons which so affects the mind as to produce the awareness of apparent nature.”²⁶

Isabelle Stengers reads this problem as the central motivation for the whole of Whitehead’s philosophical thought.²⁷ The duality created by this division splits nature (and experience) into an atomic world outside of our immediate perception and a world of “psychic additions” from the perceiving mind. The fallacy of the bifurcation of nature names the persistent dualism that maintains a metaphysical difference between primary and secondary characteristics.²⁸

For Whitehead, the bifurcation of nature is an avoidance of a real problem for philosophy, which he sees as an inability to discuss complex relations.²⁹ Taking the logic of the bifurcation of nature to its most ludicrous ends, he writes:

“Thus nature gets credit which should be reserved for ourselves: the rose for its scent: the nightingale for his song: the sun for his radiance. The poets are entirely mistaken. They should address their lyrics to themselves and should turn them into odes of self-congratulation on the excellency of the human mind. Nature is a dull affair, soundless, scentless, colourless; merely the hurrying of material, endlessly, meaninglessly.”³⁰

²⁶ Whitehead, *Concept of Nature*, 30-31.

²⁷ Stengers, *Think with Whitehead A Free Wild Creat. Concepts*.

²⁸ Bruno Latour, “What Is Given in Experience?,” in *Thinking with Whitehead: A Free and Wild Creation of Concepts* (Harvard University Press, 2011), xiii.

²⁹ Whitehead, *Concept of Nature*, 30.

³⁰ Whitehead, *Science and the Modern World*, 68-69.

The bifurcation of nature splits experience out of convenience due to the real difficulty in accounting for both “the redness of the fire with the agitation of the molecules.”³¹ The creation of two systems of reality to account for complexity is not acceptable for Whitehead. Rather, “all our sense-perceptions are in the same boat, and must be treated on the same principle.”³² What we perceive is in nature; secondary characteristics are not a creation of the mind.

By 1925, in *Science and the Modern World*, Whitehead continues with the line of argument against dualist thinking with what he calls the ‘fallacy of misplaced concreteness.’ This can be described as using an abstraction as if it were an actual concrete entity. Whitehead writes: “Wherever a vicious dualism appears, it is by reason of mistaking an abstraction for a final concrete fact.”³³ Abstraction is required for thought and there is no dismissal of dealing in abstractions suggested, rather, that the conditions of abstractions be taken seriously. The abstraction is not the actual, nor is it a generalization of the concrete. Isabelle Stengers describes Whitehead’s abstractions as derivative of his role as mathematician, where “abstractions act as ‘lures’, luring attention toward ‘something that matters’, vectorizing concrete experience.”³⁴ The benefit to working in abstractions for Whitehead, is that the object of inquiry has been defined and isolated with a set of fixed relations. However, the act of isolating the object, or abstracting away, is unavoidably subtractive of some elements or relations. Abstraction is necessary, but must be interrogated; or, “the map is not the territory.”³⁵ In this way, philosophy and critical thought are essential. Whitehead writes:

“The disadvantage of exclusive attention to a group of abstractions, however well-founded, is that by the nature of the case, you have abstracted from the remainder of

³¹ Whitehead, *Concept of Nature*, 44.

³² *Ibid.*, 44.

³³ Alfred North Whitehead, *Adventures of Ideas* (New York: The Free Press, 1967), 190.

³⁴ Isabelle Stengers, “A Constructivist Reading of Process and Reality,” *Theory, Culture & Society* 25, no. 4 (2008): 91–110, <https://doi.org/10.1177/0263276408091985>, 96.

³⁵ Alfred Korzybski, *Science and Sanity: An Introduction to Non-Aristotelian Systems & General Semantics*. (International Non-Aristotelian Library Publishing Company, 1933), 58.

things. In so far as the excluded things are important in your experience, your modes of thought are not fitted to deal with them... it is of the utmost importance to be vigilant in critically revising your *modes* of abstraction. A civilisation which cannot burst through its current abstractions is doomed to sterility after a very limited period of progress.”³⁶

Progress requires ‘bursting through’ abstractions to create new abstractions again and again. In order to move past a current set of abstractions, one must revise the modes in which abstractions are created by vigilantly seeking out what is taken for granted in experience, what is excluded, what relations are obscured, and what we habitually ignore in our modes of thought. In this way, we can revise our abstractions and, hopefully, further our understanding of the world.

Bohr agrees with Whitehead that abstractions are necessary, Bohr’s contextuality and complementarity require it; however, one must take seriously that abstractions are inherently limited and a “remainder” remains. As Folse describes:

“Any attempt to represent the state of two systems separately involves an “abstraction” from the concrete physical situation which the quantum formalism is designed to represent. Such an attempt would be precisely what Whitehead called the fallacy of misplace concreteness, thus like Whitehead, Bohr also criticizes this tendency in so interpreting the physical description of nature.”³⁷

While Whitehead and Bohr both theorize the same problem of abstractions in rectifying classical and quantum physics, they develop very different solutions. Manuel Bächtold summarizes that Whitehead’s solution comes in the form of the “philosophy of organism” that constructs a new conceptual framework to meet these challenges of quantum reality, while Bohr chooses not to dispense with classical physics entirely and finds it sufficient to adapt classical concepts in general to the model of complementarity.³⁸

³⁶ Whitehead, *Science and the Modern World*, 73.

³⁷ Folse, “Complementarity, Bell’s Theorem, and the Framework of Process Metaphysics.”

³⁸ Manuel Bächtold, “Bohr (1885-1962): Bohr, Whitehead, and the Interpretation of Quantum Mechanics,” in *Handbook of Whiteheadian Process Thought*, ed. Michel Weber (Frankfurt: ontos verlag, 2008), 353–61.

The phrase “philosophy of organism” that Whitehead uses to describe his philosophy is also linked to quantum theory and Bohr’s model of the atom. ‘Organism,’ in his usage, is not limited to the biological definition. Isabelle Stenger’s points out that the early usage of the term ‘organism,’ in reference to his doctrine of thought, appears as he describes the behavior of electrons. Stengers summarizes:

“The electron “does not exist” in a given moment. What exists “takes the time” required by a vibration or a succession of contrasts. And it is when he describes what would be an “organised system of vibratory streaming of energy” that Whitehead suddenly speaks, without the least warning, of a “vibratory organism,” only to conclude abruptly, in a mode that is as hyperbolic as it is out of place.”³⁹

Whitehead’s train of thought from electrons to ‘vibratory organisms’ to a ‘doctrine of organism’ occurs tangentially, in a single page in a chapter called “Mathematics as an Element in the History of Thought.” Whitehead describes the role of vibration (as atomic “radiant wave-systems”) in quantum theory and poses that “the hypothesis of essentially vibratory existence is the most helpful way of explaining the paradox of the discontinuous orbit.”⁴⁰ A quantum jump occurs when an electron jumps from one energy orbit to another; this “jump” does not traverse any space between the orbits, but rather, the electron exists in one orbit and then it is in another orbit (electrons are never between orbits). The discontinuity describes the energy emission (photons) that occurs concurrent with the jump. Thus, the vibratory organism required by quantum jumps becomes a new basis of thought meant to displace the bare stagnant matter of scientific materialism.

Later in *Science and the Modern World*, Whitehead further expands the definition of organism as he states that all science is the study of organisms, with biology attending to the

³⁹ Stengers, *Think. with Whitehead A Free Wild Creat. Concepts*, 129.

⁴⁰ Whitehead, *Science and the Modern World*, 47.

larger ones and physics studying the smaller ones – that in turn, make up the larger ones.⁴¹ Yet this definition still reverts to a more substance-oriented association that Whitehead seems to intend. By 1927, two years after the lectures that make up *Science and the Modern World*, Whitehead clarifies that organism should be thought of as that which is organized. As Victor Lowe describes: “By “organism,” Whitehead generally means a temporally bound process which *organizes* a variety of given elements into a new fact.”⁴² Lowe notes that some scholars associate Whitehead’s use of the term ‘organism’ with a strong influence of biology, but Lowe dismisses this assumption. “Furthermore,” Lowe writes, “the concept of organism in Whitehead’s metaphysics is by no means cut altogether, or even for the most part, out of biological cloth.”⁴³ Lowe denies the biological influence during this early period of his writing, prior to full metaphysical system laid out in *Process and Reality*, as his concepts are not yet fixed and many terms (prehension, organism, event) are used interchangeably.⁴⁴ Lowe’s rejection of the influence of biology on Whitehead’s terminology is suspect, as the influence of Darwin and biological science is evident throughout his work. Many Whiteheadian scholars are not as resistant to the possibilities of these associations - but for the purposes and limitations of this text, I rely on the 1927 usage of ‘organism.’

This section has sketched out Whitehead’s philosophical problems in relation to challenges posed by the “old” quantum physics. I put Whitehead in historical context and proximity to Bohr to show how both thinkers are aligned in formulating their problems, albeit with alternative solutions. As Barad develops her thinking with Bohr as an inspiration, we can see how both Barad and Whitehead are dealing with the same issues in the undercurrent. In the

⁴¹ Ibid., 129.

⁴² Victor Lowe, *Understanding Whitehead* (The Johns Hopkins University Press, 1966), 228.

⁴³ Ibid., 223.

⁴⁴ Ibid., 230.

following sections, I will provide a summary of Barad’s agential realist framework and its key concepts. I engage with some points of critique and applications of her thinking to provide a diffractive base with which to read Whitehead’s philosophy alongside.

3.3 Agential Realism

In the article “Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter” published in 2003, Barad begins to outline her concept of agential realism which is described more fully in her 2007 book *Meeting the Universe Halfway*. Barad positions this concept as a development of her ontological reading of Bohr’s philosophy-physics. Agential realism is a posthumanist performative approach that places phenomena as the “basic units of reality.”⁴⁵ She writes,

“In summary, the primary ontological units are not “things” but phenomena – dynamic topological reconfigurings / entanglement / relationalities / (re)articulations of the world. And the primary semantic units are not “words” but material-discursive practices through which (ontic and semantic) boundaries are constituted. This dynamism is agency. Agency is not an attribute but the ongoing reconfigurings of the world. The universe is agential intra-activity in its becoming.”⁴⁶

Building on Bohr’s definition of phenomena as the entanglement between an object and apparatus of observation, Barad characterizes phenomena as the “ontological inseparability of agentially intra-acting components.”⁴⁷ Phenomenon, for Barad, is a “single entity;” and from the ontological entanglement of phenomena, boundaries are drawn that define and determine the object and the apparatus.⁴⁸

⁴⁵ Barad, *Meeting the Universe Halfway*, 33.

⁴⁶ *Ibid.*, 141.

⁴⁷ *Ibid.*, 309, 33.

⁴⁸ *Ibid.*, 348.

Boundaries are produced by apparatuses that create agential cuts. Barad finds Bohr's definitions of apparatus too limiting, too situated in the laboratory, and too anthropocentric to stand as-is, yet wants to retain his idea that the cut between an object and the apparatus that observes it not inherent but enacted through their engagement.⁴⁹

“In my agential realist elaboration of Bohr's account, *apparatuses are the material conditions of possibility and impossibility of mattering*; they enact what matters and what is excluded from mattering. Apparatuses enact agential cuts that produce determinate boundaries and properties of “entities” within phenomena, where “phenomena” are the ontological inseparability of agentially intra-acting components. That is, agential cuts are at once ontic and semantic. It is only through specific agential intra-actions that the boundaries and properties of “components” of phenomena become determinate and meaningful. In the absence of specific agential intra-actions, these ontic-semantic boundaries are indeterminate. In short, the apparatus specifies an agential cut that enacts a resolution (within the phenomenon) of the semantic, as well as ontic, indeterminacy. Hence *apparatuses are boundary-making practices*.”⁵⁰

The separation and boundary created through the agential cut does not “disentangle” the entangled phenomena, rather it satisfies the conditions necessary for phenomena to become describable.⁵¹ An apparatus for Barad, is a phenomenal practice and not a physical object or an assemblage. As an open-ended material-discursive practice, an apparatus is not prefixed but can be rearranged.⁵² Barad maintains the laboratory metaphor through her discussion of the apparatus, despite its limitations and the call-back to material devices rather than practices of becoming.

Barad shows agential realism as a framework in action through an analysis of Leela Fernandes's ethnographic study of a Calcutta jute mill. The jute mill itself, in Barad's reading, is a set of apparatuses. She summarizes, “the jute mill can be understood as an intra-acting

⁴⁹ Ibid., 142-143.

⁵⁰ Ibid., 148.

⁵¹ Ibid., 348.

⁵² Ibid., 170.

multiplicity of material-discursive apparatuses of bodily production that are themselves phenomena materializing through iterative intra-actions among workers, management, machines, and other materials and beings which are enfolded into these apparatuses.”⁵³ The importance of this approach, Barad says, is not to be entirely dismissive of discursive factors, but to provide a reconceptualization of materiality that views agential phenomena as reconfiguring and becoming, rather than analyzing the ““immediate givenness” of the world.”⁵⁴

Interaction is transformed to “intra-action,” to move away from any implication that the entities involved have independent existence prior to their interaction. Instead, it is through intra-action that agency is generated. The intra-action is an entanglement of the mutual constitution of agencies in relation.⁵⁵ Agency is the enactment of intra-activity.⁵⁶ Intra-activity is also the causal structure in the agential realist framework, whereby cause and effect come to be through the intra-action. Barad’s causality is neither a total determinism or free will, she writes,

“Intra-actions always entail particular exclusions, and exclusions foreclose the possibility of determinism, providing the condition of an open future. But neither is anything and everything possible at any given moment. Indeed, intra-actions iteratively reconfigure what is possible and what is impossible – possibilities do not sit still...The notion of intra-actions reformulates the traditional notions of causality and agency in an ongoing refiguring of both the real and the possible.”⁵⁷

In part with her rejection of representationalism, this notion of causality accounts for how discursive practices relate to material phenomena as opposed to a theory of real correspondence between words and objects.⁵⁸

⁵³ Ibid., 237.

⁵⁴ Ibid., 244.

⁵⁵ Ibid., 33.

⁵⁶ Ibid., 178.

⁵⁷ Ibid., 177.

⁵⁸ Ibid., 44.

The model of intra-action put forth in the agential realist framework has further implications for thinking about space and time. Barad writes,

*“iterative intra-actions are the dynamics through which temporality and spatiality are produced and iteratively reconfigured in the materialization of phenomena and the (re)making of material-discursive boundaries and their constitutive exclusion...In my agential realist account, what is at issue is not merely that time and space are not absolute but relative (following Einstein); rather is it that intra-actions themselves matter to the making / marking of space and time.”*⁵⁹

Aligning with Donna Haraway’s critique of spatialization, Barad presents this approach in opposition to theories of ‘space as a container’ and the concept of time as absolute.⁶⁰ For Barad, the fact of quantum discontinuity, or quantum jump, is disruptive enough to motivate not only a rethinking of the common conceptions of space and time, but ethics, ontology, and epistemology as well.⁶¹ Similarly, Whitehead’s understanding of the quantum jump requires reconceptualizing the world as the vibratory organism in order to build an un-bifurcated metaphysical system to describes process and reality. The potentialities of these unpredictable quantum events draw Barad to the conclusion that the dynamic relations between determinacy and indeterminacy, continuity and discontinuity are much more fluid and unstable than our usual frameworks allow. Intra-actions are agential and entangled, reconfiguring space and time, and articulating boundaries (cuts, that are never permanent) through possibility. As part of the world, we are never outside observers to the intra-actions of phenomena but are entangled in the world we observe.

Barad’s formulation of agency in her agential realism is a key concept in her work that has brought attention from new materialists, but also drawn criticism. In the article “Beyond

⁵⁹ Ibid., 179-180.

⁶⁰ Ibid., 224.

⁶¹ Ibid., 182.

hierarchical oppositions: A feminist critique of Karen Barad’s agential realism,” Caroline Braunmühl takes issue with the way that Barad inferiorizes and devalues passivity in favor of agency. She writes,

“Barad also implies, it is *in virtue of* the attribution of ‘mere passivity’ (as a negative attribute) to matter that the latter historically has been devalued. Yet her strategy of argument effectively amounts to the reinscribing in a reified form the normative privilege which activity and agency have historically been accorded vis-a-vis passivity.”⁶²

Braunmühl reads this move as the abjectification of passivity in line with “hegemonic, male-supremacist discourse” that does not in fact eliminate dualism but reinforces the masculine discourse by trying to remove passivity from experience all together.⁶³ Her critique implies that bringing together what is dualistically opposed occurs at the expense of difference and distinction, that without the prism of these dualisms we are unable to engage with domination and exclusion.⁶⁴

Agency, as a term, has developed many different facets and definitions within feminist new materialism. Braunmühl’s reading of Barad’s use of agency is mistaken if it is meant to be matched to a dualist active/passive system. Barad actually says:

“Agency is not an attribute but the ongoing reconfigurings of the world. The universe is agential intra-activity in its becoming... *agency is a matter of intra-acting; it is an enactment, not something that someone does or has...* Agency is “doing” or “being” in its intra-activity.”⁶⁵

The use of agency in Barad is not at the expense of passivity, it is better read as the bare definition of her ontology. Barad’s move does not require demeaning the passive, but to ‘merely’

⁶² Caroline Braunmühl, “Beyond Hierarchical Oppositions: A Feminist Critique of Karen Barad’s Agential Realism,” *Feminist Theory* 19, no. 2 (2018): 223–40, 232.

⁶³ *Ibid.*, 231.

⁶⁴ *Ibid.*, 229.

⁶⁵ Barad, *Meeting the Universe Halfway*, 141.

point out the error in viewing “passive matter” as lacking ontological importance to intra-action and contributing to material-discursive practices. To have agency, as such, is to exist and participate in the intra-action and reconfigurings of the world; the intra-action through which a subject is created. Braunmuhl’s criticism would be better limited to Barad’s word choice, as one too evocative of other realms of feminist scholarship.

This is not to pick on Braunmuhl’s critique specifically, though she puts a fine point on what others gloss over, but as representative of a broader theme in the critical responses to feminist new materialism and Barad. The fear evoked by Barad’s agential universe is untying agency from responsibility. If “everything” has agency then the term itself is no longer politically useful, as Simon Choat writes: “The new materialist approach to agency risks depoliticizing situations: if we do not know which actors are more important than others, then we deny ourselves the ability to intervene in the hope of altering the existing balance of forces.”⁶⁶ Barad’s agential realism does not lose responsibility and accountability, but it does become more complex.

Barad cites the work of Monica Casper on nonhuman agency in the field of experimental fetal surgery, in which Casper argues how a fetus is ascribed agency at the expense of pregnant person. For Casper, granting agency to an entity is already a political and politicizing act through which one uncovers where one’s accountability lies – which I read as Casper quietly equating agency to power.⁶⁷ Casper is resistant to the idea of fetal agency, as it reduces the agency of the pregnant person to the “technomaternal environment for fetal patients.”⁶⁸ Yet, it is the claim of

⁶⁶ Simon Choat, “Science, Agency and Ontology: A Historical-Materialist Response to New Materialism,” *Political Studies* 66, no. 4 (2018): 1027–42. 1036

⁶⁷ Barad, *Meeting the Universe Halfway*. 213-215

⁶⁸ Monica Casper, “Reframing and Grounding Nonhuman Agency: What Makes a Fetus an Agent?,” *American Behavioral Scientist* 37, no. 6 (1994): 839–56. 844. Quoted in: Barad, *Meeting the Universe Halfway*. 215

the presence of a fetus that constructs the subject as a pregnant person. Barad argues that the agential realist framework is not reducing accountability by rethinking agency, but it may be increasing it. The apparatuses that construct the subjects (pregnant person, fetus, in this case) depend on sets of material-discursive practices – health care structures, racial and class constructions of infertility, social and religious discourses on hypermaternity, etc. Barad writes, “The acknowledgement of “nonhuman” agency does not lessen human accountability; on the contrary, it means that accountability requires that much more attentiveness to existing power asymmetries.”⁶⁹

For Simon Choat, Barad’s modified ontological agency is particularly detrimental to Braunmuhl’s active (not passive) agency. Political action, Choat argues, requires a focused agency and responsible parties. Understanding the particular (human and nonhuman) actors contributing to global climate change, for example, is important but as Choat writes:

“[A]ddressing the problem ultimately entails establishing who or what is responsible. Moreover, the typical forms of political action – whether the aim is fighting global warming, winning an election, resisting corporate power or overthrowing a tyrannical government – more often than not require exactly the kind of united and directed forms of agency which are undermined and disabled by focusing on the plural and dispersed nature of agency...”⁷⁰

I completely agreed with Choat that typical forms of political action require typical definitions of agency. However, I disagree that the ‘aims’ of such actions are only achieved through typical arrangements of focused agency. Again there is the conflation of agency as an ontological existence in intra-action, and agency in contrast to passivity - when one definition does not preclude the other and could even serve to enhance its efficacy. The interrogation of contributing actors (human and nonhuman) can illuminate ways that methods of political action can be

⁶⁹ Barad, *Meeting the Universe Halfway*. 219

⁷⁰ Choat, “Science, Agency and Ontology: A Historical-Materialist Response to New Materialism.” 1036

effectively organized, utilized, and radicalized in a world that is getting increasingly complex to navigate responsibly.

Agency is conjuring muddled definitions and generating critiques outside of the scope of Barad's project, which brings us directly in line with Whitehead. In the same way, process philosophy is complicated by problems with the use of language and terminology, and like Barad, Whitehead's speculative philosophy does not provide specific solutions to political or environmental issues. He instead offers a process metaphysics and a baseline to build out from, hopefully one that does not bifurcate or mistake abstraction for concreteness. Both Barad and Whitehead are providing ways to understand the problems at hand and their frameworks are better judged by what they can show us and help us to think about than for preformed solutions.

In this section, I have summarized Barad's agential realism attending to the particular ways that she argues for this framework and the concepts that differentiate it, while omitting much of her description of quantum physics and experimentation. This section provides a condensed overview and a basic understanding of the operations of Barad's thought. In the following sections, I will expose more facets of Barad's tools to explore the resonances and points of incompatibility between agential realism and the process philosophy of Alfred North Whitehead in light of their models of time and the subject/object relationship, as both are necessary components to an understanding of endurance in non-substance systems of flux.

3.4 Time

In order to talk about endurance, we have to understand these two thinkers approach to time and the past. Neither Barad nor Whitehead propose a world of substance. For Barad's agential realism, phenomena are the "basic units of reality" while for Whitehead, the philosophy

of organism is based on the actual entity or actual occasion or event.⁷¹ In many cases Whitehead uses these terms interchangeably, in this section I will refer to them as actual occasions to maintain the texture of temporality. In a shoutout to William James, Whitehead describes actual occasions as “drops of experience, complex and interdependent.”⁷² Actual occasions are the microcosmic processes of becoming that make up the universe. Actual occasions, as instants of experience, become and conclude through the process that Whitehead terms concrescence. Concrescence is the process of an actual occasion, from its emergence through the synthesis of prehended data from other actual occasion, to its satisfaction and perishing as it contributes novelty to the universe. Actual occasions relate to one another through the prehensions, as Paul Stenner writes: “an actual occasion is always a fusion of subject and object in the unified event of an experience.”⁷³ This focus on relation and unification is important to the process character of an actual occasion.

Whitehead breaks down prehensions into three components: “[E]very prehension consists of three factors: (a) the ‘subject’ which is prehending, namely, the actual entity in which that prehension is a concrete element; (b) the ‘datum’ which is prehended; (c) the ‘subjective form’ which is *how* that subject prehends that datum.”⁷⁴ Prehensions are “vehicles” and “vectors” by which actual occasions relate and grasp data from other actual occasions. A positive prehension is included and synthesized by the actual occasion during the process of concrescence. A negative prehension is the exclusion or the elimination of data or possibility from concrescence. Whitehead classifies specific types of prehensions based on several factors and operations which

⁷¹ Barad, *Meeting the Universe Halfway*, 33.

⁷² Alfred North Whitehead, *Process and Reality: An Essay in Cosmology*, ed. David Ray Griffin and Donald W Sherburne (New York: The Free Press, 1978), 18.

⁷³ Paul Stenner, “A.N. Whitehead and Subjectivity,” *Subjectivity* 22, no. 1 (2008): 90–109, <https://doi.org/10.1057/sub.2008.4>, 94.

⁷⁴ Whitehead, *Process and Reality: An Essay in Cosmology*, 23.

will not be detailed in full here; the takeaway is that prehensions are the appropriation of data (positively or negatively) between actual occasions and that these prehensions make up the actual occasion. The actual occasion prehends datum in accordance with its subjective forms. The subjective form is *how* the occasion reacts to the prehended datum, this is the immediate source of novelty in response to the objective datum prehended. The actual occasions also ingresses eternal objects, which are the *conditions and characterizations* of how the subjective form experiences the world.

Actual occasions are also the temporal units of Whitehead's system that are the base of his theory of space and time. Elizabeth Kraus's detailed companion to *Process and Reality* explains that two points are necessary to explore Whitehead's understanding of actual occasions as units of space-time: "(a) that the process of realization culminates in a structured quantum of space-time; and (b) that the process itself is neither temporal nor spatial: i.e., it does not occur *in* space or *in* time."⁷⁵ An actual occasion's realization or concrescence is the production of a unit of space-time, but the process does not occur in or over time or space - it creates it. Further, while actual occasions are units of process and come to exist through phases, the process is neither linear nor divisible (as these notions require space and time are not applicable to its becoming) and it occurs at once - like a quantum leap.⁷⁶ In order to best approach a description of Whitehead's time, I will start with what it is not and then follow up by spotlighting two important concepts for his theory of time, duration and contemporaneity.

Whitehead's theory of time is not a beads-on-a-string construction of temporality, though sometimes his choice of language muddles this distinction.⁷⁷ The beads-on-a-string model would

⁷⁵ Elizabeth M. Kraus, *The Metaphysics of Experience: A Companion to Whitehead's Process and Reality*, 2nd ed. (New York: Fordham University Press, 1998), 21.

⁷⁶ *Ibid.*, 24.

⁷⁷ *Ibid.*, 21-22.

assume that each occasion is independent and complete, with each instant strung together and linked on a pre-existing thread of linear temporality that stretches from the past and into an already existing (though beadless) future. It also assumes that each bead is only externally related to the next bead on the thread, serially. In contrast, Whitehead's theory of time is not serial in this way. Each actual occasion is not an externally related bead, but internally related in that it contains – or “covers” - all the other (temporally previous) members of its set or duration.⁷⁸ Further, there is no pre-existing thread of time on which to string events or space that a bead could assume, for Whitehead, the actual occasion creates space and time and can be thought of as a “space-time quantum.”⁷⁹ Or to put it another way, “time is an abstraction from the succession of actual entities.”⁸⁰

The use of the term duration helps to expose more of Whitehead's theory of time and how it operates in his philosophy. Whitehead is trying to build a system in which quantum thought, Einstein's relativity, and everyday experience (as we humans know it) can co-exist. When Whitehead uses the term duration he means to describe “a cross-section of the universe,” or “a ‘slab’ of the universe which include all those actual entities which are in concrescent unity.”⁸¹ Durations have a temporal thickness and contain actual occasions that are contemporaneous, or, contemporaries are members of the same duration; “The characteristic property of a duration is termed ‘unison of becoming.’”⁸² But this is not to say that all becomings

⁷⁸ Whitehead, *Concept of Nature*, 83.

⁷⁹ Kraus, *The Metaphysics of Experience: A Companion to Whitehead's Process and Reality*, 19.

⁸⁰ Donald W Sherburne, *A Key to Whitehead's Process and Reality* (Chicago: University of Chicago Press, 1966), 38.

⁸¹ Whitehead, *Process and Reality: An Essay in Cosmology*, 125.

Sydney E. Hooper, “Whitehead's Philosophy: ‘Space, Time and Things,’” *Philosophy* 18, no. 71 (1943): 204–30, 219.

⁸² Whitehead, *Process and Reality: An Essay in Cosmology*, 126.

that are in “unison” are contemporaneous (we will return to contemporaneity, first, back to duration).

An actual occasion, exemplified by *M* in this case, can exist in more than one duration (Figure 3.1), however, as Whitehead writes:

“According to the philosophy of organism, in the present cosmic epoch only one duration includes all *M*’s immediate present; this one duration will be called *M*’s ‘presented duration.’ But *M* itself lies in many durations, each duration including *M* also includes some portions of *M*’s presented duration.”⁸³

The duration of *M*’s immediate present is not the only duration, nor it is the only duration of which *M* is a part. The presented duration corresponds to the presentational immediacy of Whitehead’s model of perception, but most generally we can say that he is trying to develop a theory that allows for the quantum discontinuity and space-time warps, while retaining a concept similar to James’s specious present that corresponds to daily experience.⁸⁴

Another way to think of duration, Kraus offers, are the concentric rings that result from dropping a stone into water. This analogy does not attend to all the nuance set forth by Whitehead’s system, but it provides an accessible entry point. In this example, the variable circles represent durations and not singular actual occasions. A stone is dropped into the water, rings radiate outward. Imagine a frozen set of rings (See Figure 3.2). *A* in the center, followed by *B* (which includes *A*), *C* next (includes *B* and *A*), and so on. Kraus writes, “Each wave, together with its contained waves, can be taken to represent a duration in Whitehead’s sense of the term.

⁸³ Ibid., 125.

⁸⁴ Sherburne, *A Key to Whitehead’s Process and Reality*, 200.

The specious present was described by William James in *Principles of Psychology*. The concept itself was originated by E.R. Clay whom James quotes in full. James’s development of the specious present is vague, but in essence it describes a duration of time between seconds and a minute that characterizes our immediate sense presence. “The specious present has, in addition, a vaguely vanishing backward and forward fringe; but its nucleus is probably the dozen seconds or less that have just elapsed.”

William James, *The Principles of Psychology* (Harvard University press, 1983), 613.

Their ordered succession can serve as a model of time.”⁸⁵ Each circle includes the circles “before” it. Or put another way, each instance includes in its constitution the previous durations. In this way, the philosophy of organism is, like Barad, anti-representationalist. Through prehension, actual occasions are present in the subsequent “waves” of becoming occasions. The analogy is not perfect, but it does help to emphasize that a pattern is being created through the continuum in “waves” of unified concrescence.⁸⁶ This point of patterning will be important when we discuss endurance in the following section.

As durations help to illustrate, this is not beads-on-string linear time. Whitehead’s time is sequential, but it is not serial. He expressly states this system, influenced by relativity and modern physics, rejects the serial view of time in which two entities exist necessarily in the same world. Rather, “according to the modern view no two actual entities define the same actual world.”⁸⁷ The way contemporaneity operates in this model of time provides an understanding of how relativity and duration work together to explain quantum behaviors and multiple systems of space-time. Referring back to actual occasion M in the former example, M can exist in more than one duration but only one duration contains all of M’s immediate present (termed presented duration). Figure 3.1 helps to explain how contemporaneity works; lines have been drawn to express connectivity – these lines are not representative of linear time but to connect sets of contemporaries in a duration. In Figure 3.1, M is a contemporary of N and also a contemporary of P, however, P and N are not contemporaries. While the Duration-MN and the Duration-MP are both in “unison of becoming,” P and N are not contemporaries and do not share a duration, they are not in the same slice of space-time.⁸⁸

⁸⁵ Kraus, *The Metaphysics of Experience: A Companion to Whitehead’s Process and Reality*, 22.

⁸⁶ *Ibid.*, 24.

⁸⁷ Whitehead, *Process and Reality: An Essay in Cosmology*, 65-66.

⁸⁸ *Ibid.*, 126.

Relative space and time in this sense means that real actualities do not require a shared locus to define them. Michael Halewood summarizes the impact of relativity to this system as follows:

“So, although the theory of relativity might only be observable in cases such as ‘the perihelion of mercury, and the positions of the stars in the neighborhood of the sun’ (CN, 169), this does not mean that there is not a myriad of time-space systems which are normally ignored (in conscious human experience)... Whitehead’s theory allows for the description of an entity as inhabiting differing spatial and temporal systems concurrently.”⁸⁹

The philosophy of organism is boldly stating, that when something is felt by an occasion it truly becomes part of the experience of that occasion, unbound by classical theories of space and time. Occasions are not just arranged as a serial-linear order of events, beads-on-a-string. The potentialities and provocations of durations of space and time open experience for a whole range of dimensional possibility, by which we can understand quantum behaviors like quantum jumps and spooky action as a distance.

Barad’s agential realism does not delve into time with the same depth and structure as Whitehead does with duration, but it is deeply invested in outlining a structure that supports the findings of quantum experimentation. There are points of strong similarity between the two approaches: Barad does not pose a linear beads-on-a-string model of classical time either, she writes:

“Time is not a succession of evenly spaced intervals available as a referent for all bodies and space and is not a collection of preexisting points set out as container for matter to inhabit. Intra-actions are nonarbitrary non-deterministic causal enactment through which matter-in-the-process-of-becoming is iteratively enfolded into its ongoing differential materialization; such a dynamics is not marked by an exterior parameter called time, nor does it take place in a container called space, but rather iterative intra-actions are the dynamics through which temporality and spatiality are produced...”⁹⁰

⁸⁹ Michael Halewood, *A. N. Whitehead and Social Theory* (London: Anthem Press, 2011), 34-35.

⁹⁰ Barad, *Meeting the Universe Halfway*, 234.

Barad and Whitehead are both refusing a pre-existing linear timeline and space-as-a-container. Intra-actions (Barad) and actual occasions (Whitehead) are both themselves outside of space and time but producing it. Intra-actions are “causal” for Barad, and for Whitehead actual occasions are the “only reasons.” These two concepts evoke similarities in one another, but I do not want to imply that they are in any way synonymous or equivalent. I only intend to show sympathetic operations in both systems that account for causality and the creation spacetime through iteration (Barad) and patterning (Whitehead). Recall that “intra-action” as term is chosen by Barad to specifically reinforce her dictum that ‘relations precede relata.’ Whereas Whitehead’s actual occasions “are the final real things of which the world is made up. There is no going behind actual entities to find anything more real.”⁹¹ For Barad, phenomena are the “basic units of reality.”⁹²

The agential realist view of time is one of reconfiguring and enfolding. Barad writes:

“The existence of the quantum discontinuity means that the past is never left behind, never finished once and for all, and the future is not what will come to be in an unfolding of the present moment; rather the past and the future are enfolded participants in matter’s iterative becoming. Becoming is not an unfolding in time, but the inexhaustible dynamics of the enfolding matter.”⁹³

Intra-actions produce space and time while the past and future enfold into itself in repetitions of materialization. Becoming does not unfold, but enfolds, sedimenting practices and agential forces.⁹⁴ The past is not ‘finished’ and time is open to re-configuring through the intervention of

⁹¹ Whitehead, *Process and Reality: An Essay in Cosmology*, 18.

⁹² Barad, *Meeting the Universe Halfway*, 33.

⁹³ *Ibid.*, 234.

⁹⁴ *Ibid.*, 180.

apparatuses (“apparatuses are not located in the world but are material configurations or reconfigurings of the world that re(con)figure spatiality and temporality”).⁹⁵

Barad describes and references quantum-eraser experimentation to conclude that the past and future enfold and iteratively reconfigure phenomena.⁹⁶ The full details of this experiment will be very abbreviated here, as I am more interested in what Barad argues based on her reading of the experiment than the accuracy of her interpretation which she lays out in greater detail in “Troubling Time/s and Ecologies of Nothingness.”⁹⁷ To summarize, the quantum-eraser experiment is alteration of a two-slit experiment. In the classic two-slit experiment (see Figure 3.3), a beam passes through a grating with two-slits to present a pattern onto a screen. The two-slit experiment demonstrates that under certain conditions a particle can behave like a wave (i.e., “each individual particle is in a state of superposition that includes the possibility of going through both openings at once, as a good wave does”) exhibiting a diffraction pattern on the screen.⁹⁸ When a “which-slit” detector is added to the two-slit experimental set-up that records which slit in the grating a particle travels through, it will go through one or the other and exhibit a scatter pattern on the screen (“like a good particle”).⁹⁹ Hence, if no data is collected the beam is a wave with a diffraction pattern, and if the detector is “watching” it is a particle with a scatter pattern. In the quantum-eraser set-up (Figure 3.4), Barad describes:

“the experimenter now adds a device that enables the erasure of the information about which slit a particle goes through *after* it’s already gone through the diffraction grating... remarkably, a diffraction pattern appears! - indicating that each particle *will have gone through* both slits at once!...The claim made by the physicists who proposed and conducted the quantum-eraser experiment is that this is evidence of changing the past.”¹⁰⁰

⁹⁵ Ibid., 146.

⁹⁶ Ibid., 316.

⁹⁷ Karen Barad, “Troubling Time/s and Ecologies of Nothingness: Re-Turning, Re-Membering, and Facing the Incalculable,” *New Formations*, no. 92 (2017): 56–86.

⁹⁸ Ibid., 71.

⁹⁹ Ibid., 71.

¹⁰⁰ Ibid., 71.

To rephrase, the “which-slit” detector records data about which slit the “particle” went through. If that data is erased by another device just after the “particle” moves through the grating (erasing the data proving particle-determining behavior), then the particle behavior is “erased” as well and evidence of a wave-behavior (diffraction pattern) appears.

Barad makes two points about this experiment. First, that the importance of this experiment is not about erasing the past of a particle, “but that the very nature of its being, *its ontology, in the past remains open to future reworkings* (that is whether it will have been a wave or a particle, which are ontologically different kinds).”¹⁰¹ Barad cites this as evidence for the relational ontology of agential realism. Secondly, she explains that the miraculous diffraction pattern does not appear, per se, but it is recovered and found in the (particle-behaving) scatter pattern by tracing the entanglements.¹⁰² The erasure was not a complete erasure and traces remained. She writes,

“Not only does the experiment call into question the classical Newtonian conception of time, as an unabated continuous flow moving inexorably from past to future, where the past is passed and the future will unfold on the basis of what is the case in the present moment, but also the assumed existence of a present-past and the very possibility of erasure without a trace...*while the past is never finished and the future is not what will unfold, the world holds the memories of its iterative reconfigurings.*”¹⁰³

Barad is hesitant to say too much about what the questioning of classical time does, but rather wants to show that even what seems like the erasure of the past does not remove all marks. It is unclear from her discussion exactly what questioning the flow of time in this way means for the past. While it can be reworked, it cannot be erased. It seems like, for Barad, the past can be

¹⁰¹ Ibid., 71.

¹⁰² Ibid., 73.

¹⁰³ Ibid., 73.

smudged but how this translates outside of quantum experimentation is not elaborated in a way that challenges the human experience of lived time.

In the same text, Barad gives “a diffractive reading of quantum physics’ radical reworking of time through [Kyoko Hayashi’s book] *From Trinity to Trinity*.”¹⁰⁴ Hayashi, a survivor of the American atomic bombing of Nagasaki, writes about the journey of a survivor to New Mexico to visit the Trinity nuclear testing site with interspersed reflections on the bombing and its effects. Barad reflects on the narrator’s journey through the National Atomic Museum, where the photographs exhibited show what was erased by the bomb - human lives, buildings, plants and animals; what existed was erased, leaving traces behind. She also emphasizes the complete erasure of American violence and military aggression from the historic memory in the exhibition.¹⁰⁵ Barad writes:

“Hayashi’s narrator bodily traces these entanglements of colonialist histories, violent erasures, and avoidances as an integral part of a sacred practice of re-membering – which is not a going back to what was, but rather a material reconfiguring of spacetime-mattering in ways that attempts to do justice to account for the devastation wrought and to produce openings, new possible histories, reconfigurings of spacetime-mattering through which time-beings might find a way to endure.”¹⁰⁶

The reading Barad provides leaves me to think that the radical quantum ‘reworking of time’ implied by the quantum eraser experiment is less radical and more figurative than first argued. Memories and histories are revised, erased, distorted, unjustly unremembered; but the past is not altered, or erased, or made to be ontologically different as the quantum experimental evidence is arranged to present. Quantum discontinuity and the upsetting of classic Newtonian time is not exemplified by non-linear human storytelling practices or a biased government-chartered

¹⁰⁴ Ibid., 61.

¹⁰⁵ Ibid., 75.

¹⁰⁶ Ibid., 76.

museum. Barad ends the above quote by writing that the reconfigurations of time are the ways “through which time-beings might find a way to endure.”¹⁰⁷ In my reading, Barad does not outline mechanisms in her framework, which insists on ‘relations preceding relata,’ that allows for endurance. The ways in which time-beings can endure are not clarified in her work.

Barad notes that humans were not the only casualties (immediate, prolonged, and inherited) of both nuclear testing in the U.S. and the genocidal bombings of Japan, but the damage extends to the earth, wildlife, and extensive surrounding ecosystems via wind and weather patterns. Yet the reconfigurings of the past in this example are all uniquely human endeavors to alter human memory, with no effect on the pasts of the non-human entities impacted. Are humans the only ones reconfiguring or impacted by the reconfiguring of the past? This would not be in line with the non-anthropocentric commitments of agential realism, but the ramifications of radical reworkings of the past on non-human entities is not examined. Barad questions time flowing from past to future, citing the quantum eraser, but the actual implications for a theory of time in agential realism are not undertaken.

In this section, I have presented Whitehead’s theory of time and relativity through his concepts of duration and contemporaneousness to illustrate how Whitehead looks at time and the past. Barad has similar notes in her dismissal of serial time, but cites the quantum-eraser as evidence that the past is “never finished.”¹⁰⁸ She offers an interpretation of the experiment that emphasizes the ontological reconfiguration of the past as well as the inability for the past to completely erased. As she furthers her diffractive reading to explore the “radical reworking of time,” it becomes less clear how the quantum evidence she provides can successfully ‘jump

¹⁰⁷ Ibid., 76.

¹⁰⁸ Barad, *Meeting the Universe Halfway*, 234.

scale’ and maintain its applicability outside of the quantum realm.¹⁰⁹ This is not to say that ‘scale’ and boundaries (spatial and otherwise) are nested or fixed; or that they must be traversed without frictions. But rather, it is unclear how Barad is making use of her quantum premise and the conclusions she draws from the experimentation. In the next section, I will explore the impact of Whitehead and Barad respective thoughts on time and the past to examine how they impact their formulations of the subject/object relationship.

3.5 Subjects, Objects, & Time

In *Adventures of Ideas*, Whitehead addresses many topics of human experience, Western civilization, and a lot of Plato. He recounts some the main ideas of the system presented in *Process and Reality* but dials back the technical language of mapping his complex system and describes his philosophy with more evocative language. In a chapter called ‘Objects and Subjects,’¹¹⁰ he writes:

“When Descartes, Locke, and Hume undertake the analysis of experience, they utilize those elements in their own experience which lie clear and distinct, fit for the exactitude of intellectual discourse...No topic has suffered more from this tendency of philosophers than their account of the object-subject structure of experience.”¹¹¹

Whitehead takes issue with the subject-object distinction as it is historically equivocated as a knower-known relationship. This imparts a concept of knowledge that is associated with consciousness that is present in only some experiences. Rather, Whitehead writes, “The basis of

¹⁰⁹ Barad, “Troubling Time/s and Ecologies of Nothingness: Re-Turning, Re-Membering, and Facing the Incalculable,” 61.

Barad, *Meeting the Universe Halfway*, 245.

¹¹⁰ Lowe calls this passage the *locus classicus* for Whitehead’s conception of experience (274). The technicality of *Process and Reality* is softened in this passage. As *Adventures of Ideas* is devoted mostly to topics of human experience, his retelling of the metaphysical system seems to be more descriptive of the experiences of complex societies.

¹¹¹ Whitehead, *Adventures of Ideas*, 175.

experience is emotional. Stated more generally, the basic fact is the rise of an affective tone originates from things whose relevance is given.”¹¹² Relevance is given as “concern.”

Whitehead notes that “concern” should be thought of in the Quaker sense of the word and divorced of any association with knowledge.¹¹³ The Quaker “concern” is no light matter, but an urging by the higher power to undertake a personal mission. Steven Shaviro describes how Whitehead intends this usage, “...for the Quakers, *concern* implies a weight on the spirit... Concern, therefore [for Whitehead], is an involuntary experience of being affected by others.”¹¹⁴ The affective and emotional tone of the relations is then set when Whitehead writes, “The occasion as subject has a ‘concern’ for the object. And the ‘concern’ at once places the object as a component in the experience of the subject, with an affective tone drawn from this object and directed toward it.”¹¹⁵ The connection between the subject and the object is affective and relational. In *Process and Reality* the relation between the subject and object was termed prehension, and discussed in the previous section. Thus, prehensions are affective, occurring between a subject and an object for which it has concern.

Whitehead offers a reformulation of subject and object terminology as “Recipient and Provoker;” though he immediately notes the association of recipient with passivity would be “erroneous” in his usage.¹¹⁶ The subject, as Recipient, is not only concerned, but provoked by the object/Provoker. A provocation, importantly, it not indicative of a response, it can be responded to or ignored. Both the acts of provocation and response, and the designated roles (provoker and recipient, object and subject) are characterized as active and agential.

¹¹² Ibid., 175.

¹¹³ Ibid., 176.

¹¹⁴ Steven Shaviro, *The Universe of Things: On Speculative Realism* (Minneapolis: University of Minnesota Press, 2014), 14.

¹¹⁵ Whitehead, *Adventures of Ideas*, 176.

¹¹⁶ Ibid., 176.

Unlike Barad, temporality is a key part of his formation of the subject and object dynamic. Objects are always in the past and completed (in terms of concrescence) and subjects are becoming. Subject and object are temporal distinctions and not spatial distinctions. In order to be an object in the process of experience, two criteria must be met:

“(1) the entity must be *antecedent*, and (2) the entity must be experienced in virtue of its antecedence; it must be *given*... ‘Objects’ for an occasions can also be termed ‘data’ for that occasion. The choice of terms [object or data] entirely depends on the metaphor which you prefer. One word carries the literal meaning ‘lying in the way of’, and the other word carries the literal meaning of ‘being given to’. But both words suffer from the defect of suggesting that an occasion of experiencing arises out of a passive situation which is a mere welter of many data.”¹¹⁷

Language, for Whitehead, often betrays the active nature of process – but even objects, as always part of the temporal past, have active agency and provoke the novel constitution of the becoming actual occasion. Objects and the past are not passive, as such, they just already happened.

When an actual occasion achieves its concrescence, its (temporal) role as a becoming subject is completed, and it “perishes” to become an object for future occasions/subjects.

Whitehead calls this “objective immortality,” he writes:

“All ‘relatedness’ has its foundation in the relatedness of actualities; and such relatedness is wholly concerned with the appropriation of the dead by the living – that is to say, with ‘objective immortality’ whereby what is divested in its own living immediacy becomes a real component in other living immediacies of becoming. This is the doctrine that the creative advance of the world is the becoming, the perishing, and the objective immortalities of those things which jointly constitute *stubborn fact*.”¹¹⁸

The subject/object structure, for Whitehead, is integral to demonstrating his theory of time and his anti-representationalism. The past, perished occasions, objects, provokers show us “the real agency of the actual past” as it is ‘appropriated’ by becoming occasions.¹¹⁹ While objects are

¹¹⁷ Ibid., 179.

¹¹⁸ Whitehead, *Process and Reality: An Essay in Cosmology*, xiii-xiv.

¹¹⁹ Whitehead, *Adventures of Ideas*, 210.

objective data for the becoming occasion, it is important to recall the subjective form of the actual occasion determines *how* that data is felt. “[T]he subjective form is the immediate novelty; it is how *that* subject is feeling that objective datum.”¹²⁰ This is one way by which each actual occasion is novel and adds to the creative advance by which the ‘many’ become unified “and are increased by one.”¹²¹

The subject and the object in agential realism are all one phenomenon, time and space are a product of intra-action. As such, Barad avoids a spatialized conceptualization of the subject/object relationship that risks bringing in classical physics and substance-oriented thought which are at odds with the relativity and flux of her commitments. But Whitehead, also dealing with the same relative concepts of space-time chooses to temporalize the subject/object relationship. The temporal ordering of the object accounts for the ‘stubborn fact’ of the past in the philosophy of organism.

For both thinkers, the past is never really ‘finished’ in a sense. For Whitehead the past is fixed but not ‘finished’ or abandoned in that it is prehended into the becoming of the present. Barad’s past is sedimented in the enfolding of the present and iterated in mattering. On these notes, there are resonances between the two frameworks. However, the temporal characteristic of the object does not stand for Barad, and Whitehead does not allow for a past that can be ontologically altered. There is no way, for Barad, that the object come before the subject temporally, as they are agentially cut by apparatuses through intra-action that create space-time and make the subject and the object describable. As Barad reiterates, ‘relations precede relata.’ In the following section, I apply the implications of the subject/object relationship as well as Barad and Whitehead’s respective theories of time to the problem of endurance.

¹²⁰ Whitehead, *Process and Reality: An Essay in Cosmology*, 232.

¹²¹ *Ibid.*, 21.

3.6 Relations & Endurance

Whitehead and Barad do not present identical models of the subject/object relationship, however, neither is a conventional voluntarist subject. Traditionally, a subject has agency, or a voice, or autonomy; while the object is objectified passively or acted upon, without its own perspective. Feminist theory has engaged with this dualism from many angles in attempts to deal with a history of discrimination and colonialism. Barad's project is not to continue this line of thinking but to break from it by offering an alternative that is not premised on the voluntarist subject. Instead she presents the inseparable agential components of phenomena as the basic ontological unit of her framework which constructs subjects and objects through the agential cuts of changing apparatuses; she seeks to emphasize relations over entities. Barad repeats throughout her text that a crucial element of agential realism is an understanding that "relata do not precede relations." Barad writes:

"On the basis of the notion of intra-action...I argue that it is through specific agential intra-actions that the boundaries and properties of the "components" of phenomena become determinate and that particular material articulations of the world become meaningful. A specific intra-action (involving a specific material configuration of the "apparatus") enacts an agential cut (in contrast to the Cartesian cut – an inherent distinction between subject and object), effecting a separation between "subject" and "object." That is, the agential cut enacts a resolution within the phenomenon of the inherent ontological (and semantic) indeterminacy. In other words, relata do not preexist relations; rather, relata-within-phenomena emerge through specific intra-actions."¹²²

Barad presents a relational premise in which the intra-action creates relata with apparatuses creating boundaries and enacting agential cuts that resolve and determine a division between subject and object.

¹²² Barad, *Meeting the Universe Halfway*, 333-334.

As an atomic view of process, Barad's approach on a quantum scale seems sufficient, but leaves some questions on the table, namely, questions of endurance. Following the critiques of Martin Savransky and Levi Bryant, how do the entities endure if relations always come before and determine relata? Savransky writes:

“That is, whether there is any way in which an entity might be said to enter into new relations – and hence to have a relative pre-existence with respect to them – whether it might be capable of being affected by such novel encounters without becoming *an entirely other entity*.”¹²³

Barad's system embraces flux, but the exclusive focus on external relations as creating and “cutting” the subject does not allow for an enduring entity.

Bryant's criticism follows the same line of questioning, but additionally explores the ethical ramifications, albeit with a bend toward furthering his object-oriented framework. If intra-actions create new entities, he says, how is an entity subject to changing relations? He provides the example of bird eggs; why would one worry about what happens to eggs when they are exposed to DDT if this intra-action creates a new distinct entity.¹²⁴ Following Barad's logic, Bryant writes: “In the experimental setting it would not make sense to act on substances to see what they do or vary relations between substances to see what happens, because entities would be completely exhausted by their relations at this particular moment.”¹²⁵ In order for the apparatus to be designed to make any determinate (or determining) measurement, something about the relata in question must be “known.” Qualities themselves maybe be indeterminate and boundaries maybe negotiable, but what draws Barad into the idea of indeterminacy requires that a “known” entity exhibits the ability to become one or the other. Without the stability of a

¹²³ Savransky, “Modes of Mattering: Barad, Whitehead, and Societies,” 13.

¹²⁴ Levi R. Bryant, “Relata Do Not Precede Relations,” Larval Subject [Blog], 2012, <https://larvalsubjects.wordpress.com/2012/09/27/relata-do-not-precede-relations/>.

¹²⁵ Ibid.

“known” entity, the determination made by the measuring device was never possibly anything else.

What Bryant is touching on, especially with the DDT example, strikes the same tone as those who critique Barad’s use of agency discussed in Section 3.3. Endurance, like agency, becomes necessary for responsibility. I previously argued that Barad’s concept of agency does not necessarily depoliticize situations or obscure domination and exclusions, though it does increase the complexity and nuance of accountability. In the case of endurance, however, these critiques do apply. Without a selfsame entity to be impacted by intra-action and relations, responsibility can get sidelined. If every iteration of apparatuses cutting and rendering phenomena legible creates an entity that is distinctly new rather than changed, responsibility is subverted in flux.

Whitehead is entirely aware of this problem, as he tries to balance novel flux and perpetual perishing, he says:

“Descartes’s solution to the problem of how a thing exists from one moment to the next is that God continually recreates things. But if I am knocked on the head, and God recreates me, in what sense and I the same person, I want to know? ...In what sense is Alfred Whitehead beginning this sentence and Alfred Whitehead ending this sentence the same Alfred Whitehead, if he is continually recreated?”¹²⁶

Barad is certainly not depending on God (even Whitehead’s version) to recreate things. She is relying on material-discursive practices as apparatuses to create iterations of mattering in phenomena, human and non-human. Despite an enfolded past sedimented in iterative becoming of materiality, there is still not an enduring thing that is selfsame through different iterations of determining cuts over time in agential realism. Though it is ‘cut’ from the entanglement of

¹²⁶ Joseph G. Brennan, “Notes and Discussion: Whitehead on Time and Endurance,” *Southern Journal of Philosophy* 12, no. 1 (1974): 117–26, 120.

phenomenon that retains the marks of the past, each iteration produces a new entity. Barad does not provide a mechanism under which endurance can operate.

Savransky identifies tones in Barad's text that he reads as Barad's recognition of this issue without directly addressing it and the critique he offers is not nearly as blunt as the one offered by Bryant. Yet he affirms that the radical push for the primacy of relations in the creation of the subject risks, what he calls, "relational reductionism."¹²⁷ In Barad's focus on relations, in part to resist a metaphysics of individualism, she misses endurance. Savransky looks to Whitehead's model for societies as a solution that maintains the importance of external relations while allowing for enduring entities. Whitehead's actual entities never change. They become through their prehensions of other entities and perish. But Whitehead avoids the problem of the *entirely new entities* by combining his philosophy of process and flux with components that ensure temporal endurance through *societies* of actual entities.

An actual entity is not a *thing* as we experience things. The things we know in human experience are nexūs or societies, which are related sets of actual entities.¹²⁸ While all societies are technically nexūs, not all nexūs are societies; though Whitehead will sometimes refer to a society as a nexus, as societies are a class of nexūs.⁶⁵ A nexus of actual entities is an important component of the system, as the ordinary things of day-to-day experience are nexūs or societies. Most nexūs have temporal and spatial thickness, though they may possess only one or the other. A nexus can be non-social or have no social order. Whitehead writes, "A non-social nexus is what answers to the notion of 'chaos.'"¹²⁹

¹²⁷ Savransky, "Modes of Mattering: Barad, Whitehead, and Societies," 22.

¹²⁸ Nexus is the singular form of term, nexūs is plural.

¹²⁹ Whitehead, *Process and Reality: An Essay in Cosmology*, 72

Societies differ from nexūs in that they have “social order” and a common element that define the actual entities as a society. Electrons, rocks, dogs, and people are all examples of societies of actual entities.¹³⁰ There are orders of complexity and structure that differentiate these examples, but all the same, they are societies of actual entities.

“The point of a ‘society,’ as the term is here used, is that it is self-sustaining; in other words, that it is its own reason. Thus a society is more than a set of entities to which the same class-name applies: that is to say, it involves more than a merely mathematical conception of ‘order.’ To constitute a society, the class-name has got to apply to each member, by reason of genetic derivation from other members of that same society.”¹³¹

All enduring entities are societies in which there is some level of organizational complexity. There are several types of societies including structured societies, living structured societies, corpuscular societies, and personally ordered societies that correspond to different organic and inorganic, living and non-living entities. What is important to note here, is that a temporally enduring thing with social order is a society. Through the concept of the society, Whitehead illustrates how endurance operates is a system of flux.

A society “enjoy social order” and “arises out of the special genetic relations among the members.”¹³² The members of a society have an interest in each other, but the boundaries of a society are not a fixed delineation. Whitehead writes, in reference to personally ordered societies (like an animal body), “if we are fussily exact, we cannot define where a body begins and where external nature ends.”¹³³ An actual entity in and of itself is not capable of any change; it becomes through its prehensions, achieves its satisfaction, and perishes. But a society of actual entities has

¹³⁰ All of these examples are used by Whitehead, “each electron is a society of electronic occasions.” (PR 91) Extensive yet informal debates with other Whiteheadian scholars has led to the consensus that while these entities listed represented societies per Whitehead, a pizza is in fact a nexus.

¹³¹ Ibid., 89.

¹³² Ibid., 35.

¹³³ Alfred North Whitehead, *Modes of Thought* (New York: The Free Press, 1968), 21.

an inheritance by which its members, becoming and perishing, maintain a ‘genetic’ relation. That is not to imply that an enduring entity has permanence, for Whitehead, any endurance is an achievement and not a given:

“[T]here is no society in isolation. Every society must be considered with its background of a wider environment of actual entities, which also contribute their objectifications to which the members of the society must conform. Thus the given contributions of the environment must at least be permissive of the self-sustenance of the society.”¹³⁴

With the concept of society, Whitehead allows for entities that maintain the internal relations and processes of the actual entities but allow also for the chance of endurance against external relations. He is demonstrating through the concept of a society that endurance does not have to slip back to a substance-based ontology.

Barad's focus on relations avoids a metaphysics of individualism as part of her disavowal of classical physics and rejection of substance-based ontology. Whitehead's actual entities and societies attempt to skirt the matter. In the discussion of duration, each temporal “wave” or duration was described as a pattern of concrescent unity of becoming. This patterning, reflects the ‘genetic’ relation of an enduring entity. As Kraus describes:

“An enduring object is therefore to be conceived as a succession of occasions each structuring its definiteness via the same pattern. In each occasion of that thread, the achieved pattern is displayed, the serial order and sheer succession of these displays being what constitutes time in its most concrete and relativistic form.”¹³⁵

Through patterns of endurance, Whitehead's societies are constructed to maintain individuality that is not dependent on substance. Enduring objects are a part of experience that he does not want to give up. He says, “I don't quite want to give up individualities. There *are* entities, but if

¹³⁴ Whitehead, *Process and Reality: An Essay in Cosmology*, 90.

¹³⁵ Kraus, *The Metaphysics of Experience: A Companion to Whitehead's Process and Reality*, 20.

you think about them long enough their separateness tends to disappear.”¹³⁶ Societies do not endure in isolation. They are part of their environments, experiencing, patterning and repeating, like Cleopatra’s Needle they are ‘there again’ but not unchanged.

The apparatuses that cut and shape the always new entities in Barad are iteratively refigured through intra-action with other material-discursive phenomena, or other apparatuses. In this way, the apparatus is always capable of change as part of the intra-active agential realism of phenomena. Further, the phenomena in question sees no ontological separation between the apparatus and the entity until the agential cuts creates the determinate (but not permanent) boundaries of the subjects of that intra-action.¹³⁷ In my reading, the subject thus created from relations does not have the opportunity to impact the relations that define it without losing its own determination. How, in fact, apparatuses change and re-configure through intra-action remains unclear. I argue along with Savransky and Bryant that without an enduring subject, there is no single entity to be *changed* by relations, only created through relations. I extend this argument with Whitehead to say the enduring entity is necessary both to be changed by and to change intra-actions or relations. For Whitehead, entities – through their perishing and through their endurance contribute to relations, he writes:

“It must be remembered that just at the relations modify the nature of the relata so the relata modify the nature of the relation. The relationship is not a universal. It is a concrete fact with the same concreteness as the relata.”¹³⁸

Part of Barad’s intent with the repeated statement that ‘relata do not precede relations’ is to reinforce the way in which material-discursive apparatuses create novel agential cuts, shaping subjects – creating new entities and leaving open dynamic possibilities for change – in intra-

¹³⁶ Brennan, “Notes and Discussion: Whitehead on Time and Endurance,” 125.

¹³⁷ Barad, *Meeting the Universe Halfway*, 208.

¹³⁸ Whitehead, *Adventures of Ideas*, 157.

actions where changing possibilities exist at every moment in the world. As we have discussed, Whitehead's actual entities do not change (they achieve satisfaction and perish) and though societies may have the opportunity to endure under favorable circumstances and relations, their internal and external constitution is subject to perishing and destruction. While Barad's entities emerge from phenomena anew, changed, and determined by the boundary-making agential cuts of apparatus.

Whitehead's actual entities are each novel; provoked by the 'objectively immortal' object of the perished past, theyprehend the past in accordance with their subjective form. In a unifying concrescence of object and subject they contribute novelty into the creative advance of the universe. The novelty of each occasion creates possibilities for changes in how it will beprehended by the next iteration of becoming occasions. As members of a society of an enduring entity, actual occasions carry forward a pattern, an inheritance of social order that allows a selfsame entity a chance at endurance in the wider environment. Whitehead's theory of time, as well as his temporal ordering of the object/subject, provoker/recipient relationship are necessary for endurance to exist in his system.

The interplay of these points allows Whitehead to balance flux and novelty with the conformation and endurance of entities as we (humans) experience them in the world. He writes,

“You can think of time as becoming, a perpetual flowing to a newness, the essential novelty of the future. This is an optimistic way of thinking. Bergson likes it....Or you can think of time as a falling away, as Locke says, a “perpetual perishing.” This tends to be pessimistic...But if you hold, as I do, that transition, passing, is the nature of things, you can see the past is becoming the basis of the present. The immediate past enters into the present.”¹³⁹

¹³⁹ Brennan, “Notes and Discussion: Whitehead on Time and Endurance,” 125.

Barad's time, put into this frame, would seem to align with Whitehead's characterization of Bergson, but even that would be an oversimplification of what she puts forth in agential realism. Rather, her focus on intra-action and relations misses an opportunity for endurance, which Whitehead seeks to retain in a system that embraces flux and transition.

3.7 Conclusions

This chapter has examined Whitehead's philosophy of organism and Barad's agential realism through the lens of time and endurance. Beginning by situating the two thinkers and their relation to quantum physics, we see that they both are facing the same problems. How does the shift away from classical physics and evidence of quantum physics impact the way we think about the world? Their very different projects, Whitehead's metaphysics and Barad's epistemological-ontological-ethical framework, answer this provocation differently but strike several similar tones. For Barad, ethics, ontology, and epistemology must be reevaluated in light of quantum discontinuity and relative space-time resulting in her agential realist framework. Whitehead takes on the creation of a metaphysical system which he intends to be coherent and inclusive of both quantum and everyday (human, lived) experience.

Barad constructs agential realism as a performative approach, whereby bodies (human and nonhuman) come to exist through the agential intra-action of phenomena and apparatuses or open-ended boundary-making practices. The agential cuts that determine the subject make it intelligible, but the boundaries are not fixed. Time, past and future, is enfolded in becoming. The past is never fully erased and it is not finished. Barad cites experimental quantum evidence as indicative of the validity of her posthumanist performative framework. However, when applied,

especially in her reading of Kyoko Hayashi's book *From Trinity to Trinity*, the radical quantum findings are not fully realized and Barad is not making use of her premise.

Whitehead's sequential, but not serial, view of time fully embraces the past in that his structure of subject/object relations is in itself temporal and reflective of his theory of time and relativity. The patterning that can be seen in his concept of duration provides a model of time that can uphold the idea of endurance in system of flux. Further, the internal relations and inheritance in societies of 'vibratory organisms' makes it possible for "the character of being the situations of Cleopatra's Needle" to provoke the response from a passerby: "Hullo, there's the Needle."¹⁴⁰ Whitehead is exceedingly technical on these points. His speculative philosophy and system is insistent upon sorting the nuts and bolts of experience without bifurcation.

Barad's agential realist framework is not intended to describe the cosmos, but to develop a set of concepts that will enable a rethinking of dualism and representationalism performatively and ethically. However, Barad repetition that 'relations precede relata,' as we have seen, does not account for enduring entities. I follow Savransky in his assertion that Barad's avoidance of the issue of endurance is in part an avoidance of a metaphysics of individualism and a Cartesian view of the subject/object distinction.¹⁴¹ Further, I read Barad's commitment to quantum physics, relative space-time, and 'phenomena as a single entity' as resistant to a traditional spatial conceptualization of the subject/object split. Whitehead, alternatively temporalizes this relation, thereby keeping mechanisms to account for endurance.

Without selfsame enduring entities entering sets of relations, we are left with the constant creation of novel subjects. In that case, the critiques applied to Barad's concepts of agency as obscuring responsibility can then be reintroduced to problematize the lack of enduring entities.

¹⁴⁰ Whitehead, *Concept of Nature*. 167, 169.

¹⁴¹ Savransky, "Modes of Mattering: Barad, Whitehead, and Societies," 17.

How does an entity maintain its ‘character’ if every set of relations redefines it as a new entity? Why does it matter if eggs are exposed to DDT if the intra-action creates a distinct new entity? Or, “In what sense is the Alfred Whitehead beginning this sentence and Alfred Whitehead ending this sentence the same Alfred Whitehead, if he is continually recreated?”¹⁴² Out of the single entity of phenomena, past and future enfolding, each agential intra-action reshapes and reconfigures boundaries between apparatuses and recreates the subject. As Barad writes, “The world is not populated with things that are more or less the same or different from one another. Relations do not follow *relata*, but the other way around.”¹⁴³

Whitehead offers a way to embrace endurance, not as permanence, but a vibratory pattern. Endurance is not about sliding back to substance or siding with classical physics, but maintaining the pattern of character through all of “being the situations of Cleopatra’s Needle.”¹⁴⁴ Barad’s purpose, as stated, is not to explain all facets of experience in a systemized way. However, by not engaging with possibilities through “which time-beings might find a way to endure,” Barad’s framework is left open to criticism.¹⁴⁵ Despite the differences of their projects, the similarities in the motivations and commitments of these two thinkers provides compelling evidence for continued conversations, engagements, and diffractions that attend to the purposes they set out and open more opportunities and possibilities for rethinking the universe.

¹⁴² Brennan, “Notes and Discussion: Whitehead on Time and Endurance,” 120.

¹⁴³ Barad, *Meeting the Universe Halfway*, 136.

¹⁴⁴ Whitehead, *Concept of Nature*, 167.

¹⁴⁵ Barad, “Troubling Time/s and Ecologies of Nothingness: Re-Turning, Re-Membering, and Facing the Incalculable,” 76.

Chapter Four.

Eid Ma Clack Shaw: Affect and Feeling

“[W]e must appeal to evidence relating to every variety of occasion. Nothing can be omitted, experience drunk and experience sober, experience sleeping and experience waking, experience drowsy and experience wide-awake, experience self-conscious and experience forgetful, experience intellectual and experience physical, experience religious and experience skeptical, experience anxious and experience care-free, experience anticipatory and experience retrospective, experience happy and experience grieving, experience dominated by emotion and experience under self-restraint, experience in the light and experience in the dark, experience normal and experience abnormal.”¹

4.0 Introduction

The “affective turn” in critical theory has generated a considerable amount of scholarship in the past twenty-five years, with numerous converts in the social sciences and possibly as many detractors. A general resistance to defining “affect” as a term or codifying what constitutes an affective approach allows authors generous space to think about feeling and its implications to understandings of politics, power, and social life. Tying together affect in the broadest sense, is a renewed focus on the body and a refreshed conceptualization of the relationship between body and mind. A strong presence and advocacy for affective theories can be seen in feminist theory, as well as social theory, cultural geography, and new materialism.

¹ Alfred North Whitehead, *Adventures of Ideas* (New York: The Free Press, 1967), 226.

I begin this chapter with a broadly sketched overview of affect theory aimed at providing context for the central theories operating in the field, followed by a deeper engagement with Brian Massumi's conceptualization of affect and the criticisms leveled at it. While affect is considered a general (though amorphous) concept with many differing interpretations, I focus on Massumi as he draws on process-oriented concepts through his deep philosophical engagement primarily with Deleuze but also with reference to Whitehead. I will discuss the main points of critique that the affective turn has generated and bring together relevant concepts from Whitehead's philosophy to rethink this critique.

4.1 Affect theory

In *The Affect Theory Reader*, Seigworth and Gregg describe the topic of their anthology as follows:

“Affect is born in in-between-ness and resides as accumulative beside-ness. Affect can be understood then as a gradient of bodily capacity—a supple incrementalism of ever-modulating force-relations—that rises and falls not only along various rhythms and modalities of encounter but also through the troughs and sieves of sensation and sensibility, an incrementalism that coincides with belonging to comportments of matter of virtually any and every sort.”²

Affect has no singular definition, a characteristic praised by Seigworth and Gregg. For them and many others writing about or theorizing with affect, the malleability and speculative imagination of affect theory allows for the interpretive flexibility required by an ever-changing world of diverse and adapting bodies.

In 1995, two texts were published that brought affect (in its current theoretical state) into the scholarly conversation, Eve Sedgwick and Adam Frank's “Shame in the Cybernetic Fold”

² Gregory Seigworth and Melissa Gregg, “An Inventory of Shimmers,” in *The Affect Theory Reader*, ed. Melissa Gregg and Gregory Seigworth (Duke University Press Books, 2010), 2.

and Brian Massumi's "The Autonomy of Affect." These texts also reflect an informal divide in the literature on affect. The two strains are not entirely divergent from one another and more recent scholarship explores the permeability and overlap of the two approaches. In order to briefly trace the discourse thus far, I will allow for this artificial division to persist for clarity as it is frequently referred to in the literature.

Eve Sedgwick and Adam Frank's theorization of affect is rooted in Silvan Tomkins's *Affect, Imagery, Consciousness*. The first of this four-volume set was published in 1962, though work on his affect theory began in 1955 with infant observations.³ Tomkins develops what is later referred to in the field of affective neuroscience as a "basic emotion paradigm," which puts forward a fixed set of discrete affects that are activated by internal or external stimuli. Tomkins's theory of affects, as opposed to drives like hunger or thirst, is constructed with greater freedom in terms of their satisfaction, strength, and timing. Affects adhere to all kinds of things, Sedgwick writes: "Affects can be, and are, attached to things, people, ideas, sensations, relations, activities, ambitions, institutions, and any number of other things including other affect. Thus, one can be excited by anger, disgusted by shame, or surprised by joy."⁴

Sedgwick and Frank find compelling lures in Tomkins's writing style and theory that endear them and resonate closely with their own theoretical commitments. Affect up-ends expected emotional patterns with its unpredictable attachments creating new textures that enhance contrasts and allow for more complex relations than Freudian drives. In Tomkins work, they find a psychology that is incompatible, or resistant, to the idea of a core self and lacking in

³ Eve Kosofsky Sedgwick and Adam Frank, "Shame in the Cybernetic Fold," in *Critical Inquiry*, vol. 21, n.d., 496–522, <http://www.jstor.org/stable/1343932>, 501.

⁴ Eve Kosofsky Sedgwick, *Touching Feeling: Affect, Pedagogy, Performativity* (Series Q) (Duke University Press Books, 2003), 19.

any heterosexist or homophobic rhetoric; making it truly an outlier in psychological discourse of his contemporaries.⁵

The affective approaches and models that are considered under the banner of the basic emotions paradigm have had a strong influence on how critical affect theories have been constructed. Basic emotion models include a generalized group of psychological and neuroscientific theories that propose a fixed number of basic emotions (ranging in number from six upward to fifteen, depending on the author) that are hardwired in the sub-neocortical region of the brain.⁶ These emotions are considered automatic reflexes that illicit specific behaviors, autonomic reactions, or facial responses. They differ from more complex emotions that require cognition in the higher more developed or evolved parts of the brain. The level of consciousness and cognition associated with or evoked by affects vary by author.

Whether explicitly referenced or not, William James is a necessary figure in the discussion of affect, impacting both branches of affect theory as well as the neuroscience of emotions. James's discipline-defining book, *The Principles of Psychology* published in 1890, has had a lasting impact on psychology and philosophy of mind. William James and Carl Lange, a Danish psychologist, independently developed theories of how emotion is triggered through the body; the theory now bears both their names. According to the James-Lange model of emotions, physical bodily responses to a stimulus are the cause of emotional feelings.⁷ James describes how the model works in his famous example of encountering a bear in the woods. If you encounter a bear, according the James-Lange theory, your initial response is bodily— you

⁵ Sedgwick and Frank, "Shame in the Cybernetic Fold," 7.

⁶ Ruth Leys, "The Turn to Affect: A Critique," *Critical Inquiry* 37, no. 3 (2011): 434–72, 438

⁷ William James, *The Principles of Psychology* (Harvard University press, 1983), 1065-1067.

tremble or sweat, your heart races.⁸ These bodily feelings, in turn, stimulate an emotional feeling, like fear, so you run away. Simply, it is changes in the body that excite emotional responses. For neuroscience, the James-Lange theory as it was originally formulated still garners considerable criticism.⁹

Aspects of the theory, notably the role of physiological feedback in emotional feeling, have been modernized and continue to provoke debate, especially in affective interpretations of neuroscience. The modernized version of the James-Lange theory suggests a cortical read-out component. In this model, bodily feedback and basic affective systems in the subcortical region of the brain are “read-out” into the higher cortical regions of the brain creating emotional responses. In this sense, the cognitive cortical brain “reads” the subcortical changes resulting in emotional feelings. The raw data of physiological feedback and affect are processed, or read-out, into the more “evolved” neocortex that is responsible for higher level thought, consciousness, language, and emotional feeling.¹⁰

The triune theory of the brain, developed by Paul MacLean in the 1960s and further advanced by neuro-anatomists, poses an evolutionary model of the brain necessary for these basic emotions paradigm to exist.¹¹ The triune brain theory assumes the brain can be broken down to three levels, increasing in complexity with each layering over the next in the course of human evolution. At its base, in the Basal Ganglia, resides the “reptilian” brain or instinctual

⁸ William James, “What Is an Emotion?,” *Mind* 9, no. 34 (1884): 188–205. <http://www.jstor.org/stable/2246769>, 190.

⁹ The James-Lange theory is only one component of James’s larger work and does not allow for the full nuance that he develops both in *Principles of Psychology* and his later works. This theory has been developed in a much more complex way than originally described by James, yet the name tends to refer to the group of theories that put the body before the mind.

¹⁰ Jaak Panksepp, *Affective Neuroscience: The Foundations of Human and Animal Emotions* (New York: Oxford University Press, 1998), 33.

¹¹ Kelly G. Lambert, “The Life and Career of Paul MacLean: A Journey toward Neurobiological and Social Harmony,” *Physiology & Behavior* 79 (2003): 343–49.

motor brain that regulates the body's basic functions for living, like breathing and heart rate.¹² The next layer of the brain to evolve was the mammalian or limbic brain which consists of structures like the hippocampus, amygdala, and hypothalamus. This region of the brain is considered the source of human emotion in the sense that affects are linked to physical behavior and are tied to certain autonomic reactions and value judgements, like recoiling in disgust or bursting into laughter. The last and most complex part of the brain to evolve was the neocortex or the so-called "rational" brain. These two large lobes are the site of language processing, abstract thinking, and the general character traits of human intelligence. The neocortex is flexible and plastic; learning, changing, and developing over time.

These three "levels" of the brain are considered distinct in their function, but they are not entirely discrete, with systems and structures working interdependently. Neuroscientists have made many recent determinations about brain anatomy in regard to human and animal functions, but there is no fixed map and a significant amount of research is still being conducted to literally probe what happens and where. All theories under the umbrella of the basic emotions paradigm position affective activity as occurring in the mammalian brain. Some neuroscientists have identified very specific structures in the limbic brain that are considered important, if not responsible, for specific affective responses.¹³ But most neuroscientists agree that the interconnected systems of the brain cannot be reduced to a single brain center holding sole

¹² Jaak Panksepp, *Affective Neuroscience: The Foundations of Human and Animal Emotions* (New York: Oxford University Press, 1998), 70.

¹³ Joseph LeDoux argued in his book *The Emotional Brain* (1996) that two brain circuits connecting the amygdala to other parts of the brain (the "low road" to the thalamus and the "high road" to the cortex) were involved in processing fear based on experiments with fear conditioning in rats. Though in more recent interviews he clarifies that while the amygdala can contribute to fear, it is not the "seat" of fear. Fear can exist without activating the amygdala and activation of the amygdala does not result in fear.

Jacek Debiec and Joseph LeDoux, "Fear and the Brain," *Social Research* 71, no. 4 (2004): 807–18.

Prashant Nair and Joseph LeDoux, "QnAs with Joseph LeDoux," *Proceedings of the National Academy of Sciences of the United States of America* 111, no. 8 (2014): 2860–61.

responsibility for a brain function or affective response; the plasticity of brain is more adaptable than fixed in this sense.

The basic emotions paradigm is popular in much of the modern neuroscience about affect and emotions. Jaak Pankseep is an advocate for the affective neuroscience point of view, with his research based on the “instinctual” primary-process affects and how emotional feeling originates in the brain.¹⁴ Joseph LeDoux and Antonio Damasio follow the cognitive neuroscience perspective, focusing on secondary- and tertiary-brain processes, which are integrated and regulated through learned and cognitive processes respectively and assume a cortical-readout component. Pankseep’s primary-processes are based on a hypothesis that assumes deeper brain stem origins of affect that do not require cortical activity. While the cognitive neuroscience perspective aligns more with a modernized reading of the James-Lange theory. The affective neuroscience viewpoint is consistent with other alternative theories supported by James. Pankseep and Biven point out, that despite their differences, both interpretations of the neuroscience of emotions are still Jamesian:

“To this day there is no solid line of experimental evidence that supports the traditional version of the James-Lange theory. However, the data supports William James’s alternative conjecture for primary-process emotions -- that instinctual actions have feeling components -- while his traditional cortical read-out theory can help us understand how the brain understands its emotions.”¹⁵

The field of critical affect theory and new materialism has shown great interest in utilizing the data and findings produced by LeDoux and Damasio, while reference to Pankseep’s research on primary-process affect is less prevalent. LeDoux and Damasio have been heavily

¹⁴ Jaak Pankseep, “What Is an Emotional Feeling? Lessons about Affective Origins from Cross-Species Neuroscience,” *Motivation and Emotion* 36, no. 1 (2012): 4–15, 7.

¹⁵ Jaak Pankseep and Lucy Biven, *The Archaeology of Mind: Neuroevolutionary Origins of Human Emotions* (W.W. Norton & Company, 2012), 64.

influenced by the James-Lange theory and both maintain updated versions of cortical read-out theory that perpetuates the primacy of the physical body, which is a commitment reflected in affect theory, new materialism, and embodiment studies. Additionally, LeDoux and Damasio have both published “crossover” works embraced by cultural theory audiences as well as more accessible popular science books for the general public.¹⁶

Unlike Tomkins and others considered part of the basic emotion paradigm whose theories focuses on a psychology of discrete affects (i.e. shame, interest, surprise), Brian Massumi has become a figurehead for a branch of affect inspired by the philosophies of Spinoza and Deleuze. This configuration of affect theory does not individuate but imagines affect as a kind of intensity. In the preface to his translation of Deleuze and Guattari’s *A Thousand Plateaus: Capitalism and Schizophrenia*, Brian Massumi provides a glossary definition that outlines the connection to affect in Spinoza’s *Ethics*:

“AFFECT/AFFECTION. c to the passage from one experiential state of the body to another and implying an augmentation or diminution in that body’s capacity to act. *L’affection* (Spinoza’s *affectio*) is each such state considered as an encounter between the affected body and a second, affecting, body (with body taken in its broadest possible sense to include “mental” or ideal bodies).”¹⁷

This Spinoza-Deleuzian interpretation of affect associates affect with bodily changes, akin the James-Lange theory outlined above and the associated modern cognitive neuroscience approaches supported by LeDoux and Damasio.

Massumi’s *Parables for the Virtual: Movement, Affect, Sensation*, published in 2002 has since become a principle text for current meditations on Deleuze, Bergson, Leibniz, and Spinoza

¹⁶ Constantina Papoulias and Felicity Callard, “Biology’s Gift: Interrogating the Turn to Affect,” *Body and Society* 16, no. 1 (2010): 29–56, 52.

¹⁷ Brian Massumi, “Notes on the Translation and Acknowledgments,” in *A Thousand Plateaus: Capitalism and Schizophrenia* (The University of Minnesota Press, 1987), xvi–xxx, xvi.

to illustrate the abilities and capacities of the body to move, sense, affect and to be affected in cultural theory. This posthumanist model is not limited to human bodies, but there is a strong focus on the demarcation of consciousness and conscious processes in order to describe and situate affect as existing outside of consciousness. Massumi does not draw from a specific psychological model as Sedgwick and Frank, but he does cite numerous neuroscience studies and scientific papers to support his arguments.

For Massumi, affect is outside of signification and unstructured in nature. He poses this in stark contrast to emotion. “An emotion,” he writes, “is a subjective content, the sociolinguistic fixing of the quality of an experience which is from that point onward defined as personal. Emotion is qualified intensity...”¹⁸ The unqualified affect does not have a vocabulary that allows for clear discussion of the asignifying character that makes this concept unique. Massumi emphasizes the necessity of theorizing affect and emotion differently, noting that the lack of this specified language creates a danger for “psychological categories” to sneak back in.¹⁹ However, he does not develop significant differentiation between his affective and emotional language to prevent this confusion.

Despite the value given to the pre-social intensity of affect, Massumi’s actual application of affect does not provide a theoretical structure to maintain its separation from sneaky psychologizing, but immediately flips back to the social. In one example, he uses affect and virtuality to explain the hold that Ronald Reagan had over the U.S; describing the means by which Reagan promoted himself as affective rather than emotional.²⁰ Massumi uses an example from Oliver Sacks’s popular science bestseller *The Man Who Mistook His Wife for a Hat* in

¹⁸ Brian Massumi, *Parables for the Virtual* (London: Duke University Press, 2002), 28.

¹⁹ *Ibid.*, 27.

²⁰ *Ibid.*, 39-42.

which Sacks recounts two sets of patients with different cognitive problems watching one of Reagan's speeches on television. One group was experiencing global aphasia, a condition that made them unable to understand verbal language but were adept at understanding extraverbal cues like inflection and body language. They interpreted Reagan's body language as "hilariously inept...a recycled bad actor."²¹ The other group were experiencing the opposite, tonal agnosia, in which the expression and extraverbal cues are not processed but language and grammar are understood. This group found Reagan incoherent, his language-use illogical, and questioned whether Reagan himself suffered a brain impairment.

Despite the linguistic incoherence on one hand and inept jerky physicality on the other, Massumi argues that it is through affect that Reagan was able to secure majority support. He cites Reagan's resonant voice as "the embodiment of an asignifying intensity doubling his every actual move and phrase..." and his air of confidence as "the apotheosis of affective capture."²² Yet nothing about being "affected" by a politician's voice, stance, presence, or charisma is outside of symbolic meaning, in fact it is completely dependent upon it. Massumi argues that the vague Hollywood performativity without coherent content was the virtuality of Reagan that allowed his followers to see what they wanted to see, fixing him as a leader who they assumed shared their ideology based on his performance of confidence alone. How affect works outside of interpretation, culture, and social meaning is difficult to find in this example.

The intensity of affect is only one of two modes in the model of perception outlined by Massumi. Through the analysis of a study in which children were presented three versions of an identical film about a snowman (a silent film, a film with factual narration, and a film with emotional narration), Massumi suggests that perception is divided into two separate, but parallel,

²¹ Ibid., 40.

²² Ibid., 41-42.

embodied systems: qualification and intensity.²³ Qualification assigns meaning and context to what is perceived while intensity, which is nonconscious, corresponds to “strength and duration.”²⁴ These two modes are related through resonance or interference. Illustrated through the examples of the narrated snowman films, the version with factual narration was qualified in a dull factual manner that “dampened” its intensity, while the emotionally narrated version qualified greater emotional capacity thereby resonating in a kind of feedback with the affective intensity mode. In a given event, both modes of perception are engaged. Massumi writes: “For clarity, it might be best to give different names to the halves of the event. In this case, *suspense* could be distinguished from and interlinked with *expectation* as superlinear and linear dimensions of the same image-event, which is at the same time an expression-event.”²⁵

In *Parables for the Virtual*, Massumi refers to a study conducted by Benjamin Libet, an American neuroscientist, regarding what he calls, ‘the missing half second’; this is one of several studies referenced by Massumi that has drawn significant critique. In the version of the experiment discussed in the text, Libet uses electroencephalograms (EEG) to monitor the brain waves of healthy participants. He recorded the brain activity of his subjects and asked them to move their wrist at a moment of their choosing. The subjects were shown an animated clock and ask to remember the moment they made the conscious choice to move their wrist, then record the position of the clock. The EEG showed an increase of brain activity, what Libet called Readiness Potential (RP), prior to the moment that the subjects recorded making a conscious decision to move their wrist. Libet proposed that the RP indicated that the brain was preparing to make the physical movement of the wrist before the conscious mind was aware of its decision.²⁶ Libet

²³ Ibid., 24.

²⁴ Ibid., 24.

²⁵ Ibid., 26.

²⁶ Ibid., 29-31.

writes, “The voluntary process [of moving one’s wrist] is therefore initiated unconsciously, some 400 msec before the subject becomes aware of her will or intention to perform the act.”²⁷

Further, Libet suggests that what is commonly considered to be ‘conscious will’ is actually ‘conscious veto’; that the conscious decision of the mind is only to follow through with the voluntary action initiated by the unconscious or to veto it and end it before the voluntary action occurs.²⁸ After the publication of these later studies, many debates formed over the methodology, interpretation, and implications of the experiment on consciousness and ideas of free will. Rather than engage with the specific issues surrounding Libet’s research, I am focused on Massumi’s reading of the study and how he finds it supportive to his larger arguments.

Massumi sees the missing half-second as a proof that higher functions (decisions, in this case) are autonomic and without conscious intervention. This provides a model to insert affect into the space prior to consciousness or linguistic processing, where affect is then thoroughly embodied and full of possibility. Affect or intensity, “is *incipience*, incipient action and expression. Intensity is not only incipience. It is also the beginning of a selection: the incipience of mutually exclusive pathways of action and expression, all but one of which will be inhibited, prevented from actualizing themselves completely.”²⁹ When introduced a half-second too late, “[w]ill and consciousness are *subtractive*.”³⁰ Massumi uses Libet’s study to position the knowing potentiality of the body before the thinking brain, but even Libet was concerned about the implication of drawing such conclusions from his work. As William Banks and Susan Pockett

²⁷ Benjamin Libet, *Mind Time: The Temporal Factor in Consciousness* (Cambridge: Harvard University Press, 2004), 124.

²⁸ *Ibid.*, 138.

²⁹ Massumi, *Parables for the Virtual*, 30.

³⁰ *Ibid.*, 29

describe, Libet uses the “conscious veto” specifically to rescue the idea of free will and refrained from concluding that humans are not free actors.³¹

The primacy of the body in this way, activated prior to consciousness and mind, makes many critics uncomfortable and the implications inspire considerable debate. Yet, it is not a stretch to read Libet and this view on the body directly back to William James. Both branches of affect theory, the model supported by Sedgwick that incorporates factors from the basic emotion paradigm and Massumi’s Deleuzian model, depend upon a different readings of James. As discussed previously, the James-Lange theory of emotions and its continued development in neuropsychology has impacted modern neuroscience significantly, even if only as a point of contention. Massumi also pulls from James, as his theory of emotion places the body before cognized emotion and supports his primacy of the body. Clara Fischer argues against this interpretation of James in her article “Feminist Philosophy, Pragmatism, and the “Turn to Affect”: A Genealogical Critique.” Fischer points out that James is not a dualistic thinker and that he is not placing a hard cut between body and mind, but is often read in this reductive light. She writes:

“Much was made, even during James’s lifetime, of the shortcomings of such an articulation of emotions, which appeared to eradicate all cognitive elements and to valorize the physical... Thus, James was radical in his securing of a place for the body in affective thought, perhaps so radical that he overstated his case and obscured his own, more nuanced descriptions of the coterminality of body, mind, and emotion.”³²

³¹ William P. Banks and Susan Pockett, “Benjamin Libet’s Work on the Neuroscience of Free Will,” in *The Blackwell Companion to Consciousness*, ed. Max Velmans and Susan Schneider (Malden: Blackwell Publishing, 2007), 657–70, <https://doi.org/10.1002/9780470751466.ch52>.

³² Clara Fischer, “Feminist Philosophy, Pragmatism, and the ‘Turn to Affect’: A Genealogical Critique,” *Hypatia* 31, no. 4 (2016): 810–26, <https://doi.org/10.1111/hypa.12296>, 819.

In Fischer's reading, James's work intends to keep the body in the affective landscape, preventing emotion and affect from being thought of a wholly mental phenomenon, but in doing so, exaggerates the primacy of the body.

Massumi's process influences in his affect theory outlined in *Parables for the Virtual* largely references Deleuze, however, Whitehead does make appearances. Since the original publication of "The Autonomy of Affect" Massumi's engagement with Whitehead and James has increased through the development of his philosophy of event outlined in the 2007 book, *Semblance and Event: Activist Philosophy and the Occurrent Arts* and his 2014 book, *What Animals Teach Us about Politics*.³³ The process elements of Massumi's work are certainly influenced by Whitehead, sometimes directly, but also in the Whiteheadian influence that can be read through Deleuze. Whitehead has more references in the footnotes of *Parables for the Virtual* than in the text itself. In most instances, Whitehead is used to expand upon Deleuze or James; Whitehead is another supporting figure arguing for a radical empiricism and developing on Jamesian concepts. In one footnote, Massumi references Whitehead's concept of "feeling" and perception to explain a quote from Deleuze ("The world does not exist outside of its perceptions"), but he does not link this concept to his development of affect theory.³⁴ James appears more frequently in the text, especially in reference to his radical empiricism and processual thinking about experience. James's concept of the "fringe" appears in Massumi's text, regarding relations but not explicitly related to consciousness. While some direct references to

³³ Brian Massumi, "The Autonomy of Affect Brian Massumi Cultural Critique, No. 31, The Politics of Systems and Environments, Part II. (Autumn, 1995), Pp. 83-109.," *Politics*, no. 31 (1995): 83–109, <http://www.ncbi.nlm.nih.gov/pubmed/21997878>.

Brian Massumi, *Semblance and Event: Activist Philosophy and the Occurrent Arts* (London: The MIT Press, 2011).
 Brian Massumi, *What Animals Teach Us about Politics* (Duke University Press, 2014).

³⁴ Gilles Deleuze, *The Fold: Leibniz and the Baroque*. Trans. Tom Conley (Minneapolis: University of Minnesota Press, 1993), quoted in Massumi, *Parables for the Virtual*, 271.

Whitehead and James can be found in *Parables for the Virtual*, most of the process concepts in the text are arrived at via Deleuze.

4.2 Critique of affect theory

As with any shift of thinking, the turn to affect has not been without criticism. Several thoughtful critiques and published exchanges have outlined serious questions about the potentials of affect theory, its politics, and what gets lost when the focus is on affect. In this section, I will outline the significant points of criticism that apply to the Deleuze-informed affect theory promoted by Massumi and others.³⁵

The turn toward affect marks a turn away from post-structuralism and what is referred to as the linguistic turn. The qualitative analysis of discourse focused on representation and signification is left behind for the exploration of the excess intensity, outside of consciousness, and outside of social construction.³⁶ Massumi outlines his work in affect theory as a move which embraces process and movement and steps away from what he characterizes as existing static in cultural theory approaches that limit and fix subjects:

“The kinds of coding, griddings, and positionings with which cultural theory has been preoccupied are no exception to the dynamic unity of feedback and feed-forward, or double becoming... Ideas about cultural or social construction have dead-ended because they have insisted on bracketing the *nature* of the process.”³⁷

Clare Hemmings’s 2005 article, “Invoking Affect: Cultural Theory and the Ontological Turn,” takes issue with Massumi’s characterizations of post-structuralism as both overblown and

³⁵ See Nigel Thrift, Patricia Ticineto Clough, Derek McCormack, William Connolly, and others.

³⁶ Margaret Wetherell, *Affect and Emotion: A New Social Science Understanding* (SAGE, 2012), 54-55.

³⁷ Massumi, *Parables for the Virtual*, 11-12.

resisting engagement with actual texts and authors. Hemmings is left to wonder what to do with the ill-defined affect that cannot be critically interpreted or read, but only felt and imagined.³⁸

Margaret Wetherell in *Affect and Emotion: A New Social Science Understanding*, is similarly critical of an approach that is hostile to meaning-making and dismissive of discourse, which is presented by Massumi to be negative and subtractive at its worst and deadening at its best. Wetherell sees the value in this critical perspective and concedes that he points to real omissions in the capability of post-structural discourse theory to account for dynamics, but doesn't find the full scale substitution of affect for discourse sufficient.³⁹ Instead, Wetherell advocates for a middle way that accounts for the vibrant and dynamic while also attending to "big discourse." The affect Wetherell advocates is certainly not the one described by Massumi.

In a 2014 interview, when asked about the future of affect theory, Wetherell responded:

"I think versions of 'affect theory' that posit affect as a pre-personal extra-discursive force hitting and shaping bodies prior to sense making are simply unsustainable. It is so obvious that semiosis and affect are inextricably intertwined... It has been seriously unhelpful to posit a generic category of autonomous affect (applied to relations between all bodies human and nonhuman). Human affect and emotion are distinctive because of their immediate entanglement with very particular human capacities for making meaning."⁴⁰

While affect theory moves to distance itself from post-structuralism, it also works to confront and rectify the lingering anti-biologism in cultural theory. As opposed to distancing itself from biology and sciences for affirming uncritical essentialisms, affect theory (and feminist new materialism more generally) embraces the sciences as part of the interdisciplinary project.

³⁸ Clare Hemmings, "Invoking Affect: Cultural Theory and the Ontological Turn," *Cultural Studies* 19, no. 5 (2005): 548–67, <https://doi.org/10.1080/09502380500365473>, 563.

³⁹ Wetherell, *Affect and Emotion: A New Social Science Understanding*, 56.

⁴⁰ Margaret Wetherell and David Beer, "The Future of Affect Theory: An Interview with Margaret Wetherell," *Theory, Culture & Society*, 2014, <https://www.theoryculturesociety.org/the-future-of-affect-theory-an-interview-with-margaret-wetherall/>.

Criticisms of this engagement range from methodological issues, perceived misreadings, and cherry-picking. In “Biology’s Gift: Interrogating the Turn to Affect,” Constantina Paloulas and Felicity Callard present a thorough critique of the ways in which affect theory appropriates scientific findings to support argumentation and seek out verification and broader legitimacy. The authors point to a selective list of currently publishing neuroscientists heavily cited in affect theory, namely the aforementioned Antonio Damasio and Joseph LeDoux.⁴¹ In a response to a similar point of critique made by Ruth Leys on the selective representation of scientists in affect theory, William Connolly defended his preference for engaging with specific scientists who are interested in working with cultural theorists in a capacity that contributes positively to both disciplines and hopes for more open interfaces.⁴² The honest defense and call for cross-disciplinary collaboration are admirable but does not refute the criticism. Interrogating the references to the scientific studies found in affect theory, Paloulas and Callard point to clear instances where the terminology and context of the studies are misread and misappropriated through creative interpretation by affect theorists and noting that there is no “transdisciplinary metalanguage” to provide a framework for importing concepts and retaining the systems and context that make them meaningful.⁴³

Massumi, in particular, is called out by Paloulas and Callard for what he advocates as “shamelessly poaching from science...to borrow from science in order to make a difference in the humanities.”⁴⁴ Massumi wants to position the humanities in constant negotiation with the well-funded and institutionally secure “sciences,” through conceptual piracy and a rethinking of empiricism, knowing full well that the “sciences” are rarely taking part in any exchange. Rather

⁴¹ Papoulas and Callard, “Biology’s Gift: Interrogating the Turn to Affect,” 39-41.

⁴² William E Connolly, “Affect and Intention : A Reply to Ruth Leys” 37, no. 4 (2011): 799–805, 792.

⁴³ Papoulas and Callard, “Biology’s Gift: Interrogating the Turn to Affect,” 49.

⁴⁴ Massumi, *Parables for the Virtual*, 20-21.

than interdisciplinary exchange, Paloulias and Callard, see these “thefts from the sciences” as more indicative of unresolved fallout from the “science wars” that leave cultural theorists looking for truth via scientific legitimation, noting where Massumi refers to the experimental verification that proves the accuracy of his theoretical tools. Ruth Leys goes further to characterize the exchange between affect theory and the sciences as simply parsing studies for scientifically verified evidences to support their thought.⁴⁵

As Massumi’s interpretation of affect is not dependent on the Tomkins psychological model (or other basic emotional models) that posit discrete affective categories or brain systems, Massumi is uninterested in the taxonomy of specific affects and affective states, and instead views affect as an asignifying intensity. Massumi discusses the challenge of describing affect in a world of emotion. Lacking a vocabulary for asignifying affect, the language of psychology and the meanings associated with it creep back in.⁴⁶ Drawing attention to this difficulty is certainly easier than avoiding its pitfalls as the use of emotional terminology prevents a clear differentiation or theoretical distinction between affect and emotions, for Leys and other critics.⁴⁷ Yet, the scientific research cited by Massumi and others in this vein of affect theory is conducted in direct association with the basic emotion paradigm or theoretically downstream from these same neuroscientific tenets with roots in Jamesian psychology. Massumi repeatedly notes the importance of theoretically differentiating affect and emotion, but he does not produce a language that does not inadvertently psychologize affect into emotional terminology. This slippage has serious impacts, as it imperils the very asignifying pre-conscious characteristics that

⁴⁵ Leys, “The Turn to Affect: A Critique,” 467.

⁴⁶ *Ibid.*, 27.

⁴⁷ See also, Monica Greco and Paul Stenner, eds., *Emotions: A Social Science Reader* (London: Routledge, 2008).

help differentiate this version of affect; without better language to describe it, affect reverts back to emotion and signification under analysis.

Affect theory prioritizes the body as an open site impacted by affective potentials. For Massumi, the body is affected, or “impinged upon” by affect, absorbing the unmediated potentials of the affective intensity that is then qualified by the mind through “higher functions.”⁴⁸ To illustrate this point, Massumi cites the study conducted by Libet and points to the missing half second discussed earlier, which poses bodily reactions as autonomic and the conscious mind as “late” to decision-making. In Ruth Ley’s critique of affect, she summarizes: “In short, [Massumi] takes Libet’s experiment to prove that the material processes of the body-brain generate our thoughts and that conscious thought or intentions arrives too late to do anything but supervise the results.”⁴⁹

Leys argues that, despite their important differences, the two branches of affect theory lead back to the basic emotion paradigm and an underlying anti-intentionalism that presents affect as outside of, or before, signification.

“What the new affect theorists and the neuroscientists share is a commitment to the idea that there is a gap between the subject’s affects and its cognition or appraisal of the affective situation or object, such that cognition or thinking comes “too late” for reasons, beliefs, intentions, and meaning to play a role in action and behavior usually accorded to them. The result is that action and behavior are held to be determined by affective disposition that are independent of consciousness and the mind’s control.”⁵⁰

The primacy of the body and lateness of mind provokes Leys criticism that Massumi is reverting to a sneaky Cartesian mind/body dichotomy, despite positioning his work as anti-dualistic and informed by Spinozian monism. Through the division of the affective knowledge of the body and

⁴⁸ Massumi, *Parables for the Virtual*, 29-31.

⁴⁹ Leys, “The Turn to Affect: A Critique,” 454.

⁵⁰ *Ibid.*, 443.

a disembodied consciousness “he commits himself to the (essentially metaphysical) idea that for something to be “elicited” or intended it must be “fully” conscious and that, since not all experience can be described in those terms (but can *any* “experience” be so described?), the only alternative is to regard it as corporal or material.”⁵¹

In Deborah Thien’s 2005 article, “Affect or beyond feeling? A consideration of affect and emotion in geography,” Thien argues that Massumi and others who follow his conceptualization of affect privilege the body and affect at the expense of the personal and emotional, in a move at odds with feminist scholarship.⁵² Thien writes:

“The jettisoning of the term ‘emotion’ in favour of the term ‘affect’ seems compelled by an underlying revisiting, if in the more theoretically sophisticated register, of the binary trope of emotion as negatively positioned in opposition to reason, as objectionably soft and implicitly feminized... re-draw[ing] yet again not only the demarcation between masculinist reason and feminized emotion, but also the false distinction between ‘personal’ and ‘political’ which feminist scholars have extensively critiqued.”⁵³

As opposed to the Cartesian dualism in which mind is privileged as the site of masculine reason, affect theory retains a dualism recasting the body as privileged as the autonomic respondent to unmediated pre-personal, pre-emotional, pre-political affect.

Leys credits the turn to affect, embodiment, and the increased engagement with science and biology as a response to the earlier social constructivist trends in cultural theory that avoided biological sciences in an attempt to sidestep embedded essentialism and distanced itself from

⁵¹ Ibid., 457.

⁵² Thien specifically cites the work of Nigel Thrift and Derek McCormack as perpetuating a gendered version of the mind-body split that feminizes emotion and poses affect as outside the personal. She writes: “Thrift indicates his desire to separate his discussion of affect from anything perceived as ‘nice and cuddly’: ‘one all too common interpretation of what adding affect will contribute’ (Thrift 2004, 58). The effort to avoid ‘touch-feely’ versions of emotion and any ‘absurd’, ‘silly’ or ‘wrongheaded’ ideas (Thrift 2004) perhaps unsurprising results in a concentration on the trans-human and the virtual (McCormack 2003; Thrift 2004).” Deborah Thien, “After or beyond Feeling ? A Consideration in Geography of Affect and Emotion” 37, no. 4 (2014): 450–454, 451.

⁵³ Thien, “Affect or Beyond Feeling?” 452.

thinking about the body. The affect theorists, Ley writes, “seek to recast biology in dynamic, energetic, nondeterministic terms that emphasize its unpredictable and potentially emancipatory qualities.”⁵⁴ In doing so, they rely on what Leys calls the “dissenting philosophers of nature,” like Alfred North Whitehead and William James, but with particular attention to the works of Gilles Deleuze and Felix Guattari. I argue that a greater investment in Whitehead’s works, to think alongside Whitehead’s commitments, offers insights that can constructively improve the approaches to affect. Thinking about Whitehead alongside affect theory is not an attempt to develop an alternative for affect theory by substituting Whiteheadian concepts for those in current rotation. Rather, by using the constraints and commitments that Whitehead advocates we can shift the focus to explore these concepts and the critiques they have garnered. The benefit of such an exploration is not to be destructive or present a fixed alternative, per se, but to engage with the omissions and look to possibilities for revising these modes of thought.

4.3 Feeling

A 2016 publication in the journal *Theory & Psychology*, “Affect—or feeling (after Leys),” takes founding steps to describe the value of Whitehead’s theory of feeling to the broader discourse on affect in light of the criticism outlined by Ruth Leys. Steven Shaviro, in his book *Without Criteria: Kant, Whitehead, Deleuze, and Aesthetics*, also draws an connection between Massumi’s affect and Whitehead’s feeling.⁵⁵ The version of “feeling” put forward by Cromby and Willis extends Whitehead’s philosophy to include a continued but divergent line of thinking explored by Susanne K. Langer, a student of Whitehead’s and a remarkable philosopher in her

⁵⁴ Leys, “The Turn to Affect: A Critique,” 441.

⁵⁵ Steven Shaviro, *Without Criteria: Kant, Whitehead, Deleuze, and Aesthetics* (Cambridge: The MIT Press, 2009), 47.

own right.⁵⁶ For the purposes of this text, I will limit the discussion to Whitehead and his concepts.

Feeling is an essential component to Whitehead's philosophy. In this analysis of Whitehead's work on feeling, it is necessary to delve into many additional concepts as they layer over one another. Further, the use of the word feeling is qualified as a "mere technical term" and it, as well as other terms he uses throughout his work, require at least the partial abandonment of previous definitions and rethinking of the concept on his terms.⁵⁷ As with Massumi, Whitehead does not successfully reserve psychological language for psychological subject matter.

Whitehead sees conscious experience as a very small percentage of experience, but wants to retain some of the connotations implied by the word choice. Elizabeth Kraus explains how Whitehead intends his terms to function:

"Take for example the term "feeling" central to [*Process and Reality*]. In ordinary language it can mean an emotional response, an aesthetic sensitivity, or a physical contact with an object. Whitehead intends his technical use of the term to connote all three meanings."⁵⁸

In order to explore what feeling means in Whitehead's system, I will sketch a rough skeleton of the relevant components.⁵⁹

⁵⁶ John Cromby and Martin E.H. Willis, "Affect—or Feeling (after Leys)," *Theory and Psychology* 26, no. 4 (2016): 476–95, <https://doi.org/10.1177/0959354316651344>.

Susanne Langer was a doctoral student of Whitehead at Harvard and one of the first women to have a career as an American philosopher, though she is not widely read. Her work focuses primarily on aesthetics and consciousness and while she is best known for her book *Philosophy in a New Key* on art and symbolism, her 3-volume opus *Mind: An Essay on Human Feeling* is an examination of feeling and aesthetics grounded in philosophy and science. *Mind* is an intimidating work, but it is also – in my humble opinion – an example of how to bring together science and philosophy in the most rigorous, respectful, and erudite way. That said, some of her premises, namely regarding animals and language, are not in line with the basic outline of feminist new materialism and the enormity of her project is outside the scope of this work.

⁵⁷ Alfred North Whitehead, *Process and Reality: An Essay in Cosmology*, ed. David Ray Griffin and Donald W Sherburne (New York: The Free Press, 1978), 164.

⁵⁸ Elizabeth M. Kraus, *The Metaphysics of Experience: A Companion to Whitehead's Process and Reality*, 2nd ed. (New York: Fordham University Press, 1998), 4.

⁵⁹ A larger more detailed review of Whitehead's philosophy can be found in Chapter 2.

In *Process and Reality*, Whitehead writes: “The philosophy of organism aspires to construct a critique of pure feeling, in the philosophical position in which Kant put his Critique of Pure Reason.”⁶⁰ In this critique of feeling, it is important to reiterate that the majority of *Process and Reality* and his metaphysics comprise a cosmological system and are not a direct description of human experience. The system laid forth depends upon the atomistic unit of the actual entity (also referred to as the actual occasion) which is not a physical material entity but a moment of experience.⁶¹ Experience for Whitehead is not limited to human conscious experience, but experience as it extends from animals to quantum energy.⁶² Thinking outside of both materiality and human experience in this context is a difficult thought experiment, and while he does apply his thinking to human examples at some points in *Process and Reality*, the scope is of a broader scale where human experience is not the center point. Frequently, it is necessary to reflect on his philosophy in more creative ways than traditionally undertaken in philosophy, as Isabelle Stengers calls “thinking with Whitehead;” but equally necessary to keep in mind the purpose which it was intended.⁶³

For Whitehead, the actual entity is the basic unit of the universe. He writes:

“There is no going behind actual entities to find anything more real. They differ among themselves: God is an actual entity, and so is the most trivial puff of existence in far-off empty space. But, though there are gradations of importance, and diversities of function,

⁶⁰ Ibid., 113.

As discussed in previous chapters, organism is not limited to the biological definition. Whitehead does not maintain the distinction between organic and inorganic and dismisses it as a false bifurcation. In *Science and the Modern World*, he writes: “Biology is the study of the larger organisms; whereas physics is the study of the smaller organisms...The organisms of biology include as ingredients the smaller organisms of physics” (129).

⁶¹ For the purpose of this discussion, I accept actual entity and actual occasion as synonymous. However, while all actual occasions are actual entities not all actual entities are actual occasions. For Whitehead, God is an actual entity but not an actual occasion. God is not a theistic or deistic figure in Whitehead’s philosophy. That said, there is a group of Whiteheadian thinkers that have developed a theological reading of Whitehead’s work under the name of process theology largely pioneered by Charles Hartshorne and John Cobb, Jr. This line of process thought and its impact on process philosophy is discussed in greater depth in Chapter 2.

⁶² Panexperientialism, panpsychism, and a full discussion of agency and experience per Whitehead’s system and feminist new materialism can be found in Chapter 2 and 3.

⁶³ Isabelle Stengers, *Thinking with Whitehead: A Free and Wild Creation of Concepts*, trans. Michael Chase (Harvard University Press, 2011).

yet in the principles which actuality exemplifies all are on the same level. The final facts are, all alike, actual entities; and these actual entities are drops of experience, complex and interdependent.”⁶⁴

The actual entity is an act of experience and is a feeling entity.⁶⁵ An actual entity is a unit of process and becoming. The actual entity becomes through the felt data of other actual entities. The actual entity processes the feeling of data or prehensions and appropriates some elements of said feeling into its own subjective constitution.⁶⁶ Prehension is a specialized term Whitehead utilizes for his philosophy of organism. The actual entity has some similarity to Leibniz’s monads, which Leibniz describes as having perception and apperception as the methods by which monads are aware of one another. Similarly, Whitehead takes the word “apprehension,” meaning ‘grasp,’ and removes the prefix. In altering an existing word, Whitehead wants to both draw on the connotation but also to remove any implication from the existing meaning that prehension is linked to conscious perception.

In this system, the term prehension is defined as “the vehicle by which one actual entity become objectified in another...they are ‘vectors’; for they feel what is *there* and transform it into what is *here*.”⁶⁷ An actual entity “prehends” data from other actual entities (see Figure 4.1). The prehending entity feels the other entities, taking the data from others over *there*, and constituting its own subjecthood through the process. Prehensions can be positive or negative. A feeling is a positive prehension when what is felt is incorporated into the actual entity. Where a

⁶⁴ Whitehead, *Process and Reality: An Essay in Cosmology*, 18.

⁶⁵ An actual entity is not a thing. Things, like lamps, are a nexūs or a “society” of molecular actual occasions. There are also structured and corpuscular societies and enduring entities and objects. Personally ordered societies are the group of societies that would include human beings. The distinctions between nexūs and society and how they overlap and distinguish themselves is complex and outside the scope of this chapter. I only intend to emphasize that actual entities are not things, but all things are constructions of actual entities, according to Whitehead.

⁶⁶ Donald W Sherburne, *A Key to Whitehead’s Process and Reality* (Chicago: University of Chicago Press, 1966), 11.

⁶⁷ Whitehead, *Process and Reality: An Essay in Cosmology*, 133.

positive prehension is the inclusion into the actual entity, a negative prehension is the exclusion from the process of becoming in an actual entity.

The prehension has three components: “(a) the ‘subject’ which is prehending, namely the actual entity in which that prehension is a concrete element; (b) the ‘datum’ which is prehended; (c) the ‘subjective form’ which is *how* that subject prehends that datum.”⁶⁸ This process of prehension is compounded by feelings of the other actual entities being felt and prehended. Further, previous existences of actual entities and their prehensions become data for the next novel iterations of actual entities. Whitehead sees the subjective experience emerging from the objective world.⁶⁹

The actual entity exists through its experience in a process called concrescence. In a biological sense, concrescence is a convergence or fusion of individual parts. For Whitehead, concrescence is the growing together of different feelings through prehensions that terminates upon its satisfaction, completing the actual occasion. The satisfaction signifies the unification of feeling and creates its “determinate bond with every item in the universe, [those] bond[s] being either a positive or negative prehension.”⁷⁰ It is through the process of concrescence, which *is* the actual entity, that datum is prehended, internalized, and achieves its satisfaction (the unification of the many into the novel one), and then perishes to become data carried forward through prehensions to the next instances of experience, i.e. actual entities. Steven Shaviro equates the perishing of concrescence with Massumi’s configuration of affect at the moment of becoming “captured” and personalized as emotion.⁷¹ For Whitehead, actual entities are “perpetually

⁶⁸ Ibid., 23.

⁶⁹ Ibid., xiii.

⁷⁰ Ibid., 40.

⁷¹ Steven Shaviro, *Without Criteria: Kant, Whitehead, Deleuze, and Aesthetics* (Cambridge: The MIT Press, 2009), 62

perishing” as subjects; through concrescence they achieve their subjective immediacy and then perish. However, they maintains an “objective immortality” as data for future actual occasions.⁷²

Felt data becomes integrated into the creation of the subject, whereby a feeling is how the data is passed into the subjectivity of an actual entity.⁷³ That is not to equate all feeling experiences as identical, however, as the subjective form determines how a subject prehends the feeling, taking into account what data has been objectified. Shaviro argues that is through this theory of feeling and subjective forms that Whitehead creates a model that where experience can be viewed as primarily affective instead of primarily cognitive.⁷⁴

4.4 Perception & symbolism

Prehension is the way that all data is felt by an actual entity. There are many types or species of prehensions (feelings, positive prehensions, and negative prehensions are discussed in the previous section). Perception is another type of prehension. Whitehead’s theory of perception is broken down into two modes, causal efficacy and presentational immediacy. Causal efficacy is considered the more primitive of the two modes, which provides the vague conformational data that situates one in relational to the past toward the future. As Whitehead describes,

“[Causal efficacy] produces percepta which are vague, not to be controlled, heavy with emotion: it produces the sense of derivation from an immediate past, and of passage to an immediate future; a sense of emotional feeling, belonging to oneself in the past, passing into oneself in the present toward oneself in the future; a sense of influx of influence from other vaguer presences in the past, localized and yet evading local definition, such influence modifying, enhancing, inhibiting, diverting, the stream of feeling which we are receiving, unifying, enjoying, and transmitting. This is our general sense of existence, as one item among others, in an efficacious actual world.”⁷⁵

⁷² Whitehead, *Process and Reality: An Essay in Cosmology*, 29.

⁷³ Whitehead, *Process and Reality: An Essay in Cosmology*, 40.

⁷⁴ Shaviro, *Without Criteria: Kant, Whitehead, Deleuze, and Aesthetics*, 57.

⁷⁵ Whitehead, *Process and Reality: An Essay in Cosmology*, 178.

This mode of perception provides the causal through-line in experience through time.⁷⁶

Perception in the mode of causal efficacy is applicable “in germ” to all organisms, while the more sophisticated mode of perception, presentational immediacy, belongs to higher-grade organisms. Presentational immediacy is the rich and specifying sense-data (like color, texture, and sounds) of experience perceived through the body that clarifies and brings the data of causal efficacy into “vivid distinctness.”⁷⁷ The “immediacy” of this mode of perception is particularly important, as this mode perceives the present duration and does not account for the past or future: “[i]t thereby defines a cross-section of the universe: but does not itself define on which side lies the past, and on which side the future.”⁷⁸ Historically, other lines of philosophical inquiry use a version of presentation immediacy as a starting point, Whitehead takes issue with the predominance of this singular mode of perception when very few organisms possess this capability and it does not account for the wider breadth of experience.

Both modes of perception are heavy embodied. Where causal efficacy relates the body to its place in its environment and also in relation to the past and future, presentational immediacy is the immediate rich experience of body experiencing the world. “For we feel *with the body*. There may be some further specialization into a particular organ of sensation; but in any case the ‘*witness*’ of the body is an ever-present, though elusive, element in our perceptions of presentational immediacy.”⁷⁹ The two modes of perception interact in what Whitehead calls the symbolic reference. Human experience is almost always in this mixed-mode of perception where causal efficacy interplays with presentational immediacy and they are correlated as part of our experience of the actual world.

⁷⁶ Casual efficacy is relevant to the larger discussion of space, time, and relativity which is discussed in Chapter 3.

⁷⁷ *Ibid.*, 172.

⁷⁸ *Ibid.*, 168.

⁷⁹ *Ibid.*, 312.

Understanding symbolic reference, or human experience, requires further exploration of Whitehead's meaning when he writes about symbolism. For Whitehead, very simply, a symbol evokes a response in experience. There is no right or wrong in this symbolism and there is no fixed relation in meaning. The interchange between symbol and meaning that Whitehead lays out does not privilege either the symbol or what the symbol evokes.

“Considered by themselves the symbol and its meaning do not require *either* that there shall be a symbolic reference between the two, *or* that the symbolic reference between the members of the couple should be one way on rather than the other way on. The nature of their relationship does not in itself determine which is symbol and which is meaning. There are no components of experience which are only symbols or only meanings.”⁸⁰

The body itself, with which perception in both modes mix into symbolic reference, becomes the site where the symbol elicits response. In drawing together the work of Whitehead and Judith Butler, Michael Halewood describes the impact of Whitehead's conceptualization of symbolism with the body: “No longer is the body to be seen as the passive receptacle which language tries to grasp, refer to, or write upon. Nor is the body an object of science or a cultural construction. Things are not inscribed on the body by either nature or culture. It is the body which enables the symbol to symbolize and the meaning to mean.”⁸¹ Whitehead is positioning the subject, in this case the body, as the locus of meaning-making, through the interplay of perceptions in the mode of symbolic reference.

4.5 Consciousness

While Massumi aims to correct the dualistic interpretation he sees in cultural theory that ignores the material importance of the body, he instead ends up retaining the mind/body dualism

⁸⁰ Alfred North Whitehead, *Symbolism, Its Meaning and Effect : Barbour-Page Lectures, University of Virginia, 1927* (Fordham University Press, 1985), <https://hdl.handle.net/2027/heb.08507>, 9-10.

⁸¹ Michael Halewood, *A. N. Whitehead and Social Theory* (London: Anthem Press, 2011), 118-119.

by inverting the model to pose the primacy of the body. The body is the privileged site, receiving the unmediated and asigned intensity of affect to which the thinking mind arrives after initiated action, at best providing a conscious veto to the autonomic responsive body. The investment is to show the excessive potentialities that exist inherently in affect and explore how the in-betweenness of affect brims with possibility until qualified through thought. The focus on affect is intended to demonstrate process, emergence and a Deleuzian becoming, but the emphasis on affect appears to map a bifurcation between mind and body.

One way in which Massumi's theory of affect is particularly vulnerable to critique are the slippery working definitions across disciplines as to what constitutes consciousness and experience. By utilizing Libet's study, which illustrates for Massumi an experimentally verified example of the clear process of human consciousness coming after bodily autonomy, he collapses the definitions of conscious experience and cognition, though they are not necessarily identical. The lack of nuance in his use of this study does not account for its complexity. As Max Velmans argues, the definitions of consciousness, even for the field of consciousness studies, vary depending upon the phenomena under investigation to include or dismiss pre-consciousness, unconscious mental processes, or self-reflexive consciousness.⁸² In his analysis of Libet's experiment, Velmans poses that the pre-conscious is no less part of the self, though we maybe not be conscious of its internal processes.⁸³ Massumi chooses to interpret consciousness in a rigid way that implies full clear consciousness as an almost binary component to experience.

Consciousness is an important factor in experience for Whitehead, but it is the "crown" and not the base. Much of the philosophical investigation into human experience begins with

⁸² Max Velmans, "How to Define Consciousness: And How Not to Define Consciousness," *Journal of Consciousness Studies* 16, no. 5 (2009): 139–56.

⁸³ Banks and Pockett, "Benjamin Libet's Work on the Neuroscience of Free Will," 667

consciousness, while Whitehead refuses taking the tree top for the forest. For Whitehead, this is a return to the bifurcation of nature that, in this case, privileges human sense data in conscious perception as a stand-in for the whole breadth of human experience.

In *Process and Reality*, Whitehead states his opinion about theorizing consciousness quite plainly: “In general, consciousness is negligible.”⁸⁴ While I and many others believe Whitehead’s philosophy of organism to be valuable to consciousness studies, Whitehead himself thought that consciousness was overemphasized in philosophy resulting in many persistent problems. For a philosopher writing a speculative philosophy of the universe, it is understandable that he viewed consciousness as a rarity. Whitehead sees human consciousness is an act of great simplification, taking in all data from both modes of perception and attending to a very small percentage of it. In this way, philosophy begins on a losing ground if its concerns are strictly that which have already been heavily edited by the processes of consciousness. Whitehead writes: “A moment’s introspection assures one of the feebleness of human intellectual operations, and of the dim massive complexity of our feelings of derivation. The point for discussion is how in animal experience this simplification is effected.”⁸⁵

Returning back to Whitehead’s proposed expansion of how we examine experience. Whitehead cites introspective analysis as problem for how we consciously approach experience. What we experience consciously, according to his model of perception, is always already an edit. Elements are relegated to the foreground or background and primitive emotion is hidden in favor of concreteness. Whitehead writes,

“[t]he attitude of introspection... lifts the clear-cut data of sensation into primacy, and cloaks the vague compulsions and derivations which form the main stuff of experience. In particular, it rules out that intimate sense of derivation from the

⁸⁴ Whitehead, *Process and Reality*, 308.

⁸⁵ Whitehead, *Adventures of Ideas*. 214.

body, which is the reason for our instinctive identification of our bodies with ourselves.”⁸⁶

This introspective analysis of conscious experience is an overwhelming problem for Whitehead. The dismissal of visceral and vague feeling neglects the experience of the whole organism in favor of the ‘clear-cut’ sense data we associate with the mind and brain and divorces it from the body that senses. Eliminating “the main stuff of experience” for its indefinite character results in a misplaced dualism between mind and body.

Using the model of introspective analysis to examine experience privileges certain components of experience, using the most definable sensory data to approach the most abstract conceptual problems. Whitehead’s solution is to level the field and see all experience equally, without preference for the data we have modes of thinking to most easily understand. The introspective analysis that Whitehead argues against ignores the vague felt feelings, which for him, are the basis of experience. As the quote that begins this chapter illustrates, Whitehead’s work, influenced by William James’s radical empiricism, is interested in the full breadth of experience; “sheer disclosure.”⁸⁷ Tracing William James in Whitehead’s theory of prehensions, Victor Lowe writes: “James was at least as emphatic as Whitehead that what is in the clear focus of consciousness can tell nothing like the whole story in the appeal to experience.”⁸⁸

For both Whitehead and James, experience is rich outside of the focal point of consciousness. James used the following terms: “*psychic overtone, suffusion, or fringe*, to designate the influence of a faint brain-process upon our thought, as it makes it aware of relations and objects but dimly perceived.”⁸⁹ Whitehead sometimes uses James’s term *fringe* and

⁸⁶ Ibid., 227.

⁸⁷ Alfred North Whitehead, *Modes of Thought* (New York: The Free Press, 1968), 67.

⁸⁸ Victor Lowe, *Understanding Whitehead* (The Johns Hopkins University Press, 1966), 341.

⁸⁹ James, *Principles of Psychology*, 249.

at others describes it as the penumbra: “Consciousness flickers; and even at its brightest, there is a small focal region of clear illumination, and a large penumbral region of experience which tells of intense experience in dim apprehension. The simplicity of clear consciousness is no measure of the complexity of complete experience.”⁹⁰

Jaak Pankepp and Marie Vandekerckhove refer to James and the fringe of consciousness in their formulation of levels consciousness based on the work of Endel Tulving.⁹¹ James is offered as a starting point of reference to outline a continuum model of consciousness (as opposed to the fringe/focal model discussed previously) that has been theorized by both Tulving and Vandekerchove. This model views consciousness as a continuum of three stages: anoetic, noetic, and auto-noetic. First, the anoetic level of consciousness is presumed to contain aspects of the fringe, but is non-reflective. The noetic level implies some knowledge, self-recognition and semantic memory. This stage is associated with babies between 8-12 months old who begin to recognize themselves and realize they are in the world.⁹² Finally, the auto-noetic stage of consciousness is entirely self-aware and includes both semantic and episodic memory systems. This stage allows for memory restructuring, imagining futures and, in a sense, an ability to reimagine or experience the past (think Proust and the madeleines).⁹³ Panksepp and Vandekerckhove also note that lower levels of consciousness in this spectrum are experienced by animals. These levels of consciousness are modeled in a way to assert that each level, beginning with the anoetic, is a prerequisite for the next higher level.

⁹⁰ Whitehead, *Process and Reality: An Essay in Cosmology*, 367.

⁹¹ Vandekerckhove, Marie, and Jaak Panksepp. 2009. 'The Flow Of Anoetic To Noetic And Auto-noetic Consciousness: A Vision Of Unknowing (Anoetic) And Knowing (Noetic) Consciousness In The Remembrance Of Things Past And Imagined Futures'. *Consciousness And Cognition* 18 (4): 1018-1028. doi:10.1016/j.concog.2009.08.002. pg. 1019.

⁹² *Ibid.*, 1024

⁹³ *Ibid.*, 1025

What happens in the clear focal point of consciousness is narrow, but being outside of the focal point cannot be wholesale dismissed as purely autonomic or non-conscious. Aaron Sloman, in response to Velmans, writes that consciousness is many things together and not one single definite entity; he likens the complexity of consciousness to multiple definitions ascribed to the word “energy.”⁹⁴ Consciousness is highly relational and dependent on sets of processes that are not fully understood. The investment in constructing affect in human experience as outside of consciousness for the purposes of retaining affect’s multiplicity and the body as the sole site of the subject’s becoming, casts and reduces consciousness to a binary on / off and does not account for the processual nature and (hopefully) messy entanglement of all the components that comprise experience as such. James, and through him Whitehead, resists a binary view on consciousness with the idea of fringe, though neither are comprehensive as the Tulving-based model that expands certain elements of conscious experience to other animals.

4.6 Conclusion

The affect theory discussed here has focused mostly on the version conceptualized by Brian Massumi. This “branch” of affect has been met with thoughtful criticism outlined in this text that points out valid issues with the way affect is being theorized and what the implications of the concept might be, or not be. The process commitments that Massumi relies on, primarily through Deleuze, work to emphasize the body and becoming. While I agree that these process commitments are important, the attention to affect (which we are challenged to describe or theorize) is limiting compared to retaining the entire process of experience, from feeling to

⁹⁴ Aaron Sloman, “Developing Concepts of Consciousness,” *Behavioral and Brain Sciences* 14, no. 4 (1991): 694–95.

perishing as described in Whitehead's process philosophy. Viewing affect alongside a closer reading of Whitehead's larger philosophy of organism casts a different pattern of relief across these ideas.

Affect as an autonomous asignifying force begs several questions, namely, what do we *do* with it? To isolate affect and atomize it out of larger experience is the first move in rendering it useless. Affect can be seen as conceptually similar to what Whitehead poses as the becoming of the subject through feeling, but it does not account for the whole process of being affected and synthesizing meaning in experience. For Whitehead, the prehension or feeling is how the data is absorbed into the actual entity, unifying toward the subjective aim. He writes, “[H]ow an actual entity *becomes* constitutes *what* the actual entity *is*;... Its ‘being’ is constituted by its ‘becoming.’ This is the ‘principle of process.’”⁹⁵

Rather than isolating affect away to separate potentiality from captured experience, reading affect as part of the larger process of experience is necessary as to not inadvertently “thingify” it as an excessive force that is fascist at its worst, and at its best, holds all the possibilities of becomings. Whitehead forcefully reminds his readers, “that apart from the experiences of subjects there is nothing, nothing, nothing, bare nothingness.”⁹⁶ As Cromby and Willis suggest, feeling offers an alternative to affect that avoids these criticisms, as “feelings are already intentional, already meaningful – albeit that their *complete* meaning only gets realized in their lived, contingent conjunctions with the signs, symbols, words, events and activities that interpellate them and which they continuously suffuse.”⁹⁷ Reconsidering affect in light of

⁹⁵ Whitehead, *Process and Reality: An Essay in Cosmology*, 23.

⁹⁶ *Ibid.*, 167.

⁹⁷ Cromby and Willis, “Affect—or Feeling (after Leys),” 489

Whitehead's concept of feeling could allow for process and becoming that is not devoid of the histories of actual entities, that exists with meanings in relation to and constituting the subject.

While Whitehead's philosophy can provide fruitful ways to rethink affect, his work provides specific guidance for engagement with modern day science. The criticism of the use of scientific resources, or cherry-picking, for the development of affect theory and its empirical verification echoes critics of feminist new materialism more broadly.⁹⁸ Selective readings of affective neuroscience and neuropsychology without reference to the modes of its production, reception, situation, and its own theoretical background while capitalizing on it as verification and unquestioned truth-making is unrevolutionary. In this case, not only does it diminish a theoretical richness that could enhance its relevance and applicability through a more nuanced engagement, it certainly does not trouble the division between science and humanities to lift partially compatible concepts and present them as equitable. A more thorough engagement is entirely possible and should not just be limited to the inclusion of sciences and scientists with sympathy or a book deal in the sphere of the humanities. The commitments that Whitehead presents against the bifurcation of nature and the fallacy of misplaced concreteness provides just one lens with which to seriously engage with science without reifying it.

Whitehead's philosophy does not accept a dualism between mind and body as is implicated by Massumi's version of affect. For Whitehead, all experience is both physical and mental but not necessarily conscious, hence the panpsychism or panexperientialism discussed in the previous chapter. There is not a neat separation of these components and they depend upon each to form an actual entity. As Whitehead writes in *Adventures of Ideas*,

“Each occasion has its physical inheritance and its mental reaction which drives it on its self-completion. The world is not merely physical, nor is it merely mental. Nor is it merely *one* with many subordinate phases. Nor is it merely a complete fact, in its essence

⁹⁸ This topic is discussed in greater detail in Chapter 2.

static with the illusion of change. Wherever a vicious dualism appears, it is by reason of mistaking an abstraction for final concrete fact.”⁹⁹

⁹⁹ Whitehead, *Adventures of Ideas*, 190.

Chapter Five.

Margaritas at the Mall: Aesthetics and Abstractions

Another characteristic of living society is that it requires food. In a museum the crystals are kept under glass cases; in zoological gardens the animals are fed. Having regard to the universality of reactions with environment, the distinction is not quite absolute. It cannot, however, be ignored. The crystals are not agencies requiring the destruction of elaborate societies derived from the environment; a living society is such an agency. The societies which it destroys are its food. This food is destroyed by dissolving it into somewhat simpler social elements. It has been robbed of something. Thus, all societies require interplay with their environment; and in the case of living societies this interplay takes the form of robbery. The living society may, or may not, be a higher type of organism than the food which it disintegrates. But whether or no it be for the general good, life is robbery. It is at this point that with life morals become acute. The robber requires justification.¹

All production is appropriation of nature on the part of an individual within and through a specific form of society.²

5.0 Introduction

The back cover of Jane Bennett's 2010 book, *Vibrant Matter*, includes a quote from Rita Felski praising the work as a "manifesto for a new materialism."³ In it, she explores the agency

¹ Alfred North Whitehead, *Process and Reality: An Essay in Cosmology*, ed. David Ray Griffin and Donald W Sherburne (New York: The Free Press, 1978), 105.

² Karl Marx, *Grundrisse*, ed. trans. Martin Nicolaus (Penguin Books, 1973), 21.

³ Bennett, *Vibrant Matter: A Political Ecology of Things*.

and vitality of things through her development of a strain of thinking she calls ‘vibrant materialism.’ Rumblings of the development of her vibrant ontology begin in her earlier book, *The Enchantment of Modern Life: Attachments, Crossings, and Ethics*.⁴ This earlier work studies the ethical importance and affective possibilities of allowing oneself to be enchanted by the material world. In the beginning of the chapter, “Attachments and Refrains,” Bennett asks why, in the world of violence, inequity, and suffering, does one choose to write a book about enchantment. One reason she offers is “an appeal to experience.”⁵ Between her work on enchantment, the tones of vibrancy later developed more fully in *Vibrant Matter*, and her appeal to experience, Bennett’s work builds concepts that align to the new materialist project and resonate with similar tones in process philosophy.

I want to view these two texts by Bennett as a coordinated movement towards the vital materialism that Bennett advocates. An object-orientated ethics is woven throughout both texts, the first book sketching out what becomes more forcefully argued in the second. Bennett begins with the concept of enchantment, which affectively tunes us (humans) in to the vibrant objects that co-exist with us, in spite of and counter to the negative narratives that paint the modern world as cynical and lifeless. Cultivating this affective disposition puts us on the wavelength to appreciate the vitality and agency of the objects. The vital materialist perspective she outlines depends upon a flattened ontology that does not privilege the human, but disperses agency, responsibility, and vitality across her system – ontologically levelling humans, dogs, sunflowers, microbes, metal, gloves, etc. Bennett builds out her vibrant materialism as a non-anthropocentric,

⁴ Bennett, *The Enchantment of Modern Life: Attachments, Crossings, and Ethics*.

⁵ *Ibid.*, 159.

aesthetic, and affective ontology that challenges the binary of human/nonhuman and creates a method of political analysis that recognizes the agency and vibrancy of things.⁶

In the first half of this chapter, I want to look at enchantment and what it does for Bennett and her vital materialism by reading it alongside the aesthetics and aesthetic experience outlined throughout the work of Alfred North Whitehead. For Whitehead, all experience is aesthetic experience as the aesthetic is part of the process of experience. In this sense, aesthetic experience is general and suffused across his work. As a speculative metaphysics of atomistic experience, the philosophy of organism is not centered around the nuances of human experience in this specific modern era but the world as experience in process. That said, in his later works, Whitehead discusses the concepts of Appearance, Reality and Beauty at length as part of his description of Civilization. To bring together both aspects of Whitehead's thought on aesthetics, I draw on the similarities and contrasts of the aesthetic philosophy of John Dewey, the American pragmatist process philosopher and contemporary of Whitehead's, who develops a process-influenced view of aesthetic experience in his 1934 work, *Art as Experience*.⁷ Dewey's work on aesthetics is particularly descriptive of modern human experiences and in that way, can provide supplementary context to a process view of the human aesthetic experience. As daily life and human experience has changed considerably in the intervening near century since Dewey's and Whitehead's publications, it is necessary to consider the historic situation which informs their writing and colors their thinking.

In the second half of this chapter, I follow Bennett's argument for the enchantment potential of commodities under late capitalism. Bennett does not engage with a critique of capitalism but wants to liberate vibrant commodities as potential sites of enchantment and

⁶ Bennett, *Vibrant Matter: A Political Ecology of Things*, x.

⁷ John Dewey, *Art as Experience* (New York: Perigree Books, 2005).

sources of unpredictable affectations as opposed to joyless products of manipulative capitalism. While Whitehead and Dewey were not Marxists, Whitehead's fallacy of misplaced concreteness and the operation of abstractions are resonant with a Marxist framework. Anne Fairchild Pomeroy, Michael Halewood, and Alberto Toscano's respective readings of Whitehead and Marx have explored compatibilities between these thinkers, and I seek to contrast these ideas through Bennett's engagement with Marx, Horkheimer and Adorno.⁸ Through this comparison I want to illustrate the differences between the potential for activation in Bennett's enchantment and a process aesthetic experience.

5.1 Slanted & enchanted

In *The Enchantment of Modern Life*, Bennett argues against the widely perpetuated storyline that modern life is disenchanted. In particular, the narratives of disenchantment authored by Max Weber, Hans Blumenberg, and Simon Critchley. Bennett instead offers alternatives and opportunities to see the enchantment already present in contemporary life, thereby providing sources of joy which can further ethical engagement. Without denying the inequity and violence of modern life, Bennett wants to draw attention to the enchanting parts of lived experience that exist alongside.⁹ Bennett argues that there is an ethical necessity in experiencing and appreciating enchantment when the alternative is often cynicism, skepticism, and nihilism. Endorsing joy and enchantment is positioned as an ethical requirement, as "it is too hard to love a disenchanted world."¹⁰

⁸ Whitehead's politics were liberal, but not specified. Dewey would be considered a socialist democrat by today's standards. But what their affiliations would be under current circumstances is unknown, as neither saw the Great Pacific Garbage Patch. Steven Shaviro has noted his hesitance in bringing together Marx and Whitehead, see Steven Shaviro, *Without Criteria: Kant, Whitehead, Deleuze, and Aesthetics* (Cambridge: The MIT Press, 2009), n159.

⁹ Bennett, *The Enchantment of Modern Life: Attachments, Crossings, and Ethics*, 8.

¹⁰ *Ibid.*, 12.

Enchantment, for Bennett, has several symptoms that culminate in a spellbound feeling of wonder. It can be paralyzing and take one out of the chronological experience of time into “pure presence.”¹¹ It can be brought on through the repetition of music or *chant* in an experience both charming and disturbing, heightening some perceptions while a “background sense of order has flown out the door.”¹² It takes ones by surprise in a way that is both disarming and pleasurable, restoring a sense of child-like wonder. “Enchantment begins with the step-back immobilization of surprise but ends with a mobilizing rush as if an electric charge had course through space to you. In enchantment, a new circuit of intensities forms between material bodies.”¹³ Bennett illustrates enchantment as a kind of affective exchange throughout the text. Her formulation of enchantment as affect is heavily informed by Deleuze and references the work of Brian Massumi.

Enchantment as an affective experience is positioned in opposition to critical thought. Critique is cynical and deadening in comparison to the lively vibrant affective harmony one can experience when they open themselves to the wonder of choosing enchantment. While there are some stimulus that might provoke enchantment with more ease, like music or human-animal encounters, Bennett describes many alter-sites of enchantment like bureaucratic offices, or a pile of debris (“glove, pollen, [dead] rat, [plastic bottle] cap, stick”) in a Baltimore gutter.¹⁴ The affective aesthetic experiences are valorized as they amplify the vitality and reinforce the ontological value of these items, according to Bennett. But thinking in a mode of critique does the very opposite, as it puts the focus back on the human and consequently de-vitalizes the

¹¹ Philip Fisher, “Wonder, the Rainbow, and the Aesthetics of Rare Experiences” (Harvard University Press, 1998). Quoted in Bennett, *The Enchantment of Modern Life: Attachments, Crossings, and Ethics*, 5.

¹² Bennett, *The Enchantment of Modern Life: Attachments, Crossings, and Ethics*, 34.

¹³ *Ibid.*, 104.

¹⁴ *Ibid.*, 105; Bennett, *Vibrant Matter: A Political Ecology of Things*, 4.

nonhuman actants. The division Bennett positions between affect and critique is persistent across her texts.

When Bennett calls for enchantment as a way to encounter the world, she offers many reasons why this disposition is a valuable one. Enchantment, as she describes, provokes a feeling of care. When one is enchanted, they are more likely to respond to the world lovingly and sympathetically; “one must be enamored with existence and occasionally even enchanted in the face of it in order to be capable of donating some of one’s scarce mortal resources to the service of others.”¹⁵ The world makes a case for itself by being adorable, if we are able and open to see it and feel it as such. Or as Bennett writes, “What’s to love about an alienated existence on a dead planet?”¹⁶ Bennett positions care as something that can be earned by evoking loving feeling. This can certainly be true, but it also puts considerable pressure on the world to make itself attractive and alluring to humans. She runs this argument both ways, as humans as well, are expected to cultivate their ability to be enchanted and romanced by the refuse in the gutter or the waiting room at the Department of Motor Vehicles.

By authoring an alternative story to the gloomy disenchantment narrative, Bennett seeks not to reenchant the world but illustrate what has been enchanting all along. The enchantment that Bennett advocates is also described as renewing and energizing, with an aim at powering up individuals for positive and progressive change. The disenchanting mechanistic world does not argue for its own rescue, but if we see the world as enchanted and enchanting, we foster within ourselves endearing attachment to it and possibly motivate political and ethical behaviors. As such, Bennett provides an “Ethics of Enchanted Materialism,” assembling components from the

¹⁵ Bennett, *The Enchantment of Modern Life: Attachments, Crossings, and Ethics*, 4.

¹⁶ *Ibid.*, 4.

works of Foucault, Kant, Friedrich Schiller, Richard Flathman, and Deleuze and Guattari.¹⁷ Before adapting it to the model of enchantment in *The Enchantment of Modern Life*, Bennett worked through some of these ideas in an article published in *Political Theory* in 1996 entitled, “‘How is It, Then, That We Still Remain Barbarians?’: Foucault, Schiller, and the Aestheticization of Ethics.” In this piece, she argues that the value of aesthetics to ethics cannot be dismissed as it offers a way to cultivate care.¹⁸ Enchantment, as aesthetics or an aesthetic experience, is a pathway to ethical care.

Bennett advocates for an ethical approach that includes both a moral code and “sensitivity” in conjunction. While a moral code allows for a rough idea of ethical acceptability, it is not sufficiently nuanced for every occasion. In this way, Bennett defines a “sensitivity” as:

“the quality or character of sensuous experience, a character that is culturally encoded and temperamentally delimited, but also educable (to some degree) through careful techniques of the self. A sensitivity is a disciplined form of sensuousness. This aesthetics – aesthetics as sensitivity-formation – has implications for ethics that are irreducible to fascism, hedonism, or indiscriminateness. For as a form of askesis, a sensitivity establishes the range of possibility in perception, enactment, and responsiveness to others.”¹⁹

Sensitivity is a cultivated affective sense, adaptable with more flexibility than the rigid code; and Bennett hopes, more active and attuned through careful discipline of the natural state of wild “unruly” affective energy.²⁰ When affective disciplines are attuned and responsive to the material world, we can form affirmative connections and see “that the natural and cultural worlds *offer gifts* and, in doing so, remind us that it is good to be alive.”²¹

¹⁷ Ibid., 133, 156.

¹⁸ Jane Bennett, “‘How Is It, Then, That We Still Remain Barbarians?’: Foucault, Schiller, and the Aestheticization of Ethics,” *Political Theory* 24, no. 4 (1996): 653–72, 667.

¹⁹ Ibid., 654.

²⁰ Bennett, *The Enchantment of Modern Life: Attachments, Crossings, and Ethics*, 157.

²¹ Ibid., 156.

The ethics of Bennett's enchanted materialism is largely informed by Thoreau, on whom she published her book, *Thoreau's Nature: Ethics, Politics, and the Wild*, in 2002 between the publications of *The Enchantment of Modern Life* and *Vibrant Matter*. Contained in this influence, Bennett writes, is "[i]ts appreciation of nonhuman, as well as human, sites of vitality – of what might be called its hyperecological sense of interdependence – proceeds from and toward the principle of treading lightly on the earth."²² Attentiveness, generosity, and care are the major themes of this ethical framework that must be cultivated as a kind of aesthetic disposition, tempered with a humble modesty that does not ontologically or epistemologically privilege humans. In answering her own posed question, why ought we adopt this thinking and model of affective discipline? Bennett answers, "There are many different reasons; there is no single rationale for which all human beings could be expected to draw...My sense, however, is that all these, in different ways, tap into a subintentional disposition in favor of life."²³

Ethics and aesthetics are both value theories, Bennett herself is wary of the aesthetic in favor of affective language for all the appropriate reasons, "that to allow aesthetics to enter ethics is to pollute it with the arbitrariness of taste."²⁴ The go-to example implied by Bennett and many other who make this argument is the debate around the aesthetic values of Nazi propaganda. Still Bennett prefers to stick to affective language; no less determinate than aesthetics for ethical purposes as an affective 'unpredictable intensity,' but a little less conceptual baggage than "aesthetic" and more importantly, already embodied without question. This importance of embodiment to Bennett must be emphasized, because the value of the "cultivation of somatic will" and "harnessing affective energies" as political technique is her defense against engaging

²² Ibid., 157.

²³ Ibid., 158.

²⁴ Ibid., 148.

with a critique of capitalism which belittles sensitivity. She defends her focus as central to a cause that she simultaneously rips, writing:

“Of course, it is not clear whether neo-Marxism itself possesses a viable “strategy for social change” or whether it has done enough to cultivate a sensitivity to the impositions and violences engendered by such an ambitious project. One might also reply that the failure to focus on economic dimensions of ethics is not a dismissal of their importance.”²⁵

Bennett seems notably sensitive to a critique that would imply that affective attunement is not sufficiently ethical, political or radical, as “macromaterialist critics insist that only the quest for a “politics of alliances” and “coalition building” counts as an ethical response to injustice.

Attempts to cultivate a generous disposition simply do not qualify.”²⁶ Bennett’s avoidance of a critique of capitalism will be discussed in the second half of this chapter. I mention her dismissal of Marxism here, slightly out of joint, to show how Bennett argues for affective dispositions as a political technique, without aligning to any particular politics. Especially a politics that does not, in turn, prioritize the sensitivity she wants to cultivate.

The limits of scope and purpose of this chapter prevent me from going whole hog on the complicated ties between aesthetics and ethics. But I want to emphasize that Bennett’s affective and aesthetic argument for enchantment, for the cultivation of an enchanted disposition, and for her vital materialism is also an ethical one. This position of enchantment is posed in opposition to the disenchanting view, that demystifies, de-magics, rationalizes, and scientizes the world without remainder – nothing left over, no excess, everything fragmented lifeless and accounted for.²⁷ As enchantment is a bus stop on Bennett’s journey into a vibrant materialism, she argues for our need to see and find enchantment in the world because it reveals to us the vibrant life of

²⁵ Ibid., 151

²⁶ Ibid.

²⁷ Ibid., 58-60.

things that we otherwise ignored. Framing enchantment as well as her vibrant materialism as an ethical imperative raises the stakes of any critical engagement and posits opposition to it as both unethical and humanist. In agreement with Paul Rekret’s critique of new materialism generally, and Bennett specifically, I see this move as creating a reductive “ethical binary of attunement or resentment to the world.”²⁸

Rekret criticizes this move in Bennett and others to “collaps[e] ontology and ethics” by characterizing attunement to the enchanting ontological nature of the world as an ethical choice.

He writes,

“The whole theoretical edifice here stands upon a starkly drawn binary between the ‘resentment’, ‘demystification’, ‘suspicion’, or ‘politics of moral condemnation’ of critique, and the ‘enchantment’ of ‘affective openness to material vitality’ or the ‘cultivated discernment of the web of agentic capacities’, on the other hand (Bennett, 2001, 2010, p. x, 3, 15, 38)... Critique, it follows, is merely an affective error and need not be engaged on its own terms.”²⁹

Further, the positioning of enchantment and wonder as a both political fuel and ethical attunement in the face of systemic violence implies a devaluation of meaningful critique as source of motivation or a mode of ethical engagement.

Facing criticism from political theory scholars on the back of her book on enchantment, Bennett reaffirms in the preface to *Vibrant Matter* her position of cultivating affective dispositions, like ethical enchantment, as a form of “micropolitics.”³⁰ Without the affective response, she writes, “any principle or policy risks being just a bunch of words. There will be no

²⁸ Paul Rekret, “A Critique of New Materialism: Ethics and Ontology,” *Subjectivity* 9 (2016): 225–45, 226.

²⁹ *Ibid.*, 228-230.

³⁰ Brian Massumi uses Deleuze and Guattari’s “micropolitics” in combination with affect. Micropolitics is not about size, but rather “[i]t isn’t caught in the usual filters and structures of understanding, because it embodies a singular mode of movement that’s too ghostly or slippery for that. “Micropolitical” refers to a quality of movement – a movement doubled by its own semblance and resonating with the potential of that intensification.” Brian Massumi, *The Principle of Unrest: Activist Philosophy in the Expanded Field* (London: Open Humanities Press, 2017), 101-102.

greening of the economy, no redistribution of wealth, no enforcement or extension of rights without human dispositions, moods, and cultural ensembles hospitable to these effects.”³¹

The experience of enchantment that Bennett argues for makes a human subject more affectively open to the vibrant materialism and the “thing-power” she theorizes. Thing-power, Bennett writes, “not Flower Power, or Black Power, or Girl Power, but *Thing-Power*: the curious ability of inanimate things to animate, to act, to produce effects dramatic and subtle.”³² Recognizing thing-power, for Bennett, de-centers the human and places the subject in much wider landscape of relations. This is not entirely at the expense of human responsibility, but to “chasten...fantasies of human mastery” and remind us that stuff matter and acts - trash does not “go away,” non-human actants are vibrant participants in ecosystems and assemblages that cannot be reduced to dead matter.³³ She continues further that vital materialism does not offer to solutions for exploitation and oppression. Rather, that by seeing the vibrancy of matter, humans can de-center themselves and view themselves as equal actant as the other matter and bodies in their environment. From this flattened point of view, dismissing the all-powerful narrative of human exceptionalism and environmental domination, one might take more care of their environment with the understanding that it is their own self-interest.³⁴ This move toward a flat ontology is common in new materialist texts.

Manual DeLanda, who Bennett cites in *Vibrant Matter*, coined the termed “flat ontology” in his 2002 book, *Intensive Science & Virtual Philosophy*. His development of flat ontology depends heavily on the work and terminology of Deleuze to de-privilege anthropocentric systems

³¹ Bennett, *Vibrant Matter: A Political Ecology of Things*, xii.

³² *Ibid.*, 6.

³³ *Ibid.*, 122.

³⁴ *Ibid.*, 13.

and refocus on the relations between things.³⁵ A flat ontology refers to a non-anthropocentric ontological system that sets humans, animals, objects, etc. on equal ontological footing without privileging an individual or group. There is no hierarchical order of or within beings or objects based on values in ethics or actions. Variations and components of this ontological idea can be seen in different lines of thought (see object-oriented ontology).

Whitehead does not subscribe to a flat ontology. While all entities have experience, mental and physical poles, and in essence are ontologically the same, he proposes “gradations of importance, and diversities of function.”³⁶ The collapse of ethics and ontology that is proposed in the flat ontological model developed by DeLanda and integrated into Bennett’s vital materialism, does not discriminate but rather ascribes identical agency and ethics across the board. As with many incarnations of flat ontologizing, the criticism remains that such a model removes responsibility, relativizes lived human ethics, and views agency as zero-sum game (wherein human agency is reduced in order to agentialize objects). I argue, with support from Whitehead, against both the new materialists and their critics that granting ontological status of all entities does not require the relativism of a “flat ontology,” further, ontological equality does not imply or dismantle other forms of privilege that lend topography and hierarchy of power within relations. Bennett recognizes this, writing, “to acknowledge nonhuman materialities as participants in a political ecology is not to claim that everything is always a participant, or that all participants are alike. Persons, worms, leaves, bacteria, metals and hurricanes have different types and degrees of power, just as different persons have different types and degrees of power...depending on the time, place, composition, and density of formation.”³⁷

³⁵ DeLanda, *Intensive Science and Virtual Philosophy*.

³⁶ Whitehead, *Process and Reality: An Essay in Cosmology*, 18.

³⁷ Bennett, *Vibrant Matter: A Political Ecology of Things*, 109.

Bennett's flat ontology seems a little less strictly flattened than DeLanda's, though she does not compare them specifically. The flat-ish ontology helps Bennett view the human and non-human as interconnected assemblages, "to present human and nonhuman actants on a less vertical plane than is common."³⁸ Influenced by Deleuze, Bennett uses the assemblage to emphasize how the human is an assemblage made-up of non-human material and is a part of a larger assemblage or ecosystem in which other human and non-human components exist in relation to one other. Bennett describes a blackout as an example of a human/non-human assemblage and how the flat ontology models a dispersed or "confederate agency."³⁹ In the blackout case, who is to blame when the various actants that exist in the event include: short-handed power plants, pre-set mechanisms, wires, fire, brush, crumbling infrastructure, energy companies, consumers, "the grid," regulators and regulations, board members, and electricity?⁴⁰

The initial point of Bennett's example is to show how enmeshed all the actants are, thereby confusing notions of causality and responsibility. But when it comes to actual responsibility, Bennett writes,

"But must a distributive, composite notion of agency thereby abandon the attempt to hold individuals responsible for their actions or hold officials accountable to the public? The directors of the FirstEnergy corporation were all too eager to reach this conclusion in the task force report: no one really is to blame... I, too, find it hard to assign the strongest or most punitive version of moral responsibility to them...a theory of vibrant matter presents individuals as simply incapable of bearing full responsibility for their effects."⁴¹

The flatness of Bennett's system is particularly convenient for human actors, which are the only members of the assemblage-event for whom a concept like "moral responsibility" would apply.

To imply that board members that run power plants without sufficient staff and push for

³⁸ Ibid., ix.

³⁹ Ibid., 37.

⁴⁰ Ibid., 26.

⁴¹ Ibid., 37.

deregulation for greater profit or officials that defund infrastructure are unaware of the impacts and possible implications of their decisions is ludicrous. The ontological status of objects, the distribution of agency (when not equated with power) across human and non-human actants, can both be entirely valid without supposing that human actors lack responsibility and therefore consequences for their actions.

This section has traced Bennett’s advocacy for affective enchantment to her vital materialism. By drawing attention to the division of enchantment/disenchantment, I have shown how Bennett equates it to a divide between affective openness and critical thought. Based on the affective and aesthetic disposition of enchantment, we see how Bennett positions vital materialism as an ethics as well an argument for a flattened ontology. In the next section, I will describe how aesthetics operates in two ways in Whitehead’s philosophy, as sense and as pattern.

5.2 Whitehead’s Aesthetics

In *Aesthetic Concerns, Philosophical Fabulations: The Importance of a ‘New Aesthetic Paradigm,’* Melanie Sehgal offers a speculative story about the origins of aesthetics. She suggests that the beginning of aesthetics as a field can be read as a philosophical bifurcation of nature. She writes,

“[T]he formation of aesthetics as a discipline in the 18th century appears as the direct reaction to the generalization of a Newtonian notion of materiality, based on the idea of simple location, its explicit aim being to grant a place to what did not fit into the conceptual scheme provided by (generalized) physics: the subjective, sensory and emotional, the spiritual and aesthetic.”⁴²

⁴² Melanie Sehgal, “Aesthetic Concerns, Philosophical Fabulations: The Importance of a ‘New Aesthetic Paradigm,’” *Sub-Stance* 47, no. 1 (2018): 112–29, 115.

The aesthetic, seen through this lens, is the leftovers of classical physics and the remainder outside of the purview of scientific knowledge. This is not solely a philosophical issue and mode of thinking, but one that impacts how we feel and what we value in experience.⁴³ Seghal argues for a new approach to aesthetics that moves past this bifurcation of thought, “fostering new modes of being affected by the world.”⁴⁴ A first step, Seghal suggests, is to move past the idea of aesthetic as attached to the subject or art objects, but rather, follow Whitehead’s view of the aesthetic as a component of all experience “that takes into account and puts into practice and motion the reciprocity of feeling, relationality and existence.”⁴⁵

Whitehead’s philosophy puts considerable weight on the aesthetic, without providing much context for how the word “aesthetic” should be applied or how the philosophy itself can be read as a contribution to field of aesthetics. Yet even in his earlier philosophical works, the importance of the aesthetic is clear. In his article “Aesthetics in the Philosophy of Alfred North Whitehead,” Martin Kaplický outlines two approaches to a Whiteheadian aesthetics. The first approach is articulated by Donald W. Sherburne, in his book *A Whiteheadian Aesthetic*, arguing that the usage of aesthetic terminology in Whitehead’s work is too vague to be read as an intention gesture toward an aesthetic theory and instead Sherburne creates an aesthetics based on Whitehead’s scheme.⁴⁶ An alternative approach followed by Steven Shaviro in *Without Criteria: Kant, Whitehead, Deleuze, and Aesthetics*, views Whitehead’s use of aesthetic vocabulary as intentional. In this case, an aesthetic theory need not be created but excavated, as his references

⁴³ Ibid., 117.

⁴⁴ Ibid., 118.

⁴⁵ Ibid., 122.

⁴⁶ Martin Kaplický, “Aesthetics in the Philosophy of Alfred North Whitehead,” *Estetika* 48, no. 2 (2011): 157–71, 158-159.

to the aesthetic are scattered across his texts.⁴⁷ With Shaviro and Kaplicky and others, I read Whitehead's philosophy as fundamentally and intentionally aesthetic.

In defining 'aesthetic,' we can follow Alexander Gottlieb Baumgarten's meaning, which refers to the appreciation of beauty, or the Kantian definition as sensual perception.⁴⁸ Whitehead addresses both sides of the aesthetic. In the Kantian sense, the aesthetic as sense perception is a feature of every actual entity's becoming. In the philosophy of organism, Whitehead explains a phase of process as "aesthetic." As discussed in previous chapters, the base unit of Whitehead's philosophy of organism is the actual occasion or actual entity, which are often used interchangeably in his texts. They are the "final real things" that make up the universe; "these actual entities are drops of experience, complex, and interdependent."⁴⁹ Actual entities become through the prehensions or feeling of other actual entities, unifying the datum in accordance with their subjective forms, "[i]t is a process of 'feeling' the many data, so as to absorb them into the unity of the one individual 'satisfaction."⁵⁰ Each actual entity is the culmination of its prehensions into a novel entity that achieves 'satisfaction' and perishes, becoming data for the next iteration of actual entities. As Whitehead describes, "[t]he 'satisfaction' is the culmination of the concrescence into a completely determinate matter of fact."⁵¹

The process by which an actual entity feels has three phases, "(i) the responsive phase, (ii) the supplemental stage, and (iii) the satisfaction."⁵² Whitehead writes,

"The first phase is the phase of pure reception of the actual world in its guise of objective datum for aesthetic synthesis... The feelings are felt as belonging to the external centers and are not absorbed into the private immediacy. The second stage is governed by the private ideal, gradually shaped in the process itself; whereby the many feelings,

⁴⁷ Ibid., 159.

⁴⁸ Mary J. Gregor, "Baumgarten's 'Aesthetica,'" *The Review of Metaphysics* 1 37, no. 2 (1983): 357–85.

⁴⁹ Whitehead, *Process and Reality: An Essay in Cosmology*, 18.

⁵⁰ Ibid., 40.

⁵¹ Ibid., 212.

⁵² Ibid.

derivatively as alien, are transformed into a unity of aesthetic appreciation immediately felt as private.”⁵³

In this second supplemental phase, the objective data becomes emotionally and subjectively felt. Whitehead divides the supplemental phase further in two sub-phases, the aesthetic supplement and the intellectual supplement, but notes that “these phases may be trivial; also they are not truly separable, since they interfere with each other by intensification or inhibition.”⁵⁴ This clarification is important and will be drawn back upon in the following sections. There is no separation between the aesthetic and the intellectual, they inform and interfere with each. Further, it should be noted that all the phases in the process of becoming are not “truly separable” in that they occur like a quantum jump – in an instant - outside of space-time and form a “quanta of space-time” (See Chapter Three).⁵⁵

The aesthetic phase is described as emotional, heightening some values and diminishing others with respect to the subjective aim of the entity.

“In the aesthetic supplement there is an emotional appreciation of the contrasts and rhythms inherent in the unification of the objective content...In this phase perception is heightened by its assumption of pain and pleasure, beauty and distaste. It is the phase of inhibitions and intensifications.”⁵⁶

This initial aesthetic assessment is ‘followed’ (again, not truly separable and marked by interference) by the intellectual supplement, in which the data is integrated with greater complexity and consciousness, if applicable, comes onto the scene.⁵⁷ In this way, the aesthetic is

⁵³ Ibid.

⁵⁴ Ibid., 213.

⁵⁵ Elizabeth M. Kraus, *The Metaphysics of Experience: A Companion to Whitehead's Process and Reality*, 2nd ed. (New York: Fordham University Press, 1998), 159. When Whitehead calls these phases “trivial” he further clarifies that in some cases, these phases are insignificant: “If both phases are trivial, the whole second [supplemental] phase is merely the definite negation of individual origination; and the process passes passively to its satisfaction. The actual entity is then the mere vehicle for the transference of inherited constitutions of feeling.” (PR 213)}

⁵⁶ Whitehead, *Process and Reality: An Essay in Cosmology*, 213.

⁵⁷ Kraus, *The Metaphysics of Experience: A Companion to Whitehead's Process and Reality*, 78.

a component of all experience as a process of each actual entity, though in some occasions this process has greater significance than others.

The dipolar character of the actual entity provides something that Bennett's vital materialism reduces. For Whitehead, the responsive phase, the physical receptive phase in which the actual entity prehends its world, is then synthesized in its mental aesthetic phase. What is physically felt is also conceptually unified into private experience. This becomes more relevant as societies of actual entities have the potential for greater and more complex (occasionally conscious) experience. In this way, the affective and the mental are never entirely discrete. While Bennett wants to privilege the affective, Whitehead demonstrates that the experience is never fully one or other.

Turning now to the other dimension of "aesthetic," defined as the appreciation of beauty, in Whitehead's work, we need to understand what leads Whitehead to this discussion. In "The Habit of Art," Nicholas Gaskill reads Whitehead's aesthetics into a reconfiguring of the pragmatism of Dewey and James. Gaskill explains how Whitehead's view of abstractions and misplaced concreteness lead him "[renovate] the concepts of Truth, Beauty, Art, Adventure, and Peace so that they attune us to the vivid values motivating and sustaining our selections."⁵⁸ The fallacy of misplaced concreteness describes the error in which an abstraction is taken for the concrete. Abstractions, however, are not the problem; they are entirely necessary. In *Science and the Modern World*, Whitehead writes:

"The disadvantage of exclusive attention to a group of abstractions, however well-founded, is that, by the nature of the case, you have abstracted from the remainder of things. In so far as the excluded things are important in your experience, your modes of thought are not fitted to deal with them. You cannot think without abstractions;

⁵⁸ Nicholas Gaskill, "The Habit of Art: Whitehead, Aesthetics, and Pragmatism," in *Thinking with Whitehead and the American Pragmatists: Experience and Reality*, ed. Brian G. Henning, William T. Meyers, and Joseph D. John (London: Lexington Books, 2015), 179–94, 182.

accordingly, it is of the utmost importance to be vigilant in critically revising your *modes* of abstraction.”⁵⁹

The mode of abstraction and the abstractions themselves become definitive of how existence moves from the objectified past. In *Adventures of Ideas*, Whitehead explain how these modes of abstractions operate, beginning with the abstraction of Appearance from Reality.

Whitehead describes Appearance and Reality as another set of binary opposites, but less metaphysical than the physical/mental or objective/subjective splits dealt with in the philosophy of organism. Both Appearance and Reality are concerned with the objective rather than the subjective forms of experience. Further, Whitehead notes that the relevance of these distinctions are applicable to higher phases of experience in which there is greater synthesis of experience and a higher possibility of consciousness. While he is speaking more toward human experience, he actively re-enforces that experience goes all the way down and conscious experience is a small slice of experience in the world. Reality corresponds with the data prehended in the initial physical phase of the occasion’s process. The past entities, objectified and provoking the becoming actual occasion, provide the content of Reality. Importantly, Reality is not a uniform condition, Whitehead writes, “[t]his is reality, at that moment, for that occasion.”⁶⁰ The concrescent, completed, objectively immortal actual entities as ‘objects’ are the data that is the Reality prehended and felt by the becoming actual entity as subject; Reality is particular to an instance of a becoming occasion and not a universal state.

Reality is the data for the initial phase or physical pole of the actual occasion. In the intermediate phase, this objective content is the direct or indirect source for the mental pole which brings in conceptual and propositional feelings. The mental pole integrates, intermixes,

⁵⁹ Alfred North Whitehead, *Science and the Modern World* (London: Cambridge University Press, 1925), 73.

⁶⁰ Alfred North Whitehead, *Adventures of Ideas* (New York: The Free Press, 1967), 210.

and adapts the data for its “enjoyment and purposes fulfilling the subjective aim of the new occasion.”⁶¹ The Appearance is the contrast of the content from the mental pole against the data of Reality from the initial physical pole. As Whitehead describes,

“‘[A]pppearance’ is the effect of the activity of the mental pole, whereby the qualities and coordinations of the given physical world undergo transformation. It results from the fusion of the ideal with the actual: - The light that never was, on sea or land.”⁶²

Both Reality and Appearance are derived from the same objective content, Reality describes how it is initially felt and Appearance accounts for how that same data is clarified, simplified, and qualified in the mode of mentality.⁶³ Human animals, Whitehead specifies, experience Appearance as dominant through conscious perception. Appearance has a clarity that obscures its derivation from Reality.⁶⁴

Appearance is abstracted from the objective data of reality. Mentality and, in the human case, consciousness simplifies and clarifies so that Appearance “has shed the note of derivation.”⁶⁵ The obscured “derivation” or abstraction of Appearance from Reality becomes a philosophical problem in that the clarity of Appearance is assumed to be the base of experience. Whitehead disagrees, “[a]s soon as clarity and distinctness are made the test of metaphysical importance, an entire misapprehension of the metaphysical status of appearance is involved.”⁶⁶ Situated in the larger processual model, the Appearance as a final concrescent component of an actual entity become the Reality of the subsequent actual entities that prehend it.

⁶¹ Ibid.

⁶² Ibid., 211.

⁶³ Gaskill, “The Habit of Art: Whitehead, Aesthetics, and Pragmatism,” 183.

⁶⁴ “[Appearance] possesses a clear distinctness, which is absent from out vague massive feeling of derivation from out actual world.” (AoI 212)

⁶⁵ Whitehead, *Adventures of Ideas*, 212.

⁶⁶ Ibid.

The relation of the contrasts between Appearance and Reality is where we find the concepts of Truth and Beauty. Appearance and Reality are the “properties of objective data” while Truth and Beauty relate to the “qualifications of subjective forms.”⁶⁷ Truth and Beauty, as qualifications, are “the great regulative properties in virtue of which Appearance justifies itself to the immediate decision of the experient subject.”⁶⁸ Whitehead describes Truth as “the conformation of Appearance to Reality.”⁶⁹ When the abstraction of Appearance and the data of Reality invoke the same partial pattern, they exhibit a truth-relation - “they interpret each other.”⁷⁰ While Truth describes the conformation of the same pattern between Appearance and Reality, this is not a duplication; there is a “re-adjustment” of values in the process of abstraction that creates “a real fact tinged with Appearance.”⁷¹

Truth is contained in the idea of Beauty, but Whitehead writes “that Beauty is a wider, and more fundamental notion than Truth.”⁷² Where Truth is described as the conforming of patterns between Reality and Appearance, “Beauty is the internal conformation of various items of experience with each other, for the production of maximum effectiveness.”⁷³ Beauty fosters intensity through “the mutual adaptation of the several factors in an occasion of experience.”⁷⁴ Whitehead provides classification of minor and major types of Beauty, but generally, instances of Beauty are characterized by a lack of inhibiting feelings so that the harmonies and intensities of the data can come together without limiting one another. Additionally, new contrasts may be introduced which further the harmony of the pattern. Whitehead writes, “Thus the parts

⁶⁷ Gaskill, “The Habit of Art: Whitehead, Aesthetics, and Pragmatism,” 184.

⁶⁸ *Ibid.*, 241.

⁶⁹ *Ibid.*

⁷⁰ *Ibid.*, 242.

⁷¹ *Ibid.*, 242-243.

⁷² *Ibid.*, 265

⁷³ *Ibid.*

⁷⁴ *Ibid.*, 252.

contribute to the massive feeling of the whole, and the whole contributes to the intensity of feeling of the parts.”⁷⁵

This is not to imply that all intense feelings contain the characteristic of Beauty. Beauty entertains Harmony, while an intense experience without Harmony is Destructive and potentially Evil; “‘destruction as the dominant fact in the experience’ is the correct definition of evil.”⁷⁶ Chaos, on the other hand, is not necessarily Evil, but can be part of Harmony. “The right chaos, and the right vagueness, are jointly required for any effective harmony...Thus chaos is not to be identified with evil; for harmony requires the due coordination of chaos, vagueness, narrowness, and width.”⁷⁷ That said, Harmony and Beauty can still risk becoming stale, as “even perfection will not bear the tedium of indefinite repetition.”⁷⁸

Whitehead describes perfected Beauty as equivalent to perfected Harmony, in which perfection is the absence of inhibiting feelings. He further breaks down inhibition into two forms, “anaesthesia” and “aesthetic destruction.”⁷⁹ Inhibition as anaesthesia is equated to a negative prehension, in which a feeling is inhibited in that it is not included in experience, though under difference circumstances could be included as data. In the case of aesthetic destruction, the feeling is included but it prevents other feelings from attaining their appropriate strength.

Whitehead writes,

“[Aesthetic destruction] is the feeling of evil in the most general sense, namely physical pain or mental evil, such as sorrow, horror, dislike... The subjective experience of aesthetic destruction will be termed a ‘discordant feeling’...A complex datum is ‘objectively discordant’ when among the type of percipients in question, it will normally produce discordant feeling.”⁸⁰

⁷⁵ Ibid.

⁷⁶ Ibid., 259.

⁷⁷ Whitehead, *Process and Reality: An Essay in Cosmology*, 112.

⁷⁸ Whitehead, *Adventures of Ideas*, 258.

⁷⁹ Ibid., 256.

⁸⁰ Ibid., 256-257.

Whitehead does not describe any “complex datum” as objectively beautiful, despite his examples of sunsets and architecture. However, among sets of particular percipients, data can be considered ‘objectively discordant.’ Discord is in opposition with perfection, increased discord corresponds to less perfection. Perfection, for Whitehead, is not always the ideal as “even perfection will not bear the tedium of indefinite repetition.”⁸¹ Discord is not opposed to Beauty, as various perfections can contrast each other discordantly or the introduction of discord can break up tedious perfection; “[t]hus the value of Discord is a tribute to the merits of Imperfection.”⁸²

The role of aesthetics is central to Whitehead’s philosophy with Beauty as the ultimate goal. Whitehead writes,

“The teleology of the Universe is directed to the production of Beauty. Thus any system of things which in any wide sense is beautiful is to that extent justified in its existence. It may however fail in another sense, by inhibiting more Beauty than it creates. Thus the system, though in a sense beautiful is on the whole evil in that environment.”⁸³

In *Without Criteria*, Steven Shaviro discusses how Whitehead’s aesthetics of beauty can be off-putting in a time when ethical concerns are more predominant. Beauty, in Whitehead’s description, is taken as ‘old-fashioned’ and does not stand up to the conversation of Art and aesthetics that has continued since Whitehead’s publication. Social and political definitions of beauty and their effects, as well as the commodification of beauty are not accounted for in Whitehead, whose own preferences tend toward romantic poetry and 19th century art.⁸⁴ In Shaviro’s reading, Beauty is “entirely generic” as it applies throughout existence without

⁸¹ Ibid., 258.

⁸² Ibid., 257.

⁸³ Ibid., 265.

⁸⁴ Shaviro, *Without Criteria: Kant, Whitehead, Deleuze, and Aesthetics*, 153-155.

privilege to any society or political economy.⁸⁵ As such, it not particularly subversive. Shaviro writes, “At the very least, Whitehead’s aestheticism is radical enough that it nudges and cajoles us away from the complacencies and satisfaction of commodity culture” through his advocacy of the social value of discord.⁸⁶ In my reading, discord has more potential than a nudge.

Steve Odin’s work, *Tragic Beauty in Whitehead and Japanese Aesthetics*, casts Beauty, as just that, tragic. The processual nature of the system toward creative advance requires becoming and perishing. All the achievement of beauty in becoming perishes, tragically. Odin views the universal aim toward beauty as Whitehead’s attempt “to overturn nihilism and counter the fallacy of vacuous actuality.”⁸⁷ Thus the mortality and finitude that characterizes process makes the goal of beauty a tragic one. As Whitehead writes at the end of *Adventures of Ideas*, “At the heart of things, there are always the dream of youth and the harvest of tragedy. The Adventure of the Universe starts with the dream and reaps tragic Beauty.”⁸⁸ Brian Henning argues that the definition of Beauty in Whitehead’s work exceeds the everyday conception of the term. Hennings proposes the achievement of Beauty as a balance. He writes, “every process aims at the achievement of beauty in the sense that it aims at achieving an ideal balance between *harmony...and intensity... In a sense, there is no strictly unbeautiful experience.*”⁸⁹

Thankfully, for the purposes of this chapter, there is no need to determine the ultimate aim of the universe or its meaning. The purpose of this reading of Beauty is to illuminate the difficulty in ‘renovating’ aesthetic terminology to understand Whitehead’s ‘generic’ approach to describing experience for subjects that are not exclusively human. The different opinions of

⁸⁵ Ibid., 155.

⁸⁶ Ibid., 158.

⁸⁷ Steve Odin, *Tragic Beauty in Whitehead and Japanese Aesthetics* (London: Lexington Books, 2016), 258.

⁸⁸ Whitehead, *Adventures of Ideas*, 296.

⁸⁹ Brian G. Henning, “Process and Morality,” in *Handbook of Whiteheadian Process Thought: Volume 1*, ed. Will Desmond and Michel Weber (Frankfurt: ontos verlag, 2008), 222.

Whitehead's intent in building out these concepts each offer valuable insights to the feelings his text develops in its readers. In my reading, the power of this approach to the aesthetics of experience is that it is not built with the intent to make a specific political or ethical claim. A generic approach is necessary to rethink modes of abstractions and habits of thought that construct our viewpoints in predicable ways and to predictable ends.

In this section, I have outlined the two approaches to the aesthetic content in Whitehead's philosophy, as a general dimension of all experiences of becoming through sense perception and as the orientations and pattern of data in abstractions.

5.3 Dewey

In this section, I want to explore compatible ideas from the aesthetics of John Dewey to round out a process aesthetics. In doing so, I do not intend to reduce the aesthetic experience and enchantment into synonymous terms. I want to show how they evoke similarities in each other. John Dewey's work, *Art as Experience*, offers a description of aesthetic experience that can be read alongside Whitehead as a supplementary point of view that offers more specific engagements with the human aesthetic experience. Dewey, along with Whitehead, sees the aesthetic as a component of whole continuum of experience and does not limit it just humans.⁹⁰ In *Art as Experience*, Dewey focuses on descriptions of the aesthetic experience as a component of modern human life with a focus on the arts. Without the considerations of metaphysics and

⁹⁰ Sehgal, "Aesthetic Concerns, Philosophical Fabulations: The Importance of a 'New Aesthetic Paradigm,'" 120. Bennett also utilizes the work of Dewey in *Vibrant Matter*, not in terms of his aesthetics but as to advance her view of politics as an ecosystem. She writes, "Dewey presents a public as a confederation of bodies, bodies pulled together not so much by choice (a public is not exactly a voluntary association) as by a shared experience of harm that, over time, coalesces into a "problem." Dewey makes clear that a public does not preexist its particular problem but emerges in response to it." She notes Dewey views humans as central actors to the public environment, which includes nonhuman actors. Though he "flirts with a nonhuman conception of action" Bennett does not feel he qualifies as a full-fledged vital materialist. (VM 101-102)

cosmology seen in Whitehead, Dewey is not averse to political commentary that helps to contextualize his concepts and situate them in modern lived experience.

Like Whitehead, Dewey's version of experience is aligned closely with William James in content, terminology, and the flow of experience. Experience, for Dewey, is continuous "because the interaction of the live creature and environing conditions is involved in the very processes of living."⁹¹ As living beings in the world, we are experiencing our surrounding within certain elements of internal and external chaos that often leaves experiencing underdeveloped and lacking fulfillment. Dewey refers to this kind of experience with James's metaphor comparing conscious experience to a bird alternating between flights and perches. Dewey writes: "Experiencing like breathing is a rhythm of intakings and outgiving. Their succession is punctuated and made a rhythm by the existence of intervals, periods in which one is ceasing and the other is inchoate and preparing."⁹²

Outside of the typical stream of constant experiencing, is "*an* experience." *An* experience differs in that it is complete and in itself bound from other experiences in the flow of experiencing. There is a unifying quality or dominant character that tends to provide a reference for *an* experience, i.e. *the* quarrel, *the* storm, *that* perfect meal in Paris.⁹³ An experience has a beginning and fuses together at the end; it flows from part to successive part and "because of continuous merging, there are no holes, mechanical junctions, and dead centers when we have an experience. There are pauses, places of rest, but they punctuate and define the quality of movement. They sum up what has been undergone and prevent its dissipation and idle

⁹¹ Dewey, *Art as Experience*, 36.

⁹² *Ibid.*, 58.

⁹³ *Ibid.*, 38.

evaporation.”⁹⁴ There is an emotional quality that unifies the experience, however, “there are no separate things called emotions in it.”⁹⁵

The previous chapters have discussed Whitehead’s formulation of the subject-object relationship, with the notable aspect of the temporalization of object as past and subject as present, as well as the reconfiguration of subject-object as recipient-provoker. For Dewey, the “objects of art are expressive, they communicate.” The subject or receiver of the experience must surrender something to the experience, or “yielding of self,” that involves an investment of energy rather than a passive reception; “We must summon energy and pitch it at a responsive key in order to *take* in.”⁹⁶ Like Whitehead, Dewey’s relation of the subject and object distributes action across both roles in an active experience.

For Dewey as well as Whitehead, the “germ of the aesthetic” is already present in experience, but certain circumstances throw the aesthetic elements into greater relief, becoming a more dominant characteristic of the experience. Dewey writes, “the esthetic is no intruder in experience from without, whether by way of idle luxury or transcendent ideality, but that it is the clarified intensified development of traits that belong to every normally complete experience.”⁹⁷ When the aesthetic elements of experience are heightened, Dewey describes the distinguishing traits of “resistance and tensions” and a “inclusive...fulfilling, consummating” conclusion.⁹⁸

Dewey outlines two modes of experience, recognition and perception, that dictate the degree to which experience can develop. “Bare recognition” as Dewey explains, is the early phase of perception. Rather than developing freely into the emotional realm of perception,

⁹⁴ Ibid.

⁹⁵ Ibid., 43.

⁹⁶ Ibid., 55.

⁹⁷ Ibid., 48.

⁹⁸ Ibid., 58.

recognition relies on memory, stereotypes, or applying “a proper tag or label” to a component of experience.⁹⁹ Parts of experience are recognized and categorized, but not thoroughly experienced. This is rote everyday behavior, “as we recognize a man on the street in order to greet or to avoid him, not as to see him for the sake of seeing what is there.”¹⁰⁰ Perception, on the other hand, is more engaged and emotional: “There is an act of reconstructive doing, and consciousness becomes fresh and alive.”¹⁰¹ This component of *doing* and what Dewey calls, *undergoing*, is enacted by the creator of an aesthetic object as well as patterned into the experience of the perceiver who re-composes the aesthetic object in an energetic and emotional exchange that characterizes the aesthetic experience.¹⁰²

Returning to Bennett’s concept of enchantment, several parallels emerge with the aesthetic experience outlined thus far. While it is important to continue to emphasize that for Whitehead and Dewey the aesthetic is a component of experience that is not just limited to humans, Bennett’s formulation of enchantment is from a human perspective (while an avowed non-anthropocentrist, Bennett grants vibrancy to objects her argument for enchantment is devoted to human subjects) and from here forward the discussion will imply human experience with the understanding that process concepts extend more broadly across breadth of experience. Enchantment “engenders a feeling of fullness and plentitude” bringing about a “new circuit of intensities” and “an uneasy combination of charm and disturbance” for Bennett.¹⁰³ I argue that while not entirely synonymous, these characteristics are also exemplified in the aesthetic experiences developed by Dewey. The processes of doing and undergoing that Dewey describes

⁹⁹ Ibid., 54-55.

¹⁰⁰ Ibid., 54.

¹⁰¹ Ibid., 54.

¹⁰² Ibid., 45-46.

¹⁰³ Bennett, *The Enchantment of Modern Life: Attachments, Crossings, and Ethics*, 104.

as transforming “resistance and tensions...into a movement toward an inclusive and fulfilling close” resonates with the break from normal experience described by Bennett.¹⁰⁴ Neither are expected to be entirely pleasant and docile but heightened by anticipations and intense presence.

Bennett and Dewey bring out similar elements in each other, but I want to link back to Whitehead’s descriptions of Discord. The disturbance of Discord can be seen in Bennett’s description of enchantment as the interruption of normal modes of experience. Yet Whitehead takes Discord and shows how it activates more experience. Where Beauty and Harmony strengthen and intensify factors of experience, discordant experiences move. Whitehead writes, “Progress is founded upon the experience of discordant feelings. The social value of liberty lies in its production of discords.” Discord is “a necessary factor from in the transition from mode to mode... Discord may take the form of freshness or hope, or it may be horror or pain.”¹⁰⁵ Discord is frustrating, but it is also the preferred alternative “to a feeling of slow relapse into general anaesthesia, or into tameness...”¹⁰⁶ Discord moves and transitions abruptly away from stasis and ‘outworn’ modes. The concept of enchantment in Bennett relies on some element of Discord to bring attention to the enchantment of life. Yet, Bennett’s uses for enchantment as restorative and endearing one to the world limits the potentiality of the discordant shift to alter experience and modes of thought.

5.4 Cultivation

Like Bennett, Whitehead and Dewey want to promote a renewed aesthetic openness to world. They all attach value to the aesthetic or enchanted experience and advocate for increasing

¹⁰⁴ Dewey, *Art as Experience*, 58

¹⁰⁵ Whitehead, *Adventures of Ideas*, 266.

¹⁰⁶ *Ibid.*, 263.

our awareness of the potentiality for these experiences. For Bennett, this is an affective project, training sensibilities and quieting the critical mind. Dewey and Whitehead, are not constructing alternative narratives to highlight existing enchantment, but locating the systems and habits of thought which diminish aesthetic and enchanting possibilities. Whitehead argues for the cultivation of aesthetic habits as a response to limiting modes of thinking and engagement, without assuming a divide between affect and thought.

In *Science and the Modern World* in a passage devoted to education and social progress, Whitehead writes, “[w]hat we want is to draw out habits of aesthetic apprehension.”¹⁰⁷ The reason it is necessary to cultivate these habits is that the specialization of education, often professional training to do a job, neglects certain types of learning for practical knowledge. Whitehead wants to cultivate what he calls, “the habit of art,” but this is not necessarily Art in its proper sense.¹⁰⁸ Whitehead continues:

“But in this sense, art concerns more than sunsets. A factory, with its machinery, its community of operatives, its social service to the general population, its dependence upon organizing and designing genius, its potentialities as a source of wealth to the holders of its stock is an organism exhibiting a variety of values. What we want to train is the habit of apprehending such an organism in its completeness.”¹⁰⁹

The “organism in its completeness” is not offered to be seen in and of itself, especially in late capitalism. He cites the political economics of Adam Smith as building a set of abstractions that became so central to modern thinking that it, “de-humanized industry” and warns that modern

¹⁰⁷ Whitehead, *Science and the Modern World*, 248.

¹⁰⁸ He writes, “What I mean is art and aesthetic education. It is, however, art in such a general sense of the term that I can hardly like to it by that name. Art is a special example... art concerns more than sunsets.” But art does not *exclude* sunsets, or factories. Art is characterized in this passage as that which exhibits vivid values. (SMW 248-249)

¹⁰⁹ *Ibid.*, 249

science risks the same dependency on a set of abstractions.¹¹⁰ What is not accounted for by the current accepted set of abstractions is ‘neglected.’¹¹¹

To apprehend the completeness of the organism, means to understand its relations and its environment with diligence against dependence on the abstractions through which we might discard the remainder. (SMW 248) This is an active pursuit. Whitehead explains,

“You will not obtain the apprehension without the initiative, or the initiative without the apprehension. As soon as you get toward the concrete, you cannot exclude action. Sensitiveness without impulse spells decadence, and impulse without sensitiveness, spells brutality.”¹¹²

While Bennett’s enchantment can energize and refuel one for action, Whitehead’s approach to aesthetics demands it, lest one slide into decadence. The cultivation of a curious, enchanted, aesthetically driven disposition for Whitehead is a first step to overcoming abstractions and taking action. The aesthetic, in this formulation as well, is not to be enjoyed at the expense or denial of the intellectual, they are inseparable, elevating and limiting one another.

Dewey’s concern for the cultivation of aesthetic experience begins with his description of the means by which art and the aesthetic are distanced from daily life. Modern life has compartmentalized art as Fine Art, which dictates the aesthetic and aesthetic experience in the trappings of museums and institutions, stripping everyday life of the capacities for aesthetic enjoyment, “driving away esthetic perceptions that are necessary ingredients for happiness, or reducing them to the level of compensating transient pleasurable excitations.”¹¹³ In this way, Dewey is initially closer to the group of authors that Bennett categorizes as presenting the world as less enchanted than it once was and equates aspects of modernity with the disenchantment of

¹¹⁰ Ibid.

¹¹¹ Ibid., 250.

¹¹² Ibid., 249.

¹¹³ Dewey, *Art as Experience*, 9.

experience. Neither long ago nor far away, Dewey explains, there exist “peoples for whom everything that intensifies the sense of immediate living is an object of intense admiration.”¹¹⁴ Clothes and bodily ornamentation provided aesthetic pleasure “without the vulgarity of class exhibitionism that attends their analogues today” as well as household items, paintings, and performance arts that brought aesthetic enhancement to daily life. However, the enchanting and intensifying aspects of these objects and performances have been distanced from everyday experience. Dewey cites several reasons for the removal of art from daily life, namely, capitalism, nationalism, and imperialism.

Nations build their global cultural capitals in halls of fine art that reflect the artistic history they and their citizens have produced as successful civilizations, but also to “exhibit their loot” in the sense of both imperialist conquest and national cultural capital.¹¹⁵ Capitalism segregates art from the population by enforcing the concept that the museums, galleries, and operas are the appropriate place for art and that art should exist in a space separated from daily life. Further, industrialization and mass production has denigrated craftwork as art objects, he writes: “Objects that were in the past valid and significant because of their place in the life of a community now function in isolation from the conditions of their origin. By that fact they are also set apart from common experience, and serve as insignia of taste and certificates of special culture.”¹¹⁶ Art becomes something less communally accessible and is instead relegated to its own specialized market that preserve its scarcity; this separation affects the economics and valuations that dictate what is included as Fine Art. In many ways Dewey argues to expand what we include as sources of aesthetic enjoyments, as part of the aim of Dewey’s project is a

¹¹⁴ Ibid., 5.

¹¹⁵ Ibid., 7.

¹¹⁶ Ibid., 8.

democratization of the arts, yet his focus is notably aligned to traditional art objects and mediums.

Dewey's critique of the forces removing art and aesthetics from daily life can provide an alternative perspective than Jane Bennett's division of enchanted or disenchanting narratives. Dewey does not imply that things themselves have become disenchanting as part of his critique, as Bennett would say of disenchanting narratives that view matter as dead, but rather that capitalism, nationalism, and imperialism prevent us from experiencing them as part of the aesthetic experience. In this way, Dewey offers a position in which the disenchanting world, like Bennett's, was never disenchanting. But Dewey takes seriously the mechanisms that reduce our ability to experience them with an aesthetic enjoyment, as opposed to dismissing them as deadening to matter or privileging the rational over the affective.

5.5 Abstractions & Capitalism

Whitehead was not a Marxist, though Isabelle Stengers suggests he might "be considered a Marxist without knowing it"; and despite the blame Dewey sets on capitalism for the alienation of the aesthetic from daily life, he was not a Marxist either.¹¹⁷ Some scholars have suggested that reading these ideas with a Marxist mindset involves taking some liberties, but the risks involved in extending Whitehead's work in this direction is worth taking. I follow the work the Anne Fairchild Pomeroy and Michael Halewood to explore how Whitehead's abstraction and misplaced concreteness can be seen as fundamental elements of the capitalist system. It is

¹¹⁷ Isabelle Stengers, *Thinking with Whitehead: A Free and Wild Creation of Concepts*, ed. Michael Chase (Harvard University Press, 2011), 136.

important to note, as Halewood does in *A.N. Whitehead and Social Theory*, that from the process perspective capitalism is not a real thing, but rather an adverbial manner of being. He writes:

“[I]n a technical, Whiteheadian sense, capitalism does not exist;... Instead it is constituted in and through the manner of relations. Hence, process, facticity, potentiality, limitation, production are all interlinked as operations of the ongoing ever-renewing dynamics which occur in a specific manner: the manner of capitalism. To claim that capitalism has no substantial existence is not to deny or lessen its pernicious effects. Rather it is to point to the insidious way in which it inhabits, inheres in, proscribes and prescribes contemporary existence.”¹¹⁸

This becomes important to remember, that while capitalism is a manner of doing, there are also other manners of doing. As is often repeated, “It is easier to imagine the end of the world than the end of capitalism.”¹¹⁹ This statement is indicative of the limitation of imagination that reinforces and reproduces the manner of capitalism in daily life.

In the previous section, abstraction was discussed as the basis of thought and a mode of perception that requires constant revision. Yet Whitehead does not limit abstraction to the mental process of thought, but “a necessary element of material existence.”¹²⁰ Whitehead writes, “no actual thing is ‘objectified’ in its ‘formal’ completeness. Abstraction expresses nature’s mode of interaction and is not merely mental. When it abstracts, thought is merely conforming to nature – or rather, it is exhibiting itself as an element in nature.”¹²¹ The model of perception that Whitehead outlines demonstrates that the process of objectification is abstractive in itself.

Alberto Toscano’s analysis of Marx positions abstractions as central to the Marxist understanding of capitalism. Toscano brings together the work of Whitehead and Alfred Sohn-

¹¹⁸ Michael Halewood, *A. N. Whitehead and Social Theory* (London: Anthem Press, 2011), 149.

¹¹⁹ Fredric Jameson, “Future City,” *New Left Review* 21 (2003): 65–79, 76.

¹²⁰ Halewood, *A. N. Whitehead and Social Theory*, 148.

¹²¹ Alfred North Whitehead, *Symbolism, Its Meaning and Effect*, *ACLS Human* (Fordham University Press, 1985), 25-26.

Rethel on abstraction to advocate for utilizing these thinkers to better understand the ‘culture of abstraction’ created by capitalism and “seize the true root of abstraction in social practice.”¹²²

To begin, how does abstraction function as part of capitalism and why is it important? As Michael Halewood explains, Marx identifies a rhythm and process of the capitalist cycle that he explores in *Capital* starting with the concept of the commodity. “[Marx] is always aware of the tension that inheres in this analysis as, in a sense, he is falsely rendering the commodity as an object, as a stable thing, when he is well aware that it is merely one element within the complex process of capitalism. Hence, the analysis of the commodity-as-a-thing is an abstraction from the reality which is the ongoing process of capitalism.”¹²³ Both material and ideal abstractions are related and interconnected. As Halewood points out, Whitehead and Sohn-Rethel (to a certain extent) argue that material and ideal abstraction are not ontologically different though the distinction between them is relevant, and importantly, the difference between them is another form of abstraction.¹²⁴

Mental abstractions, or “abstraction in the head” as Halewood refers to them, like any abstraction do not convey the full picture or reflect the complex set of relations that create them. Abstractions obscure the relations that enable them, and when unchecked, can appear to be a concrete thing. Halewood uses Marx’s example of “population” to illustrate how, as an abstraction, a “population” seems like a concrete reality. But a population, Halewood writes, “is problematic in so far as it does not indicate that which enables it to arise, supports it, as well as that which it requires in order to appear, namely its relations to other entities (and other

¹²² Alberto Toscano, “The Culture of Abstraction,” *Theory, Culture & Society* 25, no. 4 (2008): 57–75, <https://doi.org/10.1177/0263276408091983>, 73.

¹²³ Halewood, A. N. *Whitehead and Social Theory*, 150.

¹²⁴ *Ibid.*, 152.

concepts).”¹²⁵ Depending on these mental abstractions is not the problem, but assuming they are concrete on their own, without interrogation, is what Whitehead calls the fallacy of misplaced concreteness, where an abstraction is taken for the real. Both Marx and Whitehead argue for greater examination of the construction and operation of abstractions. Halewood writes, “The fault of much political economy, according to Marx, is that it has taken for concrete that which is an abstraction. It has therefore misrecognized the ontological status of its foundations.”¹²⁶ Pomeroy extends this further to argue that capitalism requires living in a state of misplaced concreteness. She writes, “mistaking the abstract for the concrete is no accidental error and the neglect of awareness of the degree of its abstraction is no mere oversight. The logic of valorization of value absolutely requires it.”¹²⁷ Abstractions and value are deeply connected.

For Marx, commodities have two types of value, use value and exchange value. The use value refers to an object’s utility in a physical sense to meet a specific human need or want, or its usefulness to fulfill a need. The exchange value is an abstraction of the human labor that produced the object, or, as Marx writes, “all commodities are merely definite quantities of congealed labour-time.”¹²⁸ Rather than simply an ideal or mental “abstraction in the head,” Halewood argues, labor is both a mental and material “abstraction in reality.”¹²⁹ Marx describes, “this abstraction of *labour as such* is not merely the mental product of a concrete totality of labours. Indifference toward specific labours corresponds to a form of society in which individuals can with ease transfer from one labour to another, and where the specific kind is a matter of change for them, hence of indifference.”¹³⁰ This means that labor does not refer to a

¹²⁵ Ibid.

¹²⁶ Ibid., 153.

¹²⁷ Anne Fairchild Pomeroy, *Marx and Whitehead* (Albany: State University of New York Press, 2004), 157.

¹²⁸ Karl Marx, *Capital: A Critique Of Political Economy*, Trans. Samuel Moore and Edward Aveling, Eds. Frederick Engels, 1887, 29.

¹²⁹ Halewood, A. N. *Whitehead and Social Theory*, 155.

¹³⁰ Karl Marx, *Grundrisse*, trans. Martin Nicolaus (Penguin Books, 1973), 37.

particular action, like ploughing, cooking, or data-entry. ‘Labor as such’ is devoid of any kind of specific action and is generalized. In this way, “individuals can be moved from one task to another, laid off, redeployed, retrained, required to “multitask” precisely insofar as they embody *labour as such*. This is then an abstraction in the head but also an abstraction in reality.”¹³¹

Marx writes, “[I]ndividuals are now ruled by *abstractions*, whereas earlier they depended on one another. The abstraction, or idea, however, is nothing more than the theoretical expression of those material relations which are their lord and master.”¹³² Being ruled by unchecked abstractions, living in misplaced concreteness, further removes the concrete from our experience. Pomeroy argues that this situation, which neglects the processual being through lived misplaced concreteness, is alienation and estrangement.¹³³ For Whitehead, the analysis and explanation of the abstract is the sum purpose of philosophy. From the cultivation of habits to increase one’s capacity to ‘apprehend the organism in its completeness’ to the construction of a metaphysical system, the central aim remains. He writes, “The true philosophic question is, How can concrete fact exhibit entities abstract from itself and yet participated in by its own nature? In other words, philosophy is explanatory of abstraction, and not concreteness.”¹³⁴

This section has outlined some points of resonance between Marx and Whitehead. Many have argued for and against the compatibility of their thinking, and there is much more to explore between them. As Bennett (and new materialism more generally) has been criticized by Marxists for ignoring, dismissing, and avoiding engagement on the exploitative nature of capitalism in favor of enchantment, vital objects, non-anthropocentrism, and flat ontologies, I feel it is necessary to position Marx and Whitehead in relation to each other. While there is no

¹³¹ Halewood, A. N. *Whitehead and Social Theory*, 156.

¹³² Marx, *Grundrisse*, 95.

¹³³ Pomeroy, *Marx and Whitehead*, 157

¹³⁴ Whitehead, *Process and Reality: An Essay in Cosmology*, 20

smooth path to synthesize Marxism and process philosophy, there are many pressing reasons to develop both modes of thinking together. Pomeroy asserts that process philosophy offers a valuable perspective through which we can better understand capitalism and its effects. She writes,

“Only a philosophical system that holds the primacy of relationality to be constitutive of all being(s), that holds such relationality to be the result of self-productive and world-productive activity of each individual, that understands levels of being as differentiated by their dominant modes mediating relational productivity – only such a system can look on the reality of the relations of capitalism and see the damage inflicted by such relations upon relational being by way of the mode of human productivity that produces them. Only the processive viewpoint can be appropriately horrified at the loss of creating novelty for the human form of being, that being for whom it is most essential... As capitalism operates, the world grinds toward stagnation.”¹³⁵ (M&W 146)

5.6 Commodities

In this section, I take the process-influenced understanding of Marx presented by Halewood and Pomeroy to read it against Bennett’s argument for the enchanting capacities of commodities in *The Enchantment of the Modern Life*. In the chapter “Commodity Fetishism and Commodity Enchantment,” Bennett describes her enchantment with a GAP commercial depicting a group of attractive young people in khakis swing dance in an open white space. Using time slicing or bullet time filming techniques, the camera freezes on the dancers midjump while panning across the scene. The animation and vitality of the music, dancers, and even the pants themselves are a site of enchantment for Bennett, and also importantly, an entry point into a larger discussion of enchantment under capitalism and commodity fetishism.

¹³⁵ Pomeroy, Marx and Whitehead, 146.

For Marx, commodity fetishism obscures the exploitative means embedded in and by which goods are produced and reconfigures them as objects of desire with exchange value abstracted away from the relations that produce them. The commercials, and advertisement more generally, are an integral part of the process of abstracting goods from the sweat shops in which they are produced and grafting them onto and into vibrant experiences that consumers desire. Bennett's argument does not entirely ignore the environmentally and socially disastrous consumer culture, but it does side-step it. She writes that she does "not, however, seek a world without GAP ads, or moralize against the commodity form or technologized art, or disqualify minor displays of consumption as a source of pleasure, creativity, self-expression, and enchantment."¹³⁶ Rather, she looks for potentials for positive ethical engagement incidental to capitalism. I have no interest in rescuing GAP ads for their enchantment potential, or mining capitalism for incidental delights.

For Marx, the process of exchange-value objectifies and obscures labor and laborers producing a commodity resulting in the determination of its value in terms of other commodities. This process conceals power relations, but of particular interest to Bennett, it also performs an "unnatural animation of artifacts."¹³⁷ Humans are deadened through the processes of capitalism and objects are animated, "empowered," and imbued with their own affective powers to attract desire. To Bennett, Marx is describing an "alchemy of exchange-value" that denies the life of object and "is too dismissive of animism."¹³⁸ Another reading of this, that does not deny the ontological status of things, is to understand this not a theft of human vitality for things, but a

¹³⁶ Bennett, *The Enchantment of Modern Life: Attachments, Crossings, and Ethics*, 115.

¹³⁷ *Ibid.*, 117.

¹³⁸ *Ibid.*

double-act of misplaced concreteness that denies the object of its interconnect processual nature.

At the first instance of misplaced concreteness, Pomeroy describes:

“There is the commodity exchange that requires treating commodities as mere objects embodying past labor. Because all ontological being is both physical and conceptual, this is an abstraction even on the level of “things.”... The natural world around us becomes in capitalism populated by mere objects, mere stand-ins for value, mere mans to capitalism’s valorization.”¹³⁹

Rather than taking dead matter and animating it with human labor, Pomeroy shows through a processual perspective that affective nature of objects is erased and replaced through misplaced concreteness. In the second of instance of misplaced concreteness, echoing Dewey’s concern for the removal of the aesthetic from daily life, Pomeroy argues, that through commodification we disconnect objects from their origins; “we devalue beauty for its own sake.”¹⁴⁰

Moving on to Horkheimer and Adorno, Bennett finds more resistance to the idea of lively objects. The illusion of animated matter operates at the expense of real human energy inside of capitalism, of which there is no outside. Further, for Adorno and Horkheimer, the political power of art as critique is has been colonized by the culture industry. Capitalism has infected the arts and reduced creativity to a “sophisticated science of entertainment in the service of squeezing out more consumption.”¹⁴¹ The science of entertainment excites with the intent to stupefy and deaden society. In Bennett’s reading, Horkheimer and Adorno map out the entertainment experience as both an experience of bodily affect and mind-numbing thought control.¹⁴² In splitting this experience, Bennett notes that they lean more toward the mental manipulation line

¹³⁹ Pomeroy, Marx and Whitehead, 158.

¹⁴⁰ Ibid., 158.

¹⁴¹ Bennett, *The Enchantment of Modern Life: Attachements, Crossings, and Ethics*, 122.

¹⁴² Ibid., 124-125.

of thought than following the affective thread, leaving out agential possibilities for the embodied consumers. She writes,

“For, if the industry operates upon us by means of our affective participation in it, this means that its control over us is simultaneously deep and unpredictable. And that is because affect itself is both deep and never entirely predictable in its movements. This element of unpredictability also opens up the possibility that commodities operate not only with mind-dulling (bare) repetition but also with an ethic-enabling (spiral) repetition...It opens up the possibility that commercial items can enchant and not just mystify.”¹⁴³

The affective component of the experience opens up the experience of the commodity, or the advertisement, or the swinging khakis to unpredictable possibility. Again Bennett wants to focus on the affective possibility and avoid critical engagement. Which seems directly to Adorno and Horkheimer’s point of the intent of this entertainment. Both Marx and Adorno and Horkheimer pose the commodification process and the culture industry, respectively, as reproducing sameness.

To view commodification and culture as bare repetition, per Bennett’s engagement with Deleuze, demands a mechanistic control not just of production but of use. This is too steep an expectation for Bennett. If the production of perfect copies was not difficult enough, the lives of objects and their uses in the world offers too many possibilities for novelty to attach.¹⁴⁴ Bennett argue that the possibility of something other than the bare repetition of exploitative capitalism is reason enough to the explore the affective modes in which its products can be enjoyed.

For Whitehead, every actual entity is novel, but that does not mean that repetition does not exist. In line with the complexity of the occasion, it “originates novelty to match the novelty of the environment.”¹⁴⁵ When the environment is hospitable to sameness, the habits created will

¹⁴³ Ibid., 125-126.

¹⁴⁴ Ibid., 126-127.

¹⁴⁵ Whitehead, *Process and Reality: An Essay in Cosmology*, 102.

continue until disrupted. Pomeroy argues, “[a]s we create the world as commodified and as reiterative, so we create ourselves as commodified and reiterative as well...as we produce in capitalism, novelty and human intensity are slowly ebbing, aesthetic patterns are enfeebled, sheer stability seems to dominate...we are deteriorating the environment from which emerges our own creativity.”¹⁴⁶

5.7 Conclusions

The affective enchantment that Bennett offers is intended to reveal that the world never was disenchanted and that objects, from khakis to bottle caps, are agential and vibrant relational components of the human/nonhuman assemblage of which humans are part, but not the center. For Bennett, micro-dosing enchantment and cultivating a positive affective disposition will foster human compassion and promote a view of the world as worth saving. In the process, she denies critical thought in favor of affective dispositions and refuses to engage in the politics her thought is posed to fuel. The turn to enchantment without critique runs dangerously close to the aesthetic anesthesia that Whitehead calls the “bastard substitute” for Peace.¹⁴⁷

In Whitehead’s call for the cultivation of ‘aesthetic apprehension,’ he aims for encouraging a greater capacity to see “the organism in its completeness,” affectively and critically. In doing so, one has a greater opportunity to recognize abstractions and revise the modes of thought that limit the experience of Reality in Appearance as Truth.¹⁴⁸ The importance of this is paramount, as the Appearance becomes the Reality for the next iterations of actual entities.

¹⁴⁶ Pomeroy, Marx and Whitehead, 145.

¹⁴⁷ Whitehead, *Adventures of Ideas*, 285.

¹⁴⁸ Whitehead, *Science and the Modern World*, 249.

Faced with the risk of anesthesia, the loss of Reality to Appearance, life under abstraction and misplaced concreteness, Whitehead still stands by the value of adventure and importantly, the potentially radical activation of Discord. He writes:

“Again, the value of discord arises from this importance of the forceful individuality of the details. The discord enhances the whole, when it serves to substantiate the individuality of the parts. It brings into emphatic feeling their claim to existence in their own right.”¹⁴⁹

¹⁴⁹ Whitehead, *Adventures of Ideas*, 282.

Chapter Six. Conclusions

6.0 Conclusions

This project set out to connect the process philosophy of Alfred North Whitehead with the themes of time, affect, and aesthetics present in selected texts from feminist new materialism. Specifically, Karen Barad's *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (2007), Brian Massumi's *Parables for the Virtual: Movement, Affect, Sensation* (2002), and Jane Bennett's *The Enchantment of Modern Life: Attachments, Crossings, and Ethics* (2001) and *Vibrant Matter: A Political Ecology of Things* (2010).

The purpose of this engagement was to draw on existing process-oriented themes and texts in feminist new materialism. The process thought present in these texts is most often arrived at via Deleuze, Spinoza, and Bergson. My intent was to demonstrate what could be gained, in reference to these themes and texts, by conducting a diffractive reading against, with, and alongside the philosophy of Alfred North Whitehead. While Whitehead does have a presence in the new materialist movement, interest in his work has only recently started to pique mainstream interests. Despite some mentions of Whitehead in the growing feminist new materialist literature, references are generally limited and do not demonstrate full engagement

with his philosophy and metaphysical system. More often, authors stick to the terminology and process thought of Deleuze and Guattari.

In Chapter Two of this work, I account for some of the difficulties involved in, as Isabelle Stengers says, thinking with Whitehead. The majority of Whitehead's philosophy was authored in the 1920s and 30s, when Whitehead was in his later years after a long career as a mathematician. His books ranged from exceedingly technical metaphysics to lighter forays into something like sociology. The terminology present in his texts is not conventional and his most famous book, *Process and Reality* (1929), is considered by the most generous scholars to be difficult read. Further, his concepts of a secular God and eternal objects did not find favor in post-modern turn in philosophy and his work was largely ignored by Western analytical and continental scholarship. That said, the breadth and depth of his non-substance-based philosophy and his creation of entire process metaphysical system has much to offer to today's scholarship, especially in light of the concerns and commitments of the feminist new materialist movement.

Reading Whitehead along with Karen Barad in Chapter Three, I examine the interest and importance of quantum physics to both thinkers. Barad draws on Niels Bohr for the development of her agential realist framework, while Whitehead, a mathematician, watched the develop of quantum theory and wrote an alternative theory of relativity in response to Einstein. The agential realist framework Barad authors takes seriously quantum experimentation and the language of science to pose phenomenon as the base of reality. Subject-forming boundaries are produced via agential cuts administered by apparatuses that serve to make a subject describable, but does not disentangle the phenomena from its relations. Intra-actions serve to generate agency in her ontology. I conduct a diffractive and comparative reading of Barad and Whitehead regarding their respective theories of time and endurance, to illustrate the processual of flux balanced with

endurance as present in Whitehead and not fully elucidated in Barad's framework. Further, I show the implication of these divergent view on their constructions of the subject/object distinction, as Whitehead temporalizes this distinction.

Chapter Four brings Whitehead to the 'affective turn' through Brian Massumi's work on affect. Beginning with sketch of the field of affect theory, following Eve Kosofsky Sedgwick and Adam Frank's development of affect based on the work of Silvan Tomkins and Massumi's more philosophical approach to affect informed by Spinoza and Deleuze, I outline the general critiques levelled at affect theories. In particular, I focus on the dependence on William James and scientific research on basic emotion paradigm theories to explore how Massumi positions affect as autonomous, presocial, and preconscious in order to position the body as primary and privileged in becoming. Whitehead's theory of feeling and prehensions provides compelling parallels to rethink the base on which Massumi's supporting evidence is arranged to undergird his argument. In addition, I question the delineation of consciousness presented in Massumi's work as binary conscious/unconscious compared to preliminary thought in the work of James and Whitehead that lean toward a more spectrum understanding of conscious experience.

The final chapter analyzes Jane Bennett's work on vital materialism, including her earlier text focused on enchantment as an affective means to cultivate ethical engagement with the world and how the two texts operate in tandem. Bennett advocates cultivating an open affective disposition to enchantment in order to both recognize the vitality of object and foster care toward the planet. Aligning enchantment with the aesthetic components of Whitehead, and with additional aesthetic input from John Dewey's *Art as Experience* (1934), I explore the how both thinkers apply the aesthetic functions in experience. Further, I discuss the impact of abstractions and Whitehead's commitment to avoid the fallacy of misplaced concreteness in his

aesthetics. Both abstraction and misplaced concreteness figure largely in recent works by Whitehead scholars Michael Halewood (*A.N. Whitehead and Social Theory*, 2011) and Anne Fairchild Pomeroy (*Marx and Whitehead*, 2004) in developing Whiteheadian readings of Marx and capitalist critiques. While Bennett notably avoids a critique of capitalism, she counters Marx as part of her defense of the enchantment of commodities. By bringing a process perspective to this engagement I highlight how a Whiteheadian critique of capitalism provides an alternative to Bennett's affective cultivation.

This dissertation is limited to only a few themes in Whitehead's philosophy that correspond to concerns in feminist new materialism. As Whitehead offers novel tools to interrogate binaries and dualistic thought, and rethink agency, anthropocentrism and ontology, I expect attention to Whitehead's philosophy to continue to grow. This dissertation aims to provide introductions to the way that time, feeling, and aesthetics can be utilized in broader scholarships.

Figures

Figure 3.1 Contemporaneousness in Duration¹

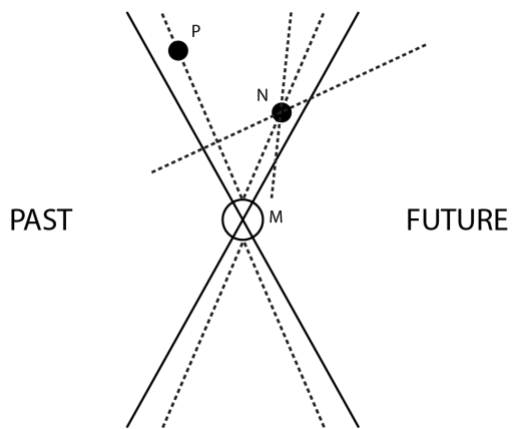
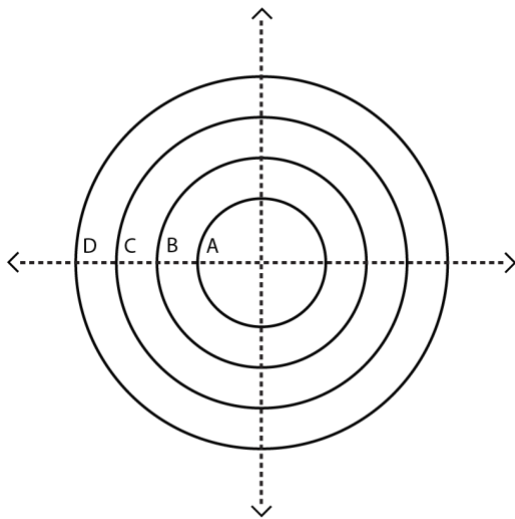


Figure 3.2 Duration as Ripple / Wave Pattern²



¹ Adapted from Sherburne, *A Key to Whitehead's Process and Reality*, 110.

² Adapted from Kraus, *The Metaphysics of Experience: A Companion to Whitehead's Process and Reality*, 23.

Figure 3.3 Two-Slit Experiment³

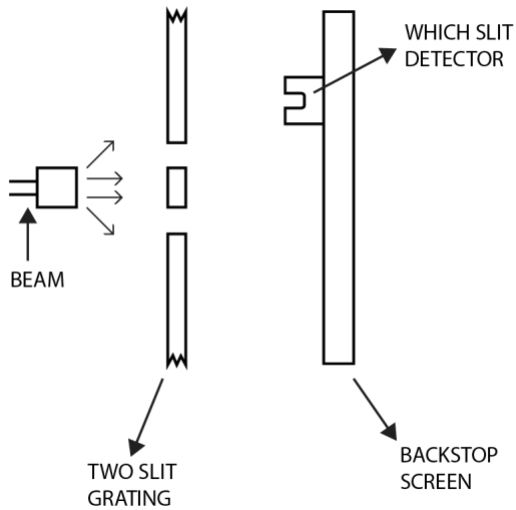
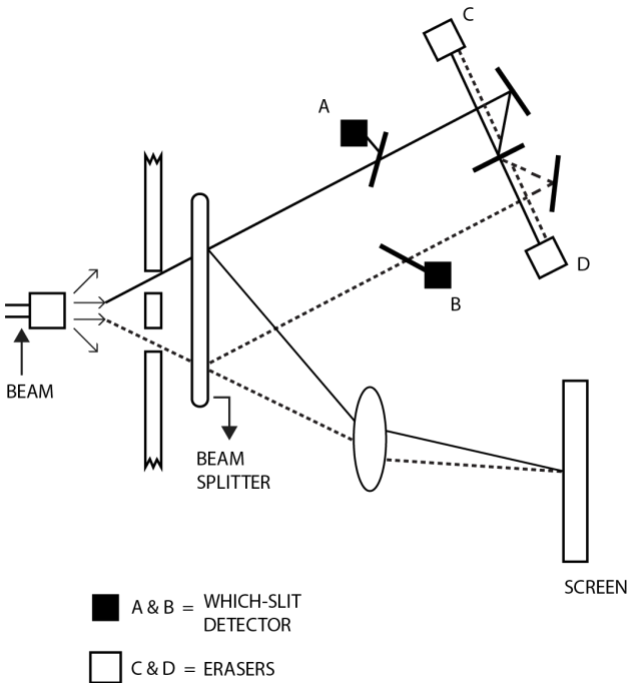


Figure 3.4 Quantum Eraser, or Delayed Choice Experiment⁴



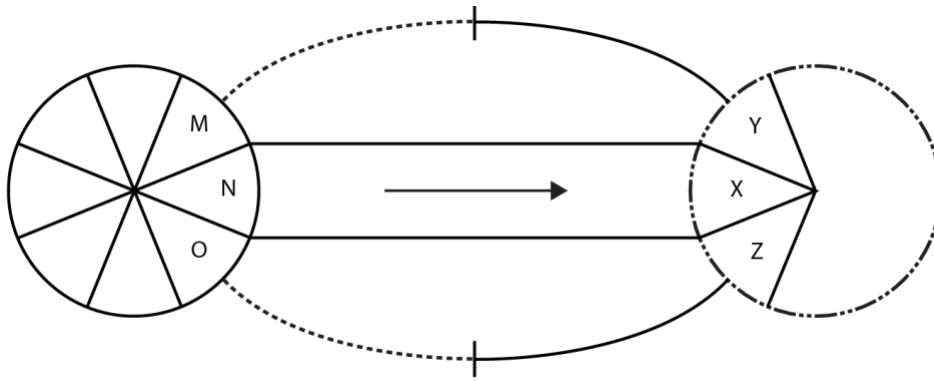
³ Adapted from Patrick Edwin Moran, *Kim Quantum Eraser Schematic*, 27 December 2007.

https://commons.wikimedia.org/wiki/File:Kim_Quantum_Eraser_schematic.svg

⁴ Adapted from inductiveload, *Two Slit Light Experiment*, 02 November 2007.

https://commons.wikimedia.org/wiki/File:Two-Slit_Experiment_Light.svg

Figure 4.1 A Simple Physical Feelings⁵



⁵ Adapted from Sherburne, *A Key to Whitehead's Process and Reality*, 10.

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