

“Sing[ing] of the Middle Way:” Michael McClure’s Venture for a New Mode of Thought Between Natural Science and Mysticism

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ABSTRACT: This article examines the epistemological concerns of Michael McClure’s poem “Double Moire for Francis Crick” (2010). Beyond showcasing McClure’s persistent interest in the natural sciences as well as in the Chinese and Japanese mystical traditions, this poem lyrically appropriates the physical phenomenon of the moiré effect and thereby exemplifies how a cooperation between these different modes of thought is profitable and necessary to reform established ways of knowledge production. Via a close reading of the poem’s borrowings from paleontology, microbiology, evolutionary biology, and its appropriations of Taoism and Zen Buddhism, this article discusses the dimensions and scope of McClure’s epistemological endeavor. Significantly, “Double Moire for Francis Crick” does not synthesize the two presented perspectives into one but overlays these to create a third combined structure which is ‘between’ the original structures of natural science and mysticism, allowing for a combination and alignment of insight produced in either mode of thought.

KEYWORDS: Michael McClure; Poetry; Epistemology; Moiré Effect; Natural Science; Mysticism

“If I were a poet I would write like Michael
McClure - if only I had his talent.”

(Francis Crick, “The Poetry of Michael
McClure: A Scientist’s View”)

Introduction

On the occasion of the 1975 Margins Symposium dedicated to the work of Beat and San Francisco Renaissance poet Michael McClure, the biologist and Nobel Prize laureate Francis Crick penned a brief comment on the poet’s work. Therein, he praises McClure’s writing for illuminating the intricate connections between “the private world of personal reactions, the biological world, [...], the world of the atom and molecule, the stars and the galaxies.” Overall, he detects a “wide knowledge and enormous enthusiasm for science” informing and propelling McClure’s vision crafted into a poetry which – despite its “exact formulations of science” – “speaks to one’s bones” (Crick). The consistent interest in natural science, i.e., physics, chemistry, but above all biology, pervades McClure’s poetry and emerges as its characteristic trademark. While other poets have drawn on ideas from natural scientific discourses, McClure’s work embeds a scientific perspective within his countercultural vision of protest against the repressive tendencies of 1950s US society, thus allowing not only for

an original account of protest poetry but also for a productive reevaluation and renegotiation of humanist, anthropocentric thinking¹.

Like the work of his fellow Beat writers Allen Ginsberg and Diane di Prima, McClure's countercultural poetry also thrives on the appropriation of different forms of spirituality and mysticism which emphasize the role of the individual, and reject both dependencies on a monotheistic deity and institutionalized religion (Calonne 5-6; Jackson 52). Carl Jackson rightfully argues that many critical discussions of the Beat writers' interest in East Asian, i.e., Chinese, Japanese and Indian forms of Taoism, Buddhism, and Hinduism, fall short of doing the diversity of Beat literature justice. Quite often, such studies allege that the Beats' use of the aforementioned spiritual traditions is nothing but a superficial, careless generalizing appropriation towards non-conformity². While this may be partially true in cases such as Jack Kerouac's *The Dharma Bums*³, these critics fail to differentiate between the different Beat oeuvres, the earnestness and profundity of some (Whalen, Snyder or Ginsberg) and the more superficial eclecticism of others (Kerouac). As David S. Calonne remarks in his 2017 monograph *The Spiritual Imagination of the Beats*, "each [Beat] author created spiritualities that functioned as individual modes of both personal and political resistance to the American Establishment." While Calonne's study delivers – for the first time – a differentiated analysis of the work of eleven Beat writers' influence by what Calonne calls, following Diane di Prima, religious or spiritual "heterodoxies" (1), it forgoes an in-depth discussion of the work of Michael McClure.

McClure's oeuvre – comprising 29 volumes of poetry (the most recent one appeared in 2016) as well as several plays, novels, and non-fiction essays – oscillates between these two poles, at times engaging with Buddhist spirituality and philosophy in consistent earnest⁴, then again appearing to appropriate and to de- and re-contextualize selected notions. Together with his idiosyncratic appropriations of science, these invocations are part of

¹ While Gary Snyder must also be credited for being a 'scientific Beat,' the extent to which his work appropriates terms and concepts from the natural sciences is considerably smaller when compared to McClure's poems.

² A similar point is made by Norman Podhoretz's essay "The Know-Nothing Bohemians."

³ In fact, Kerouac's novel was highly criticized for its misappropriations of Zen Buddhism by fellow Beat writer Philip Whalen.

⁴ See the volume *Touching the Edge* (1999).

McClure's "individual mode[] of both personal and political resistance" against the dualistic thought patterns of the anthropocentric humanism underlying "the American [political and academic] Establishment" (Calonne 1) of the 1950s and after.

With a particular focus on the epistemological implications of McClure's long poem "Double Moire for Francis Crick," this article investigates how McClure's work establishes a dialogue between the natural sciences, more specifically paleontology and microbiology, and the Chinese and Japanese traditions of Taoism and Zen Buddhism. "Double Moire" reflects on and partakes in the ongoing epistemological discussion closely linked but not limited to the contemporary scientific discourse on the nature of consciousness. In recent years, natural scientific discourses have come to acknowledge the dire need for what Jonathan Shear terms "first-person methodologies," in order to "explor[e] the inner world of consciousness." He argues that since science must rely on "public, 'third-person' data" in its knowledge production, it fails to fully grasp the "contents" of consciousness which are "intrinsically private" (697). Shear is convinced that scientific "first-person methodologies" can be established, but not without the help of those mystical traditions that have been developing techniques to fathom the inner workings of consciousness for thousands of years, such as "Yoga, [...] Mahayana Buddhism, Taoism, Sufism" (698) and others. Beyond the reevaluation of epistemological positions in consciousness discourse, mystical practices are generally being re-discussed in natural scientific discourse as complementary means towards a more extensive understanding of particular aspects of reality (698), since they provide what Bertrand Russell suitably identified as "subjective certainty," (9) without necessarily being bound by and limited to religious beliefs and visions (Fontana 163). Along with these positions arising from within the natural sciences, McClure's poem "Double Moire" appears as a counteraction against the harsh aversion to mysticism that traditional humanist discourse has fostered, in particular since the European and US-American Enlightenment discourse and the consequential rise of modern science (Shear 699; Jones xv). By "sing[ing] of the Middle Way" (111) of both natural science and mysticism, "Double Moire" showcases how these two seemingly incompatible modes of thought may interlock in order to form a new mode of thought that allows for the production of a more comprehensive understanding of humans as human mammals and humanity's relationship with its organic and inorganic environment. The poem purports that this can only be

achieved by correlating the “objective facts” of natural science with the “internal, subjective experience” of mysticism (Shear 697). Through its epistemological undertaking, the poem also supplies fertile ground for considering poetry as a means of philosophical reflection.

Subsequently, I will discuss the formal and ethical aspects of Michael McClure’s “Double Moire for Francis Crick” to assess its productive potentials as an epistemological manifesto. The following section introduces the formal basis on which McClure’s epistemological reasoning of interdisciplinarity rests primarily, i.e., the use of moiré patterning as a poetic principle. To clarify this idea, a brief exploration of the influence of Alfred North Whitehead’s lecture series *Modes of Thought* on McClure’s poem will be necessary. Sections three, four, and five elucidate how a superimposition of McClure’s lyrical appropriations of Paul Martin’s work in the field of paleontology, of selected ideas in microbiology, and of Ernst Haeckel’s evolutionary biology with his take on Taoist philosophy and Zen Buddhism illustrates the mechanisms of a new mode of thought that – through means of moiré patterning – takes into account both the natural sciences and mysticism in its own production of meaning. It will be shown that through the employment of this new mode of thought, the poem contributes to the dissipation and reversal of the central dualisms of traditional, anthropocentric humanism, particularly those of human versus nature and human versus nonhuman.

“Sing[ing] of the Middle Way:” Moiré Patterning as Poetic Principle

The full title of McClure’s “Double Moire for Francis Crick” serves as a preamble, announcing both the poem’s epistemological concern and method. Dedicated to the late biologist Francis Crick, it is the second poem McClure wrote for his long-time friend. The first version of the poem called “Moire for Francis Crick”⁵ was published in 1974 and featured eighty-two aphoristic lines of poetry. Written at the time when Crick lay dying and published in 2010, “Double Moire” is a significantly elongated version of “Moire for Francis Crick,” featuring five lines added to each aphorism of the original version. More than a simple do-over, “Double Moire” is a superimposition of these two layers of poetic structure and argument, forming a

⁵ Both poems misspell ‘moiré’ as ‘moire’ in their title.

third combined structure. Significantly, the physical phenomenon of moiré patterning referenced in the poem's title follows such a process of superimposition:

The moiré effect is a well known [sic] phenomenon which occurs when repetitive structures (such as screens, grids or gratings) are superposed or viewed against each other. It consists of a new pattern of alternating dark and bright areas which is clearly observed at the superposition, although it does not appear in any of the original structures. (Amidoror 1)

In addition to overlaying two layers of poetry, each of the poetic structures features moiré patterning itself through superposing two modes of thought traditionally considered to be incompatible: natural science and mysticism – hence, the poem's title of *“Double Moire for Francis Crick”* [my emphasis]. *“Double Moire”* appears to adopt Isaac Admiror's definition of moiré, claiming and illustrating that by “view[ing]” these modes of thought “against each other,” “a new pattern” emerges that can only be “clearly observed at the superposition,” and that is not visible in the “original structures” (see also Fig. 1). Herein lies the poem's core thesis that a combinatory approach of natural science and mysticism is fruitful in that it allows for “a new pattern” (Amidoror 1), a new perspective which does not become apparent through either mode of thought alone.

By “sing[ing] of the Middle Way [...] between light and dark,” (*“Double Moire”* 111, 120) McClure's poem insists on the significance of the visual phenomenon of moiré for its lyrical appropriation. Its visuality

results from the geometric distribution of dark and bright areas in the superposition: areas where dark elements of the original structures fall on top of each other appear brighter than areas in which dark elements fall between each other and fill the spaces better. (Admiror 1)

“Double Moire” thus goes beyond playing with the textbook description of the visual moiré effect. On a basic argumentative level, the belief in an interdisciplinary approach is justified by the idea that moiré patterning can cause gaps within each of the patterns of thought to be filled “better,” and cause dark elements falling upon each other to appear brighter or more defined, i.e., more knowable.

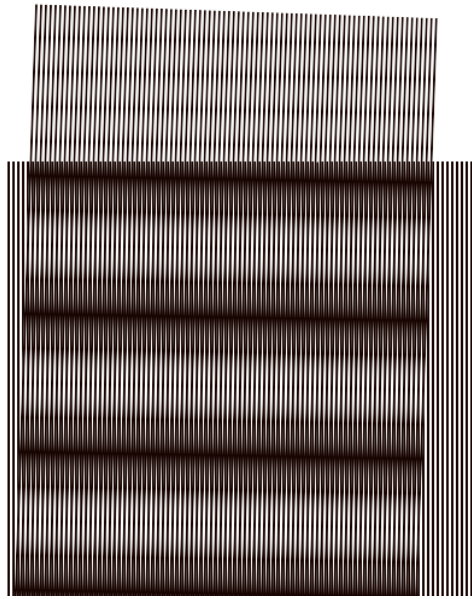


Fig. 1. Author: Anton (rp) 2004. Moiré-pattern of two equally spaced line gratings, rotated by two degrees to each other. <https://commons.wikimedia.org/wiki/File:Moire2grd.png>.

As a whole, McClure's poem shuns evaluative discrimination of light and dark, dismantling the respective traditional metaphors. The "Middle Way" that is presented is one "between light and dark," between natural science and mysticism. Etymologically, mysticism is derived from the Greek word 'to conceal' or 'to close.' (Merkur, "Mysticism") Metaphorically speaking, mystical experience is gaining insight⁶ 'with eyes closed,' while the Enlightenment rationalism that brought forth modern science works along the opposite metaphor of 'seeing with eyes open.' "Double Moire" establishes both ways of 'seeing' as equally essential and – although they appear as opposite and even as canceling each other out – believes them to be compatible.

Philosophically, McClure consolidates these ideas by drawing on the work of Alfred North Whitehead. Explicit references to the late philosopher and mathematician in "Double Moire" (122) and other texts by McClure suggest that his epistemological endeavor is inspired by Whitehead's notion of "the use of philosophy" (174). In one of his later works, *Modes of Thought*, first published in 1938, Whitehead attacks the dichotomy of rationality and

⁶ The humanist notion of 'seeing is knowing,' also inherent in the English language (e.g. insight) would be worth following up, especially in the context of McClure's work. Unfortunately, his attempts to break out of the linguistic and cultural restraints of the English language cannot be discussed in this article, due to its spatial limitations.

mysticism that has dominated humanist discourses, identifying it as the central regressive malady of humanist science and philosophy. More than that, he strives for a reconciliation of the two:

If you like to phrase it so, philosophy is mystical. For mysticism is direct insight into depths as yet unspoken. But the purpose of philosophy is to rationalize mysticism: not by explaining it away, but by the introduction of novel verbal characterizations, rationally coordinated. (174)

The purpose of philosophy in the Whiteheadian sense is to acknowledge the significance of mystical experience and to rationalize, i.e., to verbalize it. While mysticism is subjective, private experience that leads to “direct insight” into the depths that are “as yet unspoken” and which rationalist thinking cannot obtain, rationalist thinking must be the mode of thought that renders the unspeakable speakable, intersubjectively accessible. For Whitehead, any attempt to produce knowledge requires the combination of these two modes of thought. McClure’s poem “Double Moire” selects this critique of humanist thinking as its basic underlying premise. As an elaborate philosophical thought experiment, the poem illustrates how mysticism in the form of Taoism and Zen Buddhism together with the scientific thought of paleontology, microbiology, and the evolutionary biology of Ernst Haeckel form a profitable combinatory new mode of thought, by being viewed against each other through moiré patterning.

The Natural Sciences

“I constantly ask biologists, botanists, or bio-philosophers what we may do, what we may think about, what the situation is.” (*Lighting the Corners* 7)

True to his poetic agenda, Michael McClure feeds his lyrical arguments with terms and concepts from biology. This is particularly apparent in the case of “Double Moire,” which features an unusually large convocation of words stemming from the natural sciences⁷. Rich with paleontological terms, such as “PLEISTOCENE,” (112) “mastodons/mammoth,” (112;

⁷ The full scope of the poem’s paleontological and microbiological register: Paleontology: “American lion” (112), “mastodons”/“mammoth” (112; 116), “SABER TUSK TIGERS”(115), “antlered giraffes” (116), “megatherium” (117), “Dire wolf” (123), and the repetitive use of the word “PLEISTOCENE” (112) Microbiology: “PROTEIN” (114), “MOTILE” (115), “AMINO TRIGGERS,” “membrane” (115), “enzymes” (117), “synapses,” “organelles,” “mitochondria” (119), “hormones,” “nervous system” (120), “capillaries” (129), and “PROTOPLASM” (130).

116) “SABER TUSK TIGERS” (115), and “megatherium” (117), the poem also includes terms from microbiology: “PROTEIN” (114), “mitochondria” (119), and “PROTOPLASM” (130). “Double Moire” uses these borrowings from the discourses of paleontology and microbiology to rediscuss our understanding of human nature and its relationship with nonhuman beings as well as to dissolve and reverse traditional dualisms of humanist philosophy and natural science.

Paleontology

Repeatedly, “Double Moire” makes use of the term “Pleistocene,” peaking in the poem’s capitalized demand to “REVIVE THE PLEISTOCENE” (112). The term “PLEISTOCENE” refers to a geological period characterized by frequently occurring Ice Ages between 2,588,000 to 11,700 years ago (Johnson, “Pleistocene Epoch”). McClure’s lyrical appropriation applies the term to evoke the megafauna characteristic of this period as “the great age of mammals” (“Double Moire” 112). This “great age of mammals” is of interest to investigations into the relationship between humanity and its non-human environment, because it is generally accepted that *Homo sapiens* first walked the earth during this period ca. 315,000 years ago (Tattersall, “Homo sapiens”). In focusing on the Pleistocene, “Double Moire” reiterates McClure’s argument against anthropocentrism, emphasizing that the scientific reasoning of contemporary biology identifies humans as nothing other than mammalian animals. Throughout his oeuvre, McClure’s lyrical efforts center on the insistence that “MAN IS MAMMAL” (*Lighting the Corners* 326). “Double Moire” reproduces this argument claiming that humans are in fact Pleistocenic creatures, having developed as a species precisely during “the great age of mammals”: “[h]ere the Pleistocene stinks and roars / In my shoulders and arms” (116).

In an interview with Harald Mesch (*Lighting the Corners* 24-25), McClure discusses a controversial essay by the famous paleontologist Paul Martin, called “Prehistoric Overkill,” in which the author develops the thesis that *Homo sapiens* were mainly responsible for the extinction of all Pleistocenic megafauna (357). Echoing Martin’s theory, “Double Moire” partakes in the ongoing debate about the beginning of the Anthropocene (Ellis et al., “Introduction”), discussing these occurrences as a precursory event. The assumed ability to control nature, to break natural balance, ending “the great age of mammals” is the

beginning of humanity's estrangement not only from all other organisms and its environment but also from itself, from our true human animal, "MAMMAL" nature (*Lighting the Corners* 326). Leaning towards romanticization, the poem alleges that the Pleistocene marks a time when there was still "no harm in the huge eating / whether it is ribbon worm in the tide pool / or wild horse under the paws of the American lion." (112) Furthermore, the existence of the Pleistocenic megafauna itself is presented as essential to an awareness of the ideal state of natural affairs, which forms human-mammal consciousness. Hence, we find "[o]n the mastodon's tusks [...] a hint / Of genius beyond good and evil" ("Double Moire" 112). In this manner, "Double Moire" "REVIVE[s] THE PLEISTOCENE" as a romanticized fixpoint of the ideal state of a primitive life uncorrupted by human existence. It constitutes the attempt to revive or rather to conjure up a certain sensibility, a form or part of consciousness and perception of the world that brings the reader closer to an understanding of humanity's biological standing as a mammalian animal. Thus, it draws attention to the fact that humans have been acting as a disruptive force towards their non-human environment ever since the Pleistocene. While this tendency might seem to lie deeply ingrained in human nature, "Double Moire" nevertheless fosters a hopeful undertone. Even if the 'Pleistocenic sensibility' appears to be lost to humans, the poem asserts that they can regain this form of human mammal consciousness. They carry it within their biological features, so the speaker claims, maintaining that "[h]ere the Pleistocene stinks and roars / in my shoulders and arms" (116).

In fact, "Double Moire" constitutes a poetic attempt to retrieve this lost sensibility of humans as mammals that have developed evolutionarily as part of their Pleistocenic environment. The poem, therefore, superposes its reworkings of biological reasoning with the mystical imagining of "REALITY [as] A POINT, A PLATEAU, A MYSTERY" that "MAY BE PENETRATED" by "POEMS AND PERCEPTIONS" (113). Reality appears to take the form of a "Plateau" or, as it turns out, a stack of different realities or dimensions which together form the whole of reality. Despite the two- and three-dimensional spatiality that is implicated here, the poem's references to notions of Taoist philosophy⁸ challenge the humanist ideas of space as dimensional and time as serial progress. This allows "Double Moire" to present "the

⁸ This will be discussed further in sections 5.1.

great age of mammals” (112) not as a hermetically sealed past state, but rather as the temporally more ambivalent “once-gone future” (115). While the “Pleistocene stretches backward” it does so “into infinity of nowhere” and as a result remains accessible in the present being “here with bones now and then” (115). The human-mammal sensibility that originates in the Pleistocene can thus lie dormant in the physiological present of human beings and can be reactivated as the “once-gone future” that – so far – has been repressed but might yet unfold. “Double Moire” underscores this view by interspersing Pleistocene relicts throughout its eighty-two stanzas in the form of fossils or evolutionarily diminished organisms, indicating points of access to Pleistocenic reality. Thus, it exemplifies the idea of poetry being able to “PENETRATE” and thereby to link different realities (113). The poem uncovers, for instance, the “BONES OF THE SABER TUSK TIGER IN ASPHALT; / NOW [...] A STATUE IN THE PARK” or “the fern [that] bends under the oak” (115) as present relicts originating in the past which display the existing connection between Pleistocenic and post-Pleistocenic reality. In this manner, these relicts both serve as a reminder to the role humans have played in the mass extinction of the great mammals of the Pleistocene and they signal the possibility to regain the human mammal sensibility that was lost. While this sensibility is, in fact, a future that is “once-gone” and cannot be retrieved as such, “Double Moire” asserts that humans are still capable of recovering the Pleistocenic sense of deep interconnectedness with their nonhuman environment. In light of the Anthropocene, the poem thus employs the Pleistocenic perspective to propose a future that humans should strive for.

Microbiology

“Double Moire” superposes its paleontological trope of recontextualizing humans as Pleistocenic mammals with a pattern of microbiological images which further dissipate the dichotomy of human versus nonhuman by expounding the view that humans are intricately interconnected with their organic environment. In this manner, the macrocosmic perspective of paleontology interlocks with the microcosmic perspective of microbiology and thus contributes to the poem’s moiré effect. Amongst other microbiological entities, the two liquid substances essential to life, “WATER AND PROTOPLASM,” (130) reappear throughout the poem, water in the form of “rain,” (111) “tide pool,” (112) or “springs,” (113) and

protoplasm as “animal gel” or “cozy gel” (116; 119). While water is the liquid without which life as we know it could not exist, protoplasm is the intracellular liquid that sustains and contains the life of all organisms. Strictly speaking, the term includes both the cytoplasm and the nucleus of a cell. In “Double Moire,” protoplasm is invoked only as a synonym for cytoplasm, the “semifluid substance” containing all cell organelles that is found within each cell (The Editors of Encyclopaedia Britannica, “Cytoplasm”). The frequent reoccurrence of both liquids and the poetic renderings of protoplasm as “animal gel” and “cozy gel” (116; 119) in particular suggests their omnipresence as a substance that connects all living entities. This idea is enforced by the appearance of intracellular entities that are found in all forms of life such as “organelles” or “mitochondria,” (119) and the aphoristic assertion that “SPIRIT IS ACTION [...] ACTION IS PROTEIN [...] WE ARE ACTIVITY” (114-115). Beyond the insistence of the poem’s paleontological reasoning that humans are mammalian animals, its microbiological imagery deconstructs anthropocentric positions even more radically, suggesting that both the human body as well as the human mind or spirit arise out of the inspired action that is inherent in the small building blocks of life, i.e., protein.⁹ Through the high density of microbiological references, the poem further levels the difference between macrocosm and microcosm. Readers, along with the great mammals of the Pleistocene, even seem to be entering the protoplasm of a cell themselves, imagining to be swimming in the essential life-containing liquid, amongst the “PROTEIN,” “organelles,” and “mitochondria” (114; 116; 119). In fact, the poem explicitly insists that even planetary objects are made of and “suspended in [...] animal gel” or “cozy gel.”

Both in its paleontological and its microbiological perspective, “Double Moire” uses the poetic imagination to illustrate and to enforce biological notions of human nature and what it calls “life at the roots,” (115) which may appear as somewhat counterintuitive. Acknowledging this, the poem increasingly frames these ideas with terms and phrases that imply the necessity of additional spiritual rather than mere factual recognition thereof, reinventing, for instance, a microbiological organism, the planarian, as a god-like entity:

⁹ McClure’s “Moire” and “Double Moire” both anticipate and echo, respectively, a New Materialism as proposed by Diana Coole and Samantha Frost’s *New Materialisms – Ontology, Agency, and Politics* and Jane Bennet’s *Vibrant Matter*. This I further explore in the forthcoming article “Meat Thyself: New Materialist Ethics in the Poetry of Michael McClure.”

HAIL PLANARIAN!
 Eyed, flat, dark worm in the stream.
 Cousin, dear dragon, cousin
 of lions and gravity. Free to free yourself
 with sub-beings going to learn it again,
 chilly as a comet. (121)

The planarian is a member of a species of flatworm that is to some extent parasitic and lives in aquatic environments. In comparison to the other animals referenced in “Double Moire,” the planarian is a simple organism in physical as well as mental terms. Nevertheless, it is hailed, receiving more adoration by the lyrical I than the great mammals of the Pleistocene. In the speaker’s description, the planarian appears as a higher being, at the same time cutting a rather mysterious and daunting figure, addressed as “dear dragon,” “dark [...] in the stream.” The speaker simultaneously recognizes a connection between the planarian and humans as “cousin,” and – more explicitly – to “lions and gravity” which are powerful and essentially uncontrollable forces of nature. More than just their cousin, the planarian is attributed a superhuman (and in fact supernatural) agency, being “chilly as a comet,” an entity that is unwavering in holding its chosen course (121).

As if it were in ultimate control of itself, the planarian appears to be equipped with the power to be “[f]ree to free [it]self,” and indeed, biologically speaking, the planarian can split itself in two via asexual reproduction, literally “free to free itself” from itself. Because of the remarkable ability of both severed parts, one with and one without a brain, to regenerate into two fully developed and functioning organisms¹⁰ (Pagán 128), the planarian reoccurs in McClure’s poetry as the perfect embodiment of revolt (Phillips 113). In “Double Moire,” the planarian’s asexual reproduction underscores the awe-inspiring and – from a human standpoint – counterintuitive workings of nature, especially those on a microbiological level, constituting what Oné Pagán calls “a rather intriguing biological mystery” (128). Likewise, the speaker in “Double Moire” cannot help but revert to religious imagery of divinity in his¹¹ description of this tiny creature. Once more, these references imply the necessity of spiritual recognition to fully comprehend the “intriguing biological myster[ies]” of nature.

¹⁰ Experiments have shown that a single planarian cut into 279 equal parts can fully regenerate as 279 individual specimen (Pagán 128-129).

¹¹ For the sake of clarity, this article uses generic he.

Interlocking with the intracellular imagery “Double Moire” invokes, the trope of the planarian further highlights the idea that the essence of life is found not within the highly complex human brain alone, but on a significantly lower evolutionary level. It even suggests that small organisms like the planarian are in fact closer to the core principles of life or to “life at the roots” (“Double Moire” 115), such as asexual reproduction, since humans are entirely incapable of performing such an act.

Merging Natural Science and Mysticism: Michael McClure’s “Undersoul”

“Ernst Haeckel and Alfred North Whitehead believed that the universe is a single organism -- that the whole thing is alive and that its existence is its sacredness and its breathing. If all is divine and alive -- and if everything is the Uncarved Block of the Taoists -- then all of it and any part is beautiful (or possibly hideous) and of enormous value. It is beyond proportion. One cannot say that a virus is less special or less divine than a wolf or a butterfly or a rose blossom. One cannot say that a star or cluster of galaxies is more important -- has more proportion -- than a chipmunk or a floorboard. This recognition is always with us.” (*Scratching the Beat Surface* 27)

By insisting on the significance of spiritual as well as factual recognition of biological phenomena to further a fuller kind of comprehension, “Double Moire” also features strong ethical undertones. In his poetic prose, McClure elaborates that the ‘aliveness’ and interconnectedness of every living being, as well as the “enormous value” that rests within every organism, can only be appropriately understood and recognized via the means of both biology as well as spiritual traditions such as Taoism. As it is “beyond [human(!)] proportion,” the human intellect easily fails to comprehend these realizations. Correspondingly, “Double Moire” and other texts by McClure are informed by the work of evolutionary biologist and biophilosopher Ernst Haeckel, who, particularly in his magnum opus, *The Riddle of the Universe* (1899), addressed this very issue.

Haeckel was an evolutionary biologist and contemporary of Darwin, and his work was as radical as that of Darwin and – according to Darwin – more developed than his own (Darwin, reproduced in Richards 262-263). Like McClure, Ernst Haeckel dedicated a significant amount of his work to the search for a new mode of thought. In particular, Haeckel was in great distress over the schism between empirical science and the metaphysics of his day, diagnosing an “unnatural and fatal opposition between Science and Philosophy” (Haeckel viii). His solution was his very own form of monism (vii): a holistic philosophy that made use

of the evolutionary biological thought Haeckel had at his disposal. Haeckel famously claimed that the development of the faculty of mind, the capacity to think (rationally), and that of consciousness is, in fact, a gradual process (88); spiders, amphibians, reptiles, birds, etc., so he argues, are accordingly equipped (Engmann 681). In order to classify the different developmental stages of what he calls the ‘soul organs’ that are innate to all organisms, Haeckel devised a twelve-step “psychological ladder” (Haeckel 88) according to the complexity of these soul organs, beginning with the ‘soul of crystals’ (144; Engmann 682). Although this model does lend itself to teleological interpretations of evolution, Haeckel’s theory counteracts these by conceiving of higher, i.e., more complex organisms, as amalgamations of lower, i.e., less complex organisms, similar to the structural formation of a beehive. The basic form of life is existent in every individual organism; the difference between the steps on the “psychological ladder” is the degree of complexity only, both in physical and mental terms (682). As such, Haeckel’s “psychological ladder” reverberates in the microbiological tenets against anthropocentrism featured in “Double Moire,” specifically in the idea that humans, just as much as any other organism, are in fact large combinations of small particles of inspirited matter.

Similar to Ernst Haeckel’s *The Riddle of the Universe*, McClure’s lyrical oeuvre thus constitutes an attempt to create a biophilosophical vision of interconnectedness among all species that rests upon biological findings, in order to ease the quarrel between empirical science and metaphysics. Therefore, McClure combines Haeckel’s concept of the “psychological ladder” with his own appropriations of “the Uncarved Block of the Taoists,” (*Scratching the Beat Surface* 27) and with Ralph Waldo Emerson’s concept of the “Over-Soul,” which is highly indebted to both Hindu and Buddhist influences as well (Emerson 210; Calonne 8-9). The McClurean concept of an all-pervading life force that results from this merger is termed “undersoul” and represents a further attempt to mend the evaluative schism of human self-perception between itself and the rest of creation:

I say undersoul because I did not want to join Nature by my mind but by my viscera -- my belly. The German language has two words, Geist for the soul of man and Odem for the spirit of beasts. Odem is the undersoul. (*Scratching the Beat Surface* 26)

Building on Emerson’s panpsychic vision of an “Over-soul” “within which every man’s particular being is contained and made one with all other,” (211) McClure develops the

concept of the “undersoul” combining the “modern scientific understanding” of Ernst Haeckel and more recent microbiology “with Taoist insight” (Hinton 158). Like Emerson, McClure subscribes to the idea that all organisms are innately inspired by the very same life force. However, the terminology of the “undersoul” underscores the McClurean tenets against anthropocentrism, claiming that there is something not above but rather ‘below’ and within us that reveals the workings of life. Tiny creatures like the planarian become god-like figures functioning as the pillars of McClurean biomythology. Not only are they forms of life physically and mentally interconnected with humans, but they are also, in fact, closer to certain aspects of life, as they may realize fundamental principles of life which lie outside the realm of human existence, such as the planarian’s means of asexual reproduction.

Mystical Traditions

While the paleontological and microbiological musings of “Double Moire” have demonstrated the need for a ‘mystification’ of scientific understanding, subsequently, this article investigates how the poem’s moiré patterning superimposes philosophical and spiritual notions of both Taoism and Zen Buddhism onto these biological perspectives, following the Whiteheadian axiom to “rationalize mysticism” (174), i.e., to correlate mystical notions with scientific thought. Both traditions are invested in apprehending human nature, specifically in relation to its nonhuman environment, as well as they echo and specify the poem’s epistemological endeavor. Most importantly, by employing Taoist and Zen Buddhist perspectives, “Double Moire” further elaborates that its biological reasoning cannot be fully comprehended by scientific thinking alone. Only through complementary mystical insight, which includes spiritual recognition and personal experience, can one truly fathom the full range of the implications involved.

Taoism

The term *Taoism* or *Daoism* is used to refer to both a philosophy as well as a religion originating in ancient China. The key text of Taoism, the *Tao Teh Ching* (4th century BC), describes its namesake concept of the *Tao* as “the origin” and the “source” of all things (*Tao Teh Ching* 3; 9). It is a force that pervades all aspects and forms of life, and thus unites “the world into one whole” (9). Hence, at the center of Taoist philosophy and spirituality stands

the core belief in the “intricate interconnectedness of all things” (Keown et al., “Taoism”). It is this notion that informs Michael McClure’s idea of an “undersoul” as the all-pervasive spiritual entity or soul that unites all animate entities. In “Double Moire,” the corresponding assumption of “a unified view of the nature of reality” (Wong 25-26) is elucidated via the interlocking perspectives of paleontology and Taoism.

The poem introduces the Taoist conception of the universe as an “uncarved block” in order to stress not only the interconnectedness of all creatures but also of their different realities, of past, present and future, bending both space and time (116). The Chinese word *pu*, often used to refer to this notion, has also found its way into English translations of the *Tao Teh Ching* as “Oneness” (Wu 89) or “Primal Simplicity” (Tzu 73). Blending these different interpretations of *pu*, “Double Moire” tracks the great mammals of the Pleistocene bustling through the oneness of the universe with primal simplicity still intact:

In the hole of nothingness – a pinprick –
 where mastodons and antlered giraffes
 and giant, meat-and-berry-hungry bears steal
 through the uncarved block in their mammoth triumph. (116)

Beyond further showcasing moiré patterning as poetic principle, the superimposition of the paleontological perspective with a Taoist pattern of *pu* fulfills three argumentative functions. Firstly, it adds a philosophical dimension to the biological and somewhat culturally pessimistic reasoning of “Double Moire” that establishes the Pleistocene as an ideal state of natural affairs and human sensibility, predating humanity’s estrangement from itself. Secondly and building thereon, it weaves together the ethical implications of Paul Martin’s “Prehistoric Overkill” with those of the *Tao Teh Ching*. Even more than Paul Martin’s essay, Taoism generally identifies humans as a force disrupting natural developments:

[In] Taoism, the cycles of creation and destruction describe the nature of change. They occur naturally, and are neither good nor bad. Only when human activity interferes with the natural process of change will there be disasters. When disasters are imminent, it is up to human effort to change the conditions so that the disasters can be averted. (Wong 131)

“Double Moire” thus accepts humanity’s culpability in the extinction of the Pleistocenic megafauna, and, at the same time, it calls for action towards the prevention of coming human-made ecological crises and disasters. Lastly, by adopting the Taoist conception of

reality as an uncarved block, the poem challenges the humanist idea of time as serially progressing. The Taoist notion thus allows the poem to hold the Pleistocene and the human mammal sensibility lost therein in an ambivalent stance of being a past, a simultaneous but repressed present, and a future that might still be attained.

In addition to these ethical implications, the formal means of “Double Moire” employed to establish an epistemological “Middle Way” [my emphasis] evokes yet another interpretation of the *Tao*. The *Tao* is the quite literal English appropriation of the Chinese word for ‘the way.’ In connection with its spiritual practices, it is also translated as “the path of practice and the goal towards which one [is] str[iving]” (Keown et al., “Tao”). The poem’s respective ‘goal’ appears to be the mapping out of the way for a new mode of thought. A common and contemporary encyclopedic definition of *Tao* is significantly reminiscent of “Double Moire:”

The Tao or ‘Way’, is the all-embracing matrix of the patterns by which things happen in the world [...] Taoists generally hold to the ideal of coming to a knowledge or vision of this matrix for a variety of purposes: to see the intricate interconnectedness of all things [...]. Such achievements involve finding a balance between the two opposing energies of yin and yang, from whose interaction all phenomena and change arise. [...] both contain the seed of their opposite. (Keown et al., “Taoism”)

The way that is the *Tao* echoes precisely the epistemological implications made in Michael McClure’s poem: The “Way” that “Double Moire” is “sing[ing]” of (111) likewise appears as an “all-embracing matrix of [...] patterns” that are viewed against each other through moiré patterning. Likewise, the poem’s ethical concern is – as has previously been shown in this section – to reveal and to emphasize the “intricate interconnectedness of all things” (Keown et al., “Taoism”). Finally, in the same way that these “achievements” require a balancing approach between the “opposing energies of yin and yang,” “Double Moire” purports that only a balancing or ‘harmonizing’ act between natural science and mysticism – a “singing of the Middle Way” – can generate these insights.

Zen Buddhism

Since Taoism is the ancestral tradition to all schools of Buddhism, it is little surprising that the *Tao* reappears in the Zen Buddhist notion of the *dharma* also translated as ‘the Way’ (Keown et al. “Dharma;” Suzuki 137-138). Yet, as will be expounded in the following section, the “Middle Way” of Zen does not seek “a balance between the two opposing energies of

yin and yang” (Keown et al., “Taoism”). Instead, it replaces the goal of a “balance” with the recognition of non-duality between two opposites (Levitt xix-xx), offering another perspective on the “Middle Way” that “Double Moire” proposes (111). Unlike Taoism, the development of Zen Buddhism cannot be traced back to one particular text like the *Tao Teh Ching*. Any discussion of English speaking literature incorporating ideas of Zen Buddhism is further complicated by the fact that an English speaking discourse on Zen was initiated by a number of different accounts by Japanese monks and scholars, who presented their own more or less idiosyncratic reading of Zen writing (Barrett viii-ix). In what follows, I will briefly sketch the significant influences on McClure’s poetry and Beat writing in general.

In 1958, the *Chicago Review* published a special edition on the topic of ‘Zen’ which brought together a wide variety of contemporary literary accounts on Zen Buddhism in US-American literature. Therein, Alan Watts famously criticized what he called “Beat Zen” as featured in the poetry of Allen Ginsberg and Gary Snyder as well as in Jack Kerouac’s *Dharma Bums*. He claimed that as “Western” misappropriations of Zen Buddhist teachings they had only struck a nerve for their “forceful social criticism” and their “digging of the universe,” which was precisely what rendered them un-‘Zen.’ (7-8) In McClure’s poetry, too, references to Zen Buddhism are part of a socio-cultural criticism that attacks the dualistic thought patterns of the anthropocentric humanism underlying the repressive US society of the 1950s and after. Moreover, the consistent recurrence of biological tropes, such as those discussed earlier in this article, that appear alongside invocations of Zen reveals a characteristically McClurean “digging of the universe.” In consequence, it is hard to acknowledge McClure’s references to Zen as anything but “Beat Zen.” Nevertheless, it remains worthwhile to investigate what the McClurean rendition of Zen entails and to what effect the pattern of Zen references in “Double Moire” is interwoven with the biological and Taoist perspectives as well as with the poem’s overall argumentative structure.

Beginning in the 1920s, Zen Buddhism was introduced to a wider English-speaking public by the work of Daisetsu Teitaro Suzuki, a Japanese scholar whose work also represented a predominant and somewhat genuine source for Beat writers, especially for those who were not well-versed in Japanese. Suzuki’s writings identify non-duality and universal

interconnectedness as key components of the original Zen teachings¹². In an essay discussing “The Role of Nature in Zen Buddhism,” Suzuki even briefly reproduces central dichotomies of humanist thought on nature, most prominently the separation of humanity and nature, in order to explicate the non-duality of Zen subsequently. By including canonized Zen *koans* and invoking their conventional interpretations, Suzuki concisely denotes the relationship between humans and ‘nature’ in Zen: “Nature produces Man out of itself; Man cannot be outside of Nature”¹³ (283). Zen further entails the prerogative of encouraging humans not to conceive of themselves “objectively in opposition to Nature,” but instead “to make Man retreat, as it were, into himself and see what he finds in the depths of his being” (284). Thus, practitioners are guided towards the recognition of the “perfect identity of Man and Nature” (289).

These ideas reverberate throughout “Double Moire,” and are elucidated through its biological reasoning. On the poem’s quest for “life at the roots,” (115) perspectives of paleontology, microbiology and Zen coalesce. The paleontological tenet that presents humans as having emerged out of and hence part of their Pleistocenic environment, the microbiologically informed sentiment that identifies humans as the amalgamations of ‘lower’ forms of life (“ACTION IS PROTEIN [...] WE ARE ACTIVITY;” 114-115) interlocks with the Zen notions of “Nature produc[ing] Man out of itself,” rendering humans unable to “be outside of Nature.” (Suzuki 283) While “Double Moire” does not feature direct references to Suzuki’s writing, Zen and microbiology often appear superimposed upon each other:

ACTION IS PROTEIN. It is politics of flesh
and non-being. NOT nothing, not something,
here in the face. Here in the stomach and arms. (114)

This idea of “non-being” or “nothingness” (112) that is simultaneously “NOT nothing” and “not something” (114) constantly resurfaces throughout “Double Moire.” It is quite at odds with the conceptions of ‘nothingness’ as developed in the European philosophical tradition,

¹² It needs to be noted that Zen in general shuns the “abstract” and “conceptual” medium that is language. Suzuki himself is keen to emphasize that ‘true’ Zen “never suggests; it directly points at ‘this’ [(truth)].” He admits, however, possibly for self-vindicating reasons, that “Zen constantly uses words against its own declaration that it stands outside all words.” (295)

¹³ Suzuki’s language is quite obviously outdated for its use of generic “Man.” He acknowledges, however, the problematic use of the term ‘nature’ (283).

such as the physical vacuum (Genz vii; Heisig 35), since it appears to be involved in the creation of substance, in the biological “politics of flesh” (“Double Moire” 114). In Zen and in Mahayana Buddhism in general, the concept of *sunyata* – translated by Suzuki and others as ‘emptiness’ or ‘nothingness’ (Suzuki 289; Keown et al., “sunyata”) – “is equivalent in meaning to suchness (*tathata*) and ultimate reality and ultimate truth” (Keown et al., “sunyata”). Hence, the ‘nothingness’ that *sunyata* is referring to is not only part of existence, but it is, in fact, the same as form and therefore that out of which form can be created (*The Heart Sutra* 4). The equivalency of *sunyata*/‘emptiness’ and *tathata*/‘suchness’ is thus dependent on the insight that both ‘emptiness’ and ‘suchness’ form the “oneness of things” (288) that is “ultimate reality” (Keown et al., “sunyata”). For Suzuki, this constitutes the pivotal realization of non-duality which replaces dualistic patterns of thought, comprising the acknowledgment of both the “dichotomy [that] is there” between humans and nature, and the simultaneously existing identity of the two (289-290).

“Double Moire” invokes the Zen tenet of *sunyata* to emphasize the ostensible paradox that while humans are in some respects different from their organic and inorganic environment, they are nevertheless closely related and inextricably linked to it. The spiritual insight thus supplied by Zen aides the recognition of human nature as paradoxical and counterintuitive as the microbiological perspective of “Double Moire” has it appear. Through the combined perspective of the poem’s biological and mystical tenets, one can come to comprehend how humans as highly complex organisms are the closely related “cousin[s]” (121) to much less complex organisms like the planarian, and how humans, as much as all other organisms, are nothing but large amalgamations of microscopic units of inspirited matter: “SPIRIT IS ACTION [...] ACTION IS PROTEIN [...] WE ARE ACTIVITY” (114-115).

6. Concluding Remarks

When Francis Crick reviewed Michael McClure’s poetry from “A Scientist’s [point of] View” in 1975, he recognized that it “speaks to one’s bones” precisely for its combination of “exact formulations of science” with “the private world of personal reactions” (“The Poetry of Michael McClure: A Scientist’s View”). Instead of composing an elegy for his late friend, Michael McClure wrote “Double Moire for Francis Crick” as a poetic reflection on and an outcome of their long-time intellectual exchange. Reiterating moiré patterning as a viable

means of meaning production, “Double Moire” echoes biological findings from the discourses of paleontology and microbiology, using these to consolidate ethical claims against the humanist thought complex dominated by anthropocentric dualisms such as human versus nature and human versus nonhuman. With his notion of the “undersoul,” (*Scratching the Beat Surface* 26) McClure bridges the gap between the objective and distant perspective of natural science and “the private world of personal reactions” which mystical traditions like Taoism and Zen are concerned with. Presenting such a combinatory vision, “Double Moire” does not only take an epistemological position but further works towards the emphasis of the “enormous value,” and “sacredness” of those aspects of reality that outgrow human “proportion” and understanding (*Scratching the Beat Surface* 27).

Although the employment of Taoism, Zen Buddhism and other mystic traditions by any writer non-native thereto always remains problematic, McClure’s “Double Moire” renegotiates these in creative and productive ways. Their strong emphasis on private practice and private experience (especially in the case of Zen) along ‘the Way’ of the *Tao* or the *dharma* to enlightenment allows “Double Moire” to elucidate complementary ways towards a fuller kind of comprehension. Thus, the poem proposes a “sing[ing] of the Middle Way” that echoes the *Tao*’s reconciliation of opposites as well as Zen Buddhism’s notion of non-duality.

Through its ideological and structural application of moiré patterning, McClure’s “Double Moire” contributes to an epistemological discussion that goes beyond the development of a new mode of thought between natural science and mysticism in the Whiteheadian sense. It raises the question whether and how poetry as creative metadiscourse is an apt medium to rediscuss philosophical positions from an alternative and complementary angle. As the previous discussion has shown, poems like “Double Moire” can both address and productively negotiate matters of epistemology as well as of ethics.

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