

Article

## “Without an Analytical Divorce from the Total Environment”: Advancing a Philosophy of the Humanities by Reading Snow and Whitehead Diffractively

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Received: 30 April 2014; in revised form: 16 June 2014 / Accepted: 16 June 2014 /

Published: 20 June 2014

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**Abstract:** This article develops a philosophy of the humanities by reading C.P. Snow’s famous thesis of “the two cultures” through the early work of Alfred North Whitehead. I argue that, whereas Snow refers to Whitehead’s *Science and the Modern World*, he ultimately paves the way for a reductive interpretation of humanities scholarship, which is a move that can be repaired by delving into Snow’s own reference to Whitehead following a diffractive reading methodology. This way of reading was first formulated in the context of feminist epistemology (but can be found elsewhere and under different names) in an attempt to generate constructively conceptual rather than closed hermeneutical readings of theoretical texts by making the reading dynamic and open-ended (in Karen Barad’s terms: reading their insights “through” one another). As such, reading diffractively shies away from relying on classification and is playful with the past, present, and future of the humanities. The article argues that the diffraction of Snow and Whitehead hinges on theories of “beauty” and will demonstrate (with Whitehead) that humanities scholarship originates in a total environment in which works of art—as the subject matter of humanities research—stand out and preserve themselves as “enduring objects”.

**Keywords:** humanities; history and philosophy of the humanities; classification; theories of time and temporality; diffractive reading; C.P. Snow; Alfred North Whitehead; beauty

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## 1. Introduction

The work of C.P. Snow (1905–1980) is a standard reference for “the humanities”. His concept of “the two cultures” situates the humanities *vis-à-vis* the sciences and stages a mutual and hierarchical misunderstanding between the two scholarly fields. Just like the famous distinction between *Geisteswissenschaften* (the humanities) and *Naturwissenschaften* (the natural sciences), a distinction between the scholarly disciplines (together encompassing *Wissenschaften per se*) made by the German philosopher Wilhelm Dilthey (1833–1911), Snow’s work has gone down in history as a disjunctive affair. However, as Michel Foucault has argued, “[...] throughout the nineteenth century, from Kant to Dilthey and to Bergson, critical forms of thought and philosophies of life find themselves in a position of reciprocal borrowing and contestation” ([1], p. 162). In other words, Dilthey’s differentiation between the methodologies of *Verstehen* (understanding) and *Erklären* (explaining) is hardly sustainable because the two disciplinary realms mentioned above spill over into one another (*i.e.*, they are excessive).<sup>1</sup> Snow’s text “The Two Cultures” is unclear as to whether the distinction that is introduced in it is desirable. For this reason, Snow published a “second look” upon the matter just a few years after the delivery and publication of his groundwork. In this text, Snow refers to a text written by Alfred North Whitehead (1861–1947) and, I will argue, that this reference provides the key to encompassing observations such as Foucault’s into the way in which we tend to think of, and lecture about, the humanities (even when this is done in Snowian terms). This article asks the following questions: to what extent are Snow’s two cultures excessive? Must we add to Foucault’s analysis about the impossibility of fencing in the thought traditions of the nineteenth century and conclude that Snow did not manage to contain his twentieth-century classification? Phrased differently, is the search for the demarcation line between “the humanities” and “the sciences” flawed?

In this article I close-read Snow’s work following the procedure of “diffractive reading”. My goal is to come to an understanding of a philosophy of the humanities that is not predeterminedly (or rather: whig-historically, that is, falsely progressive) confined to the way in which textbook accounts of humanities philosophies and methodologies represent both the humanities as such and texts supporting its difference from the sciences. Karen Barad has developed the methodology of diffractive reading in conversation with Donna Haraway [3,4]. The latter completed the toolbox of semiotics (consisting of “syntax”, “semantics”, and “pragmatics”) with “diffraction” in order to affirm how “interference patterns can make a difference in how meanings are made and lived” ([4], p. 14). This description of diffraction demonstrates that the aspiration is to grasp differences that cut across the well-known hierarchical patterns of capital-D Difference. In other words, while the stifled and stifling patterns of gender, sexuality, ethnicity, *et cetera*, are confirmed, also confirmed is the fact that difference is—at the same time—differently constructed and experienced. Diffractive reading, then, reads for these different differences and does so in ways that are “respectful of the entanglement of ideas and other materials in ways that reflexive methodologies are not. In particular, [the] method [is] attuned to the

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<sup>1</sup> Whereas the German term “*Geisteswissenschaften*” seems to cut across the dichotomy between the sciences and the humanities as it stirs questions about the scientificity of the humanities, Dilthey’s subsequent distinction between “*Verstehen*” and “*Erklären*” re-installs the gap and *Geisteswissenschaften* is, therefore, part and parcel of the nineteenth-century Western birth of the disciplines, notwithstanding the interest Dilthey had in sociology, which weakens the dichotomy in the same stroke [2].

entanglement of the apparatuses of production, one that enables genealogical analyses of how boundaries are produced rather than presuming sets of well-worn binaries in advance” ([3], pp. 29–30). This way of reading generates constructively conceptual rather than closed hermeneutical readings of theoretical texts by reading their insights “through” one another. Hermeneutical readings can be closed because either “the text” is given a label that comes to overcode it, or its “genre” is put in a lineage based in sequential negation, or both. As such, diffractive readings—and we can infer that some readings deemed hermeneutical are in fact diffractive—shy away from relying on classification, which is considered an illegitimate importation into scholarship. The methodology can also be found outside of the context of feminist epistemology. Steven Shaviro for instance does not use the term in *Without Criteria* but makes the following succinct statement:

In this book, I have tried to establish a sort of relay between [Alfred North Whitehead and Gilles Deleuze], so that each of them helps to resolve difficulties in the work of the other. [...] I am less concerned with *reconstructing* Whitehead’s thought precisely than in delineating the outlines of the *encounter* between Whitehead and Deleuze, an encounter that changes our apprehension of both of them. ([5], p. xiv, p. 27, footnote 9; emphasis added)

Diffractive readings—which one can begin purposefully or “stumbles upon”—can free texts and insights from sedimented interpretations (prompted by “the canon”) and implement de-sedimentation in such a way that texts and their insights remain available for future theoretical work on a particular topic (here: the humanities).<sup>2</sup> The diffractive reading methodology allows for scholarly work to remain in movement, because it does not follow its canonical confinement or—worse—wholesale dismissal.

By choosing a diffractive reading strategy, I situate this article on the intersection of the two topics of this special issue of *Humanities*: philosophy of the humanities, on the one hand, and, on the other,

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<sup>2</sup> Gregg Lambert has reminded me of the fact that Jacques Derrida ([6], pp. 10, 86) used “de-sedimentation” in *Of Grammatology* as something like a synonym of “de-construction” (according to which the destruction of a text or oeuvre, or an idea or set of ideas is *not* a demolition). Although the differences and similarities between diffraction and deconstruction—both in the work of Derrida and as a result of its (flawed) canonization (as a methodology)—are still to be researched, I wish to mention here that the diffractive methodology involves the deliberate or accidental study of at least two texts/corpus at once (which could possibly lead to a dissimilarity with deconstruction) but that Barad—in a conversation with her colleagues Vicki Kirby and Astrid Schrader—moves to Derrida in her later work [7–10]. An important first observation with regards to the similarities between deconstruction and diffraction could be that whereas diffraction is explicit about its methodological status (one can purposefully begin a diffractive reading of text A and text B, as suggested by Barad; see e.g., [3], p. 232), its workings are as immanent as deconstruction’s workings (one can also “stumble upon” a diffractive reading, when text B *presents itself* to the reader while immersed in the reading of text A and as *intrinsically connected to—even part and parcel of—the latter text*; here “intertextuality” is echoed and a study of the differences and similarities between diffraction and intertextuality is in place). The following summarizing statement by Derrida (quoted in: [11], p. 6) suits diffraction perfectly fine: “Deconstruction is not a method or some tool that you apply to something from the outside [...] Deconstruction is something which happens and which happens inside; there is a deconstruction at work within Plato’s texts, for instance”. The quote goes well with diffraction, because as soon as a text is diffracted by another text, it has always/already been affected. My previous work has explained this with the strange temporality of Althusserian interpellation [12]. Kirby has made clear how the strange causality of Derridean *différance* can be used to the same effect (see [13], p. 292).

theories of time and temporality. I demonstrate how—just like *life* in the late eighteenth century—it is another classical theme—namely *beauty*—that forms the hinge point of the freeing of Snow or, rather, the humanities. It will shortly become clear that I need the work of Whitehead for this and that Snow himself has paved the way for this. I evaluate the importance of my discussion for the contemporary humanities at the tail end of the article, when I discuss the following questions: what can the changing landscape of the humanities today gain from my discussion of twentieth-century canonical sources? To what extent should we argue that this landscape—with its new denominators of the “environmental”, “medical”, “digital”, “post-human”, “blue”, *et cetera*, humanities—is changing at all?

## 2. Reading Snow through Whitehead

C.P. Snow’s “The Two Cultures” is the transcript of his Rede Lecture held at the University of Cambridge on 7 May 1959. The transcript has become a much and heatedly debated text—published first in the same year as the lecture was given—that is firmly secured in our collective consciousness for its description of the widening gap between scientists and literary intellectuals, and its plea for an educational reform that would close the gap so as to produce responsible scholars and citizens. Snow, himself both physicist and novelist, argued:

Literary intellectuals at one pole—at the other scientists, and as the most representative, the physical scientists. Between the two a gulf of mutual incomprehension—sometimes (particularly among the young) hostility and dislike, but most of all lack of understanding. They have a curious distorted image of each other. Their attitudes are so different that, even on the level of emotion, they can’t find much common ground ([14], p. 15).

Snow’s frustration is with the literary intellectuals in particular; these humanities scholars (who later on became known as “theorists”) do not understand processes such as the industrial and scientific revolutions, and have nothing to add to the urgent question of poverty as perceived by Snow.

In “The Two Cultures: A Second Look”, Snow refers to Alfred North Whitehead’s 1925 *Science and the Modern World* as one amongst a few exceptional examples of scientists embracing not only hard-core scientific issues, but also issues of worldly concern (including aesthetics) ([15], p. 53). The last chapter of *Science and the Modern World* neatly seconds Snow’s concerns as we encounter Whitehead claiming:

Another great fact confronting the modern world is the discovery or the method of training professionals, who specialise in particular regions of thought and thereby progressively add to the sum of knowledge within their respective limitations of subject. [...] This situation has its dangers. It produces minds in a groove. But there is no groove of abstractions which is adequate for the comprehension of human life ([16], pp. 196–97).

Mirroring Henri Bergson, who has argued in *Laughter: An Essay on the Meaning of the Comic* that “the mind crystallising in certain grooves” ([17], p. 32) distorts sound knowledge production in a way that is *comical* owing to the fact that “a mechanism [is] superposed upon life” ([17], p. 28), Whitehead’s plea is one for a different education. However, Whitehead argues not only for a socially relevant education, like Snow, but he also pushes the issue of beauty to the limit, whereupon he is enabled to formulate his educational wishes from an angle significantly different from Snow (and

coming close to Bergson, whose metaphysics is based on a “creative evolution”). Whitehead’s angle is particularly relevant for a project of establishing a history and philosophy of the humanities that does justice to a (changing?) humanities landscape as it seems to be able to circumvent the fact that history and philosophy of science are generally predicated on the humanities as their constitutive outside.

Mathematician, logician, and philosopher, Whitehead draws attention to the fact “that we neglect to strengthen habits of concrete appreciation of the individual facts in their full interplay of emergent values, and that we merely emphasize abstract formulations which ignore this aspect of the interplay of diverse values” in the educational context ([16], p. 198). Thus—and here my diffractive reading takes flight—whereas Snow ([14], p. 22) stresses “how beautiful the thinking is” of the physicists and Nobel Prize laureates T.D. Lee and C.N. Yang<sup>3</sup> in terms of the violation of “[i]ntuition, common sense” ([14], p. 22) thus prompted, Whitehead upholds an opposite take on intuition by claiming it to be the preferred alternative to intellect and common sense alike in the Bergsonian sense. (Bergson has famously argued that rational objectification as well as habit “spatialize time” and have no eye for the fact that the temporality of phenomena may materialize in a myriad of ways, wherefore linear time and the teleology implied reduce the durational phenomena under study.) Albeit that Whitehead, in *Science and the Modern World*, is ambiguous about the relation of his own work to Bergson’s (see e.g., [16], p. 52), his Bergsonism is not only to be found in the distinction of intellect and common sense, on the one hand, and intuition, on the other. He also argues that “the very nature of things” consists of “the spirit of change” and “the spirit of conservation”, which is to say that “[t]he character of existent reality is composed of organisms enduring through the flux of things” ([16], p. 201). This comes close to Bergson’s “upward” and “downward” movements expressed in *Creative Evolution* and *The Creative Mind* [19,20].<sup>4</sup> Whitehead’s plea is that “[t]he center of gravity of the other side of training should lie in intuition without an analytical divorce from the total environment” ([16], p. 199). Deeming this total environment *originary*, Whitehead makes a case for schooling in art and aesthetics, because “[g]reat art is the arrangement of the environment so as to provide for the soul vivid, but transient, values” ([16], p. 202). This is how Whitehead, standing on the brink of a new phase in his work (*cf.* [22], p. 114), wanted to interfere in the problem of minds in a groove, the problem, that is, of the two cultures.

Snow associates beauty with the simplicity of the physics theorem, while Maura C. Flannery, for example, has argued that beauty (in biological science) can be intensity, complexity, unity, form, or rhythm [23], and Whitehead too is explicit about the reductive nature of the notion of beauty that we came across in the work of Snow. First of all, Shaviro has remarked that in Whitehead a certain *reductionism* underlies a statement about “the beauty of [physics] theorems, the elegance and internal self-consistency of its mathematics” ([5], p. 15). This kind of privileging of beauty seems to deeply subvert the common-sense epistemology of natural science as representing the theory and practice of neutral and distant scholarship, but when the privileging proves to be so central, have we actually thought through how the beautiful affects our notions of truth and objectivity?<sup>5</sup> This question goes

<sup>3</sup> Lee and Yang got the Nobel Prize in 1957 for proving the violation of the fundamental and purportedly absolute law of parity conservation. See [18].

<sup>4</sup> The relation between Bergson and Whitehead is contested, as can be concluded from [5,21,22].

<sup>5</sup> See for a recent discussion [24].

further than historical studies of science allow us to go, because, whereas these studies prove the messiness of (f)actual scholarship,<sup>6</sup> they often assume a projectivism (*instead of* an objectivism) that generates an unreal opposition between the impact of beauty and a deeper layer of theorization. An example can be found in James W. McAllister's *Beauty & Revolution in Science*:

I presume that the value to which the aesthetic appreciation of scientific theories refers does not reside in the theories themselves but rather is projected into theories by individual scientists, scientific communities, and observers of science. This amounts to the claim, which I think is very plausible, that we cannot fully describe a scientific theory's aesthetic value without referring to the effect of properties of that theory on scientists or other observers ([26], p. 31).

What we see here is that whereas the theories themselves are deemed agential (theories are agents which have an impact on scholars and the general public, following Barad's definition of the agential contributions of "a host of material-discursive forces—including ones that get labeled 'social', 'cultural', 'psychic', 'economic', 'natural', 'physical', 'biological', 'geopolitical', and 'geological'—that may be important to particular (entangled) processes of materialization", see [3], p. 66), they are also shielded from aesthetic appreciation. In the end, a theory itself has nothing to do with aesthetics. According to Whitehead's attempt at non-reductionism, language is a fundamentally creative process that asks for a pluralist rather than a static perspective ([5], pp. x–xi). Accordingly, we might ask how the theorems of physics are able to contain what we presume they fully capture. Thus, second of all, "'beauty' and 'creativity' are for Whitehead entirely generic notions" that "apply univocally and indifferently to all entities and to all forms of existence" ([5], p. 155). Locking up beauty in artificial (static) language, like Snow does and McAllister too, is not a solution to the problem of the two cultures, but rather its foundation. The question of beauty is, for Whitehead, an intuitive and—to use a term of Félix Guattari [27]—"transversal" one.

Where Snow endorses a reductive take on the intuition—common sense—intellect triad, upholding "beautiful" intellectualism at the expense of intuition (and common sense), we see the first signs of him keeping up the binary that he set out to shift (a shift that this article attempts to push to the limit). In "The Two Cultures", as well as "A Second Look", Snow reflects upon the problem of dualism in an attempt to undo the suggestion of his own argument being bewitched by the power of dialectics. However, it is only by reading Snow and Whitehead diffractively that the bottom of this issue is reached. After all, it is the *performative* nature of any academic practice that is taken advantage of in a diffractive reading, whereas a *reflection* implies a gesture that is itself dichotomous in terms of the word-world and subject-object relations, as well as in terms of quarrelling philosophical schools. A reflection (subject, word) is never enough should one wish to shift the (oppressive or liberating) power a certain structure might have over one's writing. The only option is the plunge into reality, going along with writing as a creative activity that embraces the total environment, instead of considering it to be a representational activity that presupposes the possibility of neat linguistic capturings of "this" or of "that" (object, world). This also shifts the notion of reflection, the conclusions of which must be affirmed as always/already carried away by the creative force of reality and the writing practice. We

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<sup>6</sup> Steven Shapin calls this how science is "never pure" [25].

will soon see that it hasn't been enough for Snow to claim repeatedly that "[t]he number 2 is a very dangerous number: that is why the dialectic is a dangerous process" ([14], p. 18; [15], p. 55).

Snow's argument centers on his ethnographical insight in the two exclusive communities of scientists (exploring nature) and humanists (exploring and bringing forth culture). When he describes the impoverishment of the latter, he states:

They still like to pretend that the traditional culture is the whole of "culture", as though the natural order didn't exist. As though the exploration of the natural order was of no interest either in its own value or its consequences. As though the scientific edifice of the physical world was not, in its intellectual depth, complexity and articulation, the most beautiful and wonderful collective work of the mind of man. Yet most non-scientists have no conception of that edifice at all ([14], p. 21).

Albeit actively searching for messiness and even possibly discovering what I will below call a "metaphysics of naturecultures", this quote demonstrates that Snow remains attached to what Whitehead in one of his Turner Lectures from 1919, also held at Cambridge, coined is "the bifurcation of nature". In the citation, Snow lays out a strong idealism and anthropocentrism. After having engaged with Whitehead's *Science and the Modern World*, it is hard to conceive of the benefits of teaching humanities scholars about value as *imposed on* a near-mute natural world and the mind-centeredness of projecting beauty into scientific theories. The affirmation of the exploration of the natural order "in its own value or its consequences", *potentially* paralleling Whitehead's take on value as "*belong[ing] to the order of nature*" ([22], p. 157; emphasis added) instead of being "paradigmatically human" ([22], p. 156), has not been pushed to the limit by Snow. He wrote "A Second Look" in part because he had been accused of showing approval for the observed distribution between natural science and the humanities. How can the work of Whitehead bring Haraway's "more promising interference patterns" ([4], p. 16) to Snow's influential thesis? For including the fleshing-outs of natureculture metaphysics in a history and philosophy of the humanities it is not enough to look at Snow alone. We will have to be attentive to Whitehead's self-positioning too. What does it mean that Whitehead says that "[v]alue' is the word I use for the intrinsic reality of an event" (quoted in: [22], p. 156)?

### 3. From a Natural Philosophy...

In "Theories of the Bifurcation of Nature", the Turner lecture as published in the 1920 essay collection *The Concept of Nature*, Whitehead differentiates between the extreme and intermediate forms of bifurcation theory. The extreme form makes use of a strict causal model that revolves around "mind" and "nature". Whitehead observes that it apparently proves to be extremely difficult to consider nature in its totality. There are always "two natures" or "two divisions, namely [...] the nature apprehended in awareness and the nature which is the cause of awareness" ([28], pp. 30–31). In causal terms, Whitehead talks about two different tracks following the example of a confrontation with a fire:

Unless we produce the all-embracing relations, we are faced with a bifurcated nature; namely, warmth and redness on one side, and molecules, electrons and ether on the other

side. Then the two factors are explained as being respectively the cause and the mind's reaction to the cause ([28], p. 32).

A natural scientist led by bifurcation theory is only to go into “the cause of the fact of knowledge” ([28], p. 32) and, therefore, she works from a fundamental idealism as she assumes to have mind on one side—a mind that can only deal with its own products, which is a Kantianism—and nature on the other. This is another way of saying that we can only go into “relata” ([28], pp. 33, 35), whereas Whitehead himself wants to express how “[b]eings do not preexist their relatings” ([29], p. 6), *all-embracing* relations.

Whitehead argues that “there is but one nature, namely the nature which is before us in perceptual knowledge” ([28], p. 40). Albeit that *The Concept of Nature* differs significantly from *Science and the Modern World*, the beginnings of the notion of the “total environment” as originary are discernable in the former too, as Isabelle Stengers infers that in the former publication,

[n]ature is [...] neither knowable—definable, for instance, as a system of relations between entities—nor unknowable, the famous “mute reality” upon which we project human, linguistic, or social categories. [...] Nature is that about which relevant knowledge may be produced. If we pay due attention to it, we can learn, discern relations, and multiply entities and ratios ([22], p. 106).

Whitehead does not work with a foundational knowing subject (“mind”). He is interested in “situating the mode of attention that gave rise to the bifurcation of nature in a way that verifies that it is always possible to discover more in nature, but without ever discovering in it that which would enable what is known to be ‘explained’” ([22], p. 107). In the work of Whitehead, ontology and epistemology are fundamentally intertwined, which stirs what Barad has called an “onto-epistemology” [3]. His aversion to explanation is based in its dualist character. (Here we see that Whitehead moves beyond the Bergsonian intellect—common sense—intuition triad; Whitehead affirms intellect too because it can be reconfigured following the answer to the question: what did a certain intellectual stance have to assume in order to have materialized as such? Since the unraveling of this assumption will always uncover a certain embodied situation, Whitehead is able to affirm intellectualism.)

The intermediate form of bifurcation theory is what Whitehead summarizes as “the theory of psychic additions”, which leads us back to McAllister's interpretation of beauty as projected into theories. The intermediate form of bifurcation theory is founded upon the Cartesian/Lockian distinction between primary and secondary qualities and assumes that “the nature we are discussing is always the nature directly known”, which is celebrated by Whitehead, but at the same time, unfortunately, “it holds that there are psychic additions to nature as thus known, and that these additions are in no proper sense part of nature” ([28], p. 42). It is important for our discussion that Whitehead phrases the former in terms of space, time and matter—that which is configured according to “spatiotemporal positions” ([28], p. 43), or Euclidian grid lines [30]—and the latter in terms of “artistic additions of colour, warmth and sound” ([28], p. 43). Here we see, not only the historical and systematic origins of the “crude materialism” that triggered eighteenth-century Romanticists and nineteenth-century vitalists—a materialism that is a non-exhaustive opposite of idealism—but also how philosophies of science have made the humanities into their own and their object's constitutive outside (the extreme form of bifurcation theory) or their inferior Other (the intermediate form).

Whitehead's reflections on the bifurcation of nature apply to his plea for "natural philosophy" instead of scientific philosophy or philosophy of science as we know it. The latter are mind-centered enterprises, whereas Whitehead, who still claims to be anti-metaphysical here, insists on a philosophy that embraces "the coherence of things perceptively known" ([28], p. 29) and positions itself *in* reality so as "to discuss the relations *inter se* of things known, abstracted from the bare fact that they are known" ([28], p. 30). It is here that we find a take on the adjective "natural" that is not based on the exclusion of the artistic. Such exclusion covers the seductively scientific: fixed space and time, and mute matter. However, Whitehead says that "data as they occur in the scientific laws do not relate all the entities which present themselves in our perception of nature. For example [...] it leaves out colour as perceived" ([28], p. 46). It is apparent, then, that Whitehead does not fall back onto dualism, but rather pushes every philosophy—the philosophies of natural science and of the humanities included—to a natural philosophy.<sup>7</sup>

By ascertaining how nature *involves* the artistic (color, sound, texture, *et cetera*), Whitehead circumvents any dualist remainder. Nature pertains to that which is studied by natural science and the humanities, not as schismic, but *in their entanglement*. And since this "one nature" is *prior* to or *beneath* emergent scholarly, societal, and aesthetic values (including classificatory renderings of scholarship, unequal power relations, and matters of taste) because it is or expresses value *itself*, Whitehead can easily affirm that "[t]he real question is, When red is found in nature, what else is found there also?" ([28], p. 41). When the sky turns red, what happens on an affective and on a celestial and electromagnetic level? And when we see the workings of two patches of red on a canvas, what is aesthetically and luminescently at work?

Thus, Whitehead also upholds a strong belief in science. He "assume[s] as an axiom that science is not a fairy tale" ([28], p. 40) but is not susceptible to anything ascribed by Snow to the men of science or, alternatively, to Snow by us. In fact, the case of Whitehead, in both practice and theory, diffracts Snow's account because Whitehead is himself a scientist that does not buy into the do's and don'ts of his supposed culture<sup>8</sup> and, on a more fundamental level, he should not be asked whether he has ever read Shakespeare ([14], p. 22) because his engagement with science *is* his engagement with art,

<sup>7</sup> It is with an alluring 1801 quote of Friedrich Wilhelm Joseph von Schelling that Whitehead ends his exposition: In the "Philosophy of Nature" I considered the subject-object called nature in its activity of self-constructing. In order to understand it, we must rise to an intellectual intuition of nature. The empiricist does not rise thereto, and for this reason in all his explanations it is always *he himself* that proves to be constructing nature. It is no wonder, then, that his construction and that which was to be constructed so seldom coincide. A *Natur-philosoph* raises nature to independence and makes it construct itself, and he never feels, therefore, the necessity of opposing nature as constructed (*i.e.*, as experience) to real nature, or of correcting the one by means of the other (quoted in: [28], pp. 47–48). Should one decide to construct a genealogy of the contemporary humanities based in natureculture metaphysics, inclusion of Romanticism must therefore be secured.

<sup>8</sup> Whitehead strongly compromises the famous idea about "scientific communities" of Thomas S. Kuhn (see [31])—which is related to Snow's "cultures"—when he states of minds in a groove that "[t]his criticism of modern life applies throughout, in whatever sense you construe the meaning of a community. It holds if you apply it to a nation, a city, a district, an institution, a family, or even to an individual. There is a development of particular abstractions, and a contraction of concrete appreciation. The whole is lost in one of its aspects" ([16], p. 197). This demonstrates that purely descriptive historical work on paradigm-sharing scientific communities is never enough or always/already partial as in "biased".

precisely *because* his engagement with science is an engagement with one nature, the embrace of the total environment as originary. Whitehead demonstrates how Snow's suggestion that "the scientific edifice of the physical world [is] the most beautiful and wonderful collective work of the mind of man" is predicated on an impoverished take on natural science and nature *per se* and that Snow's solution of the two-culture problematic is also impoverished, or even non-existent, as it is not played out on the onto-epistemological level. Beauty cannot only be in, or of, the theorem.

Snow states that "[t]he scientific process has two motives: one is to understand the natural world, the other is to control it" ([15], p. 56). Apart from the fact that the humanities are completely left out here, this statement confirms a dialectic between fundamental and applied science.<sup>9</sup> It should also be noticed that Snow's model is one of explanation (*Erklären*)—predicated on subject-object and word-world distinctions—whereas Stengers puts it differently in *Thinking with Whitehead*:

Where scientific materialism postulates localized entities as the ultimate reference for all explanation, the philosophy of the organism [which is how she refers to Whitehead's work in this quotation] will ask that the concepts to be constructed exhibit the way nature "explains itself" ([22], p. 144).

Whitehead works with a much more expansive starting point *vis-à-vis* Snow. When nature explains itself (*cf.* [9]), there is no room for *a priori* distinctions. Snow, however, is convinced of the fact that a "clashing point between two subjects, two disciplines, two cultures" generates creativity and that there is little of such clashing happening around him ([14], p. 23). Here we see that Snow employs a logic of *relata* and that Whitehead's one nature or total environment is nothing but an afterthought or consequence for Snow. The latter's discussion of the work of those literary intellectuals that *have* tried to understand industrialization by immersing themselves in nature—Henry David Thoreau's 1845–1847 Walden experiment is an example Snow mentions pejoratively ([14], p. 28)—makes clear that Snow considers it to be impossible to encounter the industrial (or the artificial, the artistic) in nature. Thus, in conclusion, whereas Snow points forward to a "third culture" of socially relevant scholarship in the fields of among others social history, political science, and "social arts such as architecture" ([15], p. 58)—which reminds me of the actualized scholarship boosted by the liberalization of Higher Education around May 1968—it would have been more beneficial for him to follow up on his own reference to Whitehead, who situates nature, as it were, as a forethought. This is not to say that Whitehead has been pushed to the limit in my discussion (*cf.* [22], p. 111), but, then again, that was not my concern. It has been my concern in this article to demonstrate how his modest and early-career "nature [is] what we are aware of in perception" ([28], p. 28) revolutionizes Snow's "two cultures" with their grooved minds on the most fundamental level and stimulates, what can be called, a "non-reductive naturalism", an umbrella concept that serves a natureculture metaphysics.

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<sup>9</sup> As it happens, Snow states that "technology is the branch of human experience that people can learn with predictable results" ([14], p. 40). Note that this sentence was written around the same time as Gilbert Simondon formulated his ideas about the fundamental *unpredictability* of technological progress [32]. According to the latter, the potentials of human/non-human, organic/inorganic systems only get to be determined when clicking together.

#### 4. ...through the Study of Beauty...

The consequences of Whitehead recommending the study of art are similar to how his take on the beautiful ultimately cracks the code of Snow and affords a generous engagement. Snow's reductive notion of beauty lays bare how he falls back onto various dualisms, whereas Whitehead is able to propagate *by way of an answer to Snow's problematic* what Haraway has called "naturecultures" and Bruno Latour "collectives" via the (projected!, not undertaken) study of art [29,33].<sup>10</sup> Art is affirmed here to be quintessential to shaking off what prevents us from reaching the nature "that we are aware of in perception". Through an art work, as no other, we encounter nature as one—a nature that is mind-independent (exit extreme form of bifurcation theory) and includes what used to be called primary and secondary qualities (exit intermediate bifurcation)—because a work of art makes itself known *from* the total environment that is originary. With Whitehead, the fact that art has become overcoded as Culture with a capital C (art as an allegorical affair which can only be appreciated when its metaphors can be understood and explained) becomes as reductive as physics theorems because "[a]esthetics precedes cognition" ([5], p. 16) in natural science *and* the humanities. The encountering of an artwork thus precedes the meanings that make a work a piece of art worthy of scholarship (*cf.* [35]).

As an intuitive habit,<sup>11</sup> aesthetic experience in Whitehead revolves around the notion of value. Stengers affirms that Whitehead's take on value—precisely one of those notions that we usually consider to be of Human origin or to be constitutive of the exceptionally Human—has to be integrated in the order of nature ([22], p. 156). She explains: "Value is required by an author capable of using the same term, whether in reference to an electron, a living organism, or an industrial firm. The organism has now come into contact with its requisites" ([22], p. 157). In other words, value has nothing to do with transcendence or psychic additions; rather, it is the condition of possibility of concept formation unaffected by dualism (*cf.* [38]). Value "is what is realized by all that exists, in the sense that what exists succeeds in enduring, succeeds in maintaining its individual way of gathering-together, that is, of making things hold together in a determinate way. Value indicates success in and for itself" ([22], p. 157).<sup>12</sup> The active work of art (not the Subject or its supposed opposite of the mute object) is paradigmatic here as this work stands out in the total environment and preserves itself; it is the perfect example of a Whiteheadian "enduring object" ([5], p. 18) or what Latour calls, with reference to the sciences, an "immutable mobile" [40]. The work of art exhibits a gathering-together of everything that we are prone to singling out as ingredients put in *interacting* boxes by the skillful artist or the masterful

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<sup>10</sup> Somebody who has undertaken such a study is Whitehead's student Susanne K. Langer. See, e.g., her 1953 book *Feeling and Form*, which is dedicated to Ernst Cassirer [34]. Later in this article it will become clear that this reference to Cassirer is food to future diffractive readings or we can conclude that Langer's book itself is a diffractive reading of Whitehead and Cassirer.

<sup>11</sup> Note that Whitehead also shifts the pejorative rendering of habit that we find in the work of Bergson. However, we must not forget that the famous reconfiguration of habit by Félix Ravaisson [36] has been appreciated by Bergson, an appreciation we find in the latter's lengthy *in memoriam* of Ravaisson written in 1904 (see [37]).

<sup>12</sup> Lambert calls this gathering-together "the creation of a territory with the work of art" [39].

scholar. Therefore, the gathering-together is *prior* to or *underneath* the differentiation that unquestionably happens when the artwork affects a viewer (whether a scholar or not).<sup>13</sup>

The gathering-together produces something enduring or immutable through the *intra-active*<sup>14</sup> workings of color patches on a canvas, oxidized bronze for a sculpture, or words in a poem. Such a process of actualization does not contradict the originarity of what happens *inter se* relating luminescent patches, molecules, or words. The gathering-together provokes the enjoyment of vivid values. Whiteheadian process scholar William Dean, for example, states about a poem of William Carlos Williams:

The problem confronted by such a poem is not that of understanding, of explanation or of establishing the rational relation among the logical subjects—wheelbarrow, rainwater, and white chickens. Rather, the problem is that of sheer knowledge, of how to accede linguistically to the aesthetic value in the sheer relationality and facticity before one's eyes ([42], p. 109; cf. [43], pp. 51–53).

Enjoying vivid values comes with perception. But this perception does not start in the mind, or from the Human, as there would be nothing to take account of without the active involvement of the piece of art.<sup>15</sup> The proposition that reveals itself in this process is perceptual knowledge or that what we are aware of. Gathered together and thus standing out in the total environment, Williams' poem with its intra-acting words *makes a mark* and even the viewer qua viewer is a result of this process, again and again. This self-explanatory nature is not dependent on a Subject for the marking ("This work of art represents...") nor are we looking at an external, purely contingent, meaningless physicality (no mark, no perception; no perception, no mark). (Here and now we are knee-deep in Whitehead's philosophy and can only recognize the inclusive level from which Snow's distinctions have come about.)

Rightly, Shaviro, in *Without Criteria*, situates such Whiteheadian work on the level upon which stalemated subject, instrument, and object are mangled (onto-epistemology) and he goes as far as

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<sup>13</sup> Étienne Souriau explains that this process is also at work in the studio of the artist. Making a sculpture, the artist does not plan, but rather, *encounters* his work: "A pile of clay on the sculptor's base. An undeniable, total, accomplished, thingy [*rélique*] existence. But nothing of the aesthetic being exists. Each hand or thumb pressure, each stroke of the chisel accomplishes the work. Don't look at the chisel, look at the statue. With each act of the demiurge the statue little by little breaks out of its chains. It moves towards existence—towards the existence that will in the end blossom into an existence that is intense, accomplished, and actual. [...] Often there is no warning: up to a certain point the finished work is always a novelty, discovery, or surprise. So that's what I was looking for! That's what I was meant to make!" (quoted in: [41], p. 310).

<sup>14</sup> A term coined by Barad [3].

<sup>15</sup> Again, this process is also at work at the poet's desk. As Virginia Woolf wrote in *Orlando*: "He was describing, as all young poets are for ever describing, nature, and in order to match the shade of green precisely he looked (and here he showed more audacity than most) at the thing itself, which happened to be a laurel bush growing beneath the window. After that, of course, he could write no more. Green in nature is one thing, green in literature another. Nature and letters seem to have a natural antipathy; bring them together and they tear each other to pieces. The shade of green Orlando now saw spoilt his rhyme and split his metre. Moreover, nature has tricks of her own" ([44], p. 5). It must have been for this reason that Geoffrey H. Hartmann wrote in his article "Virginia's Web": "Nature [...] is one in which the artist participates" ([45], p. 27).

claiming that “[i]n the vast interconnections of the universe, everything both perceives and is perceived” ([5], p. 27). Perception, therefore, gets an expansive meaning:

Clear and distinct human sense perception [...] is one sort of prehension. A new entity comes into being by prehending other entities; every event *is* the prehension of other events. All this applies [...] not only to the encounter between subject and object, but also to encounters between one object and another, as well as to what is commonly called the “identity” of the individual subject ([5], p. 29).

Shaviro explains that this inclusive “prehension”, which is at the basis of the gathering-together, does not prompt a “representational correspondence between ideas and things” ([5], p. 144, footnote 1), but that “adequacy is a goal that we will never fully reach” ([5], p. 145; *cf.* [46], p. 43).<sup>16</sup> As a goal, “[a]dequacy has to do with extension [...] it continually needs to be constructed, in the ongoing process of philosophical speculation” ([5], p. 144, footnote 1) and, by implication, in all ongoing naturalist processes.

It is here that we have to position Shaviro’s endorsement of the Kantian beautiful, at the expense of the latter’s sublime. The beautiful is not about “the rupture of appearances and the emergence of a traumatic ‘Real’, but rather [about] the ‘purposeful adaptation of Appearance to Reality’” ([5], p. 160). This “*performative* correspondence” [47] allows for underlining how the beautiful is ultimately about, in Kantian terms,

[...] a judgment of taste [that] involves an uncoerced *response*, on the part of the subject, to the object that is being judged beautiful. Aesthetic judgment is a kind of *recognition*: it’s an appreciation of how the object “adapts itself to the way we apprehend it”, even though, at the same time, it remains indifferent to us ([5], p. 2; emphasis in original).

Shaviro continues by stating that this “adaptation” must be read as a Darwinian notion exemplified by the “response-ability”<sup>17</sup> of the orchid and the wasp, an example that has been made famous by Gilles Deleuze and Félix Guattari and stems from the work of evolutionary biologist Rémy Chauvin, who was, as a matter of fact, highly critical of the work of Charles Darwin [51]. During a process of adaptation, “the object *lures* the subject while remaining indifferent to it; and the subject *feels* the object, without knowing it or possessing it or even caring about it” ([5], p. 5; emphasis in original).<sup>18</sup>

<sup>16</sup> Note that the insertion of neo-Kantian philosopher Cassirer pertains to another diffraction offered by this article. I will argue elsewhere that just like Cassirer’s philosophy of technology fits process-philosophies of technicity (*cf.* [47]), his “logic of the cultural sciences” fits the philosophy of the humanities such as it is developed in this article [48]. The important point being that this is *in spite of* the neo-Kantianism according to which his work is usually classified.

<sup>17</sup> This concept is Derridean, Harawayian, and Baradian [8,49,50].

<sup>18</sup> Throughout his book Shaviro is keen on highlighting that he is not on the side of the speculative realists/materialists or object-oriented ontologists, for that matter. For instance, he affirms that “[t]he aesthetic subject does not impose its forms upon an otherwise chaotic outside world. Rather, this subject is itself *informed by* the world outside, a world that (in the words of Wallace Stevens) ‘fills the being before the mind can think’” ([5], p. 13; emphasis in original). The point here is that the speculative realists/materialists would label this a “correlationist” argument (a label that is negatively evaluated) based on Shaviro’s inclusion of the aesthetic *subject*. Shaviro explicitly reads Whitehead as a theorist of “subjectivity as embedded in the world. The subject is an irreducible part of the universe, of the way things happen” ([5], p. xii).

The active role of the non-human in the so-called “judgment of taste” has now been secured: both humans and non-humans are response-able and this relationality can be both inter- and intra-species (*cf.* [49]). Shaviro makes the role of beauty in the break-through of dualisms on the level of concepts, methodology, and schools of thought precise. Putting an end to Cartesianism, positivism, and linguistic constructivism alike, Shaviro’s work on the Immanuel Kant of the *Third Critique*,<sup>19</sup> on Whitehead, and on Deleuze is all about the intertwinement of how and what we know. That *what* we know is intertwined with the *world* makes all of the thinkers just listed into “secular and naturalistic [thinkers according to whom] empiricism is ultimately correct: all our knowledge comes from experience, and there is nothing outside experience, or beyond it” ([5], pp. 23–24).

### 5. ...to Non-Reductive Naturalism in the Humanities

The Darwinian reference—albeit controversial in a natureculture context since often classified along the lines of a crude materialism and a linear teleology—is worth following up as it can provide the jump to the contemporary humanities that I announced in the beginning of this article. First, McAllister has argued that “Darwin felt aesthetic pleasure in viewing scenes in nature as [an intricate network of relations among organisms]” ([26], p. 20). This resembles Whitehead’s originary total environment. Second, in *Becoming Undone*, Elizabeth Grosz comes to the study of beauty by way of her fascination for the work of Darwin as diffracted with Luce Irigaray’s feminist philosophy. Irigaray is “with perhaps Deleuze alone” said to push to “the terms by which we understand our existence as beings in a world larger than ourselves, a world not entirely of our making, whose limits and constraints provide the very limits and constraints of thought itself” ([52], p. 99). In line with Whitehead again, Grosz argues that the push to such a world in humanities scholarship “is not alien to a Darwinian understanding of natural and sexual selection and is actively confirmed by [Darwin’s] claims more than perhaps those of any other theorist of the nineteenth and twentieth century” ([52], p. 104). If nineteenth-century Darwin actively confirms the twentieth-century Irigarayan insight that “nature itself is sexed, made up of (at least) two types of being, two forms of incarnation, two types of sexuality and morphology, two types of activity and interpretation” ([52], p. 104), the oeuvre of Darwin extends beyond itself. It is no longer just to be considered along the progressively linear lines of Darwin leading to socio-biology and sociobiology leading to evolutionary psychology (EP), on the one hand, and twentieth-century and contemporary feminists reconfirming socio-biology and EP by negation, on the other. Grosz makes clear that whereas socio-biology and EP thrive on crude materialism and feminist theory on idealism (*cf.* [53], p. 58), both are grafted upon a(n exclusion of a) Darwinism that, together with Irigaray and Deleuze, affirms that

[n]ature itself is dynamized, historical, and subject to dramatic change. Sexual difference remains the most creative and powerful means by which this transformation is brought about. It is the means by which the natural cultivates culture, rather than culture cultivating nature ([52], p. 168).

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<sup>19</sup> Cassirer talks about value and Kant too, but his Kant is a wholly different Kant ([48], p. 104). This demonstrates that a diffractive reading does not entail the smoothing out of important differences or tensions.

Dynamic nature, in other words, is originary and sexual differing moves the ever-changing marking exercise that is the motor of nature as always/already dynamic. Sexual bifurcation is not, once again, naturalized.

Grosz's work hinges on the insight that Darwin's "[s]exual selection may be understood as the queering of natural selection, that is, the rendering of any biological norms, ideals of fitness, strange, incalculable, excessive" ([52], p. 132). The process of "queering" in this fragment does not uncover presentism on the side of Grosz. Whereas queer theory as a conceptual field is localized in the here and now, its actualized form references not at all a thorough excessiveness in the biological, the cultural, let alone the biocultural sense. "Queer" *can* signify a sexual selection that goes beyond "gene maximization, of the selfish gene's interest in its own perpetuation" ([52], p. 129) as well as beyond identity politics, which is a selection that demonstrates how biology and culture are predicated upon one another:

Homosexuality, like racial diversity or difference, [...] is one of the many excesses that sexual selection introduces to life, like music, art, and language, excesses that make life more enjoyable, more intense, more noticeable and pleasurable than it would otherwise be. ([52], p. 131)

Nature explains itself: sexual selection introduces "aesthetic value in the sheer relationality and facticity before one's eyes". Of course, a well-known example pertains to the peacock's feathers, "an impressive display of beauty" ([52], p. 128).<sup>20</sup>

And indeed, *Becoming Undone* closes with an analysis of art, albeit not in the incarnation of "Darwinian lit crit". Grosz brings in aboriginal art as it is anti-representationalist, yet fully situated and visionary; it asks of its viewers to become *with* the work and, as such, this "[a]rt denaturalizes life" ([52], p. 189) as much as it deculturalizes culture, we could add (*cf.* [55]), as we are not supposed to be reverted back to idealism. Aboriginal art is the art that endures and opens up to the total environment of the Australian land. Grosz claims that "[i]n the work of Aboriginal artists, art becomes ontology" ([52], p. 190; *cf.* [56]). What is particularly striking about Grosz's analyses of the artworks of Doreen Reid Nakamarra and Martu women is how the lines, the paint, and the pictorial elements; sand dunes, hills, lakes, and waves function precisely like those elements that Dean mentioned in his Whiteheadian poetry analysis. The so-called elements are not the *relata*, but what happens is that the art works express sheer *relating* in such a way that what happens on the canvas or the paper is "not in opposition to science, however one may understand this term, but as its underside, as its intuitive complement" ([52], p. 190). It is once again one nature that is originary as it is from here that the colored lines and patches gather together.

In *The Art of Evolution*—a book illustrating the intricate interwovenness of science and art around 1890—Phillip Prodger cites Darwin's take on the matter. The following sentences were published in the fifth edition of *The Origin of Species* from 1869, but had been cooked up in 1838–1839 when Darwin was about to finish the first edition of his world-famous book:

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<sup>20</sup> Grosz alludes at times to the sublime, for instance when she describes her response to aboriginal art "[l]ike when before huge natural wonders, we are perceptually dwarfed" ([52], p. 200). See also [54].

[...] the sense of beauty obviously depends on the nature of the mind, irrespective of any real quality in the admired object; and [...] the idea of what is beautiful, [is] not innate or unalterable. [...] If beautiful objects had been created solely for man's gratification, it ought to be shown that before man appeared, there was less beauty on the face of the earth than since he came on stage. (quoted in: [57], p. 51)

Darwin's first sentence appears to be an anthropocentrism; however, Darwin's entire work centered on "the animal origins of the most complex human mental functions" instead of "ascribing human values to animals" ([57], p. 55). Therefore, it is just like the second sentence a meditation on the *indifference* of the object according to which it is *only* in the encounter happening in the total environment that a judgment of taste makes for something that stays. When we are confronted with an object from a time before man ("archefossils", to speak with Quentin Meillassoux in [58]) and judge it as beautiful, this is proof of the non-linear spatiotemporality of the total environment that we find in art. The endurance of the object is precisely that which is inexpressible in a purely scientific formula—*pace* EP—because such formulae are based on culture as an outside or Other, and on language as deceptively static. (The question is of course to what extent such formulae are scientific and who provides them with that status as histories of science univocally showcase the messiness of scientific practices.)

## 6. Conclusions

For one thing, the attempt to avoid both idealism (the resulting man-made representations come to stand for the thing) and crude materialism (consequentially materials are merely mute objects or resources) suits the contemporary humanities well. The disciplined humanities have always distinguished themselves from a *scientistic* crude materialism, but this argument got them caught up in Snow's "two cultures". In other words, the dualist rendering of the matter and message of art in interpretative work that privileged the "message" over the "matter" reveals that this separation has not allowed humanities scholars to go to the bottom of things (*cf.* [59,60]). In an attempt not to give way to anything crudely material, the Culture-centered humanities have become susceptible to idealism by privileging the linguistic process, because the message of an artwork is supposed to come and to be decoded from a humanist mastermind upon which matter remains mute (here, too). Humanities scholarship that embraces inclusive nature, *i.e.*, that *starts from what is before the eyes of the humanities scholar* in an attempt to follow Whitehead's take on empiricism instead of a take on empiricism (positivism) that follows the logic of the two cultures is scholarship that affirms the originary entanglement of matter and meaning, whether conceptualized as "humanicity" [9], "technicity" [61], "feminicity" [62], "alphabeticity" [63], or, simply and along the lines of this article, nature. It is this kind of scholarship that evokes an inclusive genealogy of the humanities that is no longer (in the words of C.P. Snow) "bewitched by the power of dialectics".

## Acknowledgments

The author wishes to thank Alex Hebing for his generous engagement with a previous draft of this article and the three anonymous reviewers as well as the external editor for their encouraging comments. The research for this article has been sponsored by the Innovational Research Incentives Scheme Veni (275-20-029) of the Netherlands Organisation for Scientific Research (NWO).

## Conflicts of Interest

The author declares no conflict of interest.

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