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The Value of Literature for Consciousness Research and Ethics

Abstract: *The paper proposes to integrate literary studies in consciousness research to develop a strong ethical and existential dimension in the field. More specifically, it considers the value of fictional narrative for developing concepts of selfhood and personal identity that cohere with the reductionist explanations of human consciousness and self in modern empirical consciousness research. My central claim is that looking to the literary representations of human consciousness and existence that reject or are free from conventional essentialist ideas of self, agency, and anthropocentrism can help ‘normalize’ the reductionist scientific descriptions of humans and reduce their psychologically and socio-culturally disruptive impact. The paper uses Virginia Woolf’s *The Waves* as an example, showing how the novel’s non-anthropocentric and non-essentialist conceptions of self and consciousness overlap with materialist theories in neuroscience and -philosophy but present these in a distinctive narrative framework and poetic terms that bring out the inherent emancipatory potential of the materialist explanation of human existence and offer the reader the possibility of relating to these experientially and emotionally.*

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'Literature... is not a kind of antithesis to science. It's science made alive.' — Goldsworthy Lowes Dickinson²

1. Introduction: Developing Consciousness Research as an Interdisciplinary Field

Phenomenal consciousness and subjective experience were until a few decades ago considered solely a philosophical problem.³ The fundamental methodological obstacle for empirical consciousness research is the subjective nature of consciousness, and so the investigation of it has historically been a privilege of the arts and philosophy. And being the only way by which anyone can access and perceive reality with all its various phenomena and as such a precondition for all perception, reflection, and interaction, consciousness has always been a primary area of focus for the first-person explorations of artists and thinkers.

Today, consciousness and its content are, however, becoming increasingly technologically accessible; and from the new possibilities of influencing and manipulating mental states of humans follow new, pressing moral questions and uncertainties. At the same time, new data and theories on the sources of consciousness — such as the discovery of neural correlates of consciousness, the predictive processing theory of brain function, panpsychism, brain–computer interfaces, collective minds-technologies, and other neurotechnologies for human/cognitive enhancement, the concepts of trans- and post-humanism and the new possibilities of bio- and psychedelic human enhancement — are spreading from consciousness research and related new disciplines into other research fields. Many of these radically contradict some of the most common intuitions and conceptions people hold about human nature and existence and open up to dizzying possibilities of change, thereby producing novel forms of uncertainty as well as confronting us with the most fundamental existential questions with a new clarity and urgency.

Common notions of free will, agency, and the concept of a stable and essential self on which basic functions of society, and the consensus on what constitutes right and wrong, responsibility, and guilt

² In a letter to Virginia Woolf, Dickinson remarked that this is what *The Waves* makes clear; quoted in Forster (1962).

³ The form of consciousness to which I am referring here is the qualitative dimension experienced by sentient beings, or, with Thomas Nagel's (1974) widely used definition, what it is like for a physical system 'to be'.

are founded, are being challenged, and the understanding and definition of humans, their moral status, and their relation to nature are changing.⁴

A new conception of what it means to be human is thus emerging, along with new and increased possibilities of influencing and changing brain and mind states. This neuroanthropology is already being absorbed by the wider society and influencing public imagination and discourse. The wave of interest in trans-/posthumanism, AI, and neurotechnology in popular culture, the rise of neo-Buddhism and neo-Stoicism, and the renaissance of psychedelic research and philosophy in the West in the last decades indicate that common beliefs about what constitutes a human being are undergoing a change that involves a shift towards a view that aligns with anti-anthropocentric and reductionist theories in neuroscience. These new neuroscientific theories entail an emancipatory potential connected to the realization of the illusion of free will and agency as well as a potential for mental disturbance, ‘ontological shock’, ‘neuroscientific disenchantment’ (Langlitz, 2016), and existential resignation and despair. As they are further absorbed by society and culture, they are likely to have considerable, and potentially disruptive, psychological and emotional impact on individuals and significant socio-cultural consequences.

In order to respond adequately to the challenges and potential disruptions of the new scientific explanations — i.e. to minimize their disruptive power and exploit their emancipatory potential — the natural sciences and humanities should, I argue, collaboratively and proactively engage in the handling of the emerging neuroanthropology. Consciousness research should be established as a broad field the task of which is not only to gain further empirical access to and control over the human mind, but also to develop a strong neuroethical and -existential dimension.

⁴ It is of course relevant to distinguish between different concepts of self. Anil Seth’s explanation of the self in terms of different levels is useful here: ‘There are low-level perceptions and experiences of being a body and being identified with this object in the world that is my body. There is the experience of having a first-person perspective on the world from which I seem to observe the world. There are experiences of agency and volition: I can experience myself as being the cause of actions, and as intending to do things. Then, building on top of this, finally comes the “I” — the sense of being a continuous individual over time with a name, an identity, and a set of memories, which are in turn shaped and sharpened by all sorts of cultural and social resonances’ (Seth, 2021a).

The need for developing consciousness research as a field that takes into consideration the possible psychological and socio-cultural disruption caused by the cultural implementation of the new neuroscientific anthropology has perhaps been most persuasively argued by Thomas Metzinger. He points to both the seemingly insurmountable obstacles and the absolute necessity of developing a normative theory of consciousness:

Many people have long been seeking a convincing theory about what good and desirable states of consciousness actually are. But it is far from clear if searching for such a theory is even a coherent goal. Does it really make sense to speak of a 'good' state of consciousness?... A general ethics for conscious experience would inevitably have to face all the foundational issues concerning the epistemic status and the universalizability of ethical norms, which any moral philosophy has to confront. Personally, I tend to be rather sceptical with regard to the prospects of such an ethics for consciousness. However, decisions will have to be made. And it is interesting to note how large the scope of normative considerations in this realm would be. They would range from pedagogics to euthanasia, from animal rights to robotics, and from drug policy to media policy. (Metzinger, 2000, pp. 8-9)

My aim in this paper is, in accordance with Metzinger's view and partly in response to his call for the development of a 'consciousness culture and ethics', to identify the role of literary studies in filling the normative vacuum that is appearing with the emergence of neuroanthropology and the increased possibilities of technologically and biomedically altering consciousness. I propose to develop consciousness research as a cross-disciplinary field that integrates disciplines from the humanities in order to establish a strong and existentially viable consciousness-ethical dimension. Here I want to stress in particular the value of literature and literary theory for formulating new notions of self and subjectivity and existential frameworks that are compatible with the new neuroscientific explanations of human consciousness and their undermining of common essentialist and anthropocentric notions of human nature and existence. Literature arguably represents a particularly relevant artform for consciousness studies due to its strong potential for reader engagement, as shown in classical reader response theory (e.g. Roman Ingarden, 1931, and Wolfgang Iser, 1971) as well as in post-structuralist theories of uncertainty (e.g. Paul de Man, 1979, Jacques Derrida, 1981, and J. Hillis Miller, 1980) and the more recent theory of interpretation (e.g. Terrence Cave's, 2016, cognitive theory of reading as 'mind-reading'). And the link between literature and morality and the role of

literature in shaping public attitudes have been recognized and exemplified in philosophy by influential thinkers such as Martha Nussbaum (e.g. 1985; 2010).

My main interest here is the existential dimension of such a wide and multidimensional field of consciousness research and ethics and, in particular, the implications of the undermining of conventional definitions of the fundamental existential categories and concepts of selfhood, agency, free will, and moral responsibility. I argue, moreover, that literary studies should take part in the discussion and formulation of ethical principles and ideals for new biomedical and neurotechnological human enhancement and commit to the critical investigation of what defines ‘good’, ‘desirable’, or ‘meaningful’ forms of consciousness.

Existential and ethical questions related to consciousness, subjective experience, and human enhancement have preoccupied writers for centuries. Thus recognizing that neuroscience is the relative newcomer to this field, I argue for the usefulness of looking for answers in existing ideas, i.e. to investigate literary-philosophical representations of the self and the mind that are compatible with empirical consciousness research in order to deal with both the new neuroethical questions and the fundamental philosophical questions that these re-actualize. Fictional narratives constitute a valuable source in this context; they not only represent a space where common intuitions about personal identity and conventional conceptions of the self as a centred entity with stable and essential features have been confirmed and reproduced, but also a sphere in which anti-essentialist and reductionist notions of personal identity — i.e. definitions that reject the essentialist accounts of self — have been explored and alternative representations of consciousness developed.⁵ The notion of selflessness and its emancipatory potential as well as its problematic implications can be traced from literary modernism with its strong preoccupation with theory of mind and phenomenology, its challenge of the classical self, and the experimentation with alternative forms of subjectivity, dissolution of self, and transformation of consciousness in works by e.g. Musil, Woolf, Kafka, and Sartre, through the late-modern and expressionist period where more disturbing notions of

⁵ For explanations of the essentialist account of identity, personality, and authenticity, see for instance Haslam, Bastian and Bissett (2004), Leuenberger (2021), and Strohminger, Knobe and Newman (2017).

fragmented and de-centred self are developed in works by Botho Strauss, Herman Broch, Beckett, Eugène Ionesco, and others, and into 'postmodern' and contemporary literature which is characterized by a strong interest in post- and transhumanism, AI, new neurotechnologies, as seen in works by Ian McEwan, Siri Hustvedt, Karl Ove Knausgård, Edward St. Aubyn, and Ottessa Moshfegh.

There is a vast field of literary theory of consciousness and mind that can be used for conceptual engineering,⁶ i.e. for developing accounts of the self, identity, and subjectivity that are consistent with the anti-essentialist and anti-anthropocentric explanations and theories in contemporary science. My aim here is to draw the contours of this literary-philosophical field and shed light on its potential for forming new and adequate philosophical concepts, as well as to highlight the crucial role of literature in society and culture as a space for experimentation with philosophical, anthropological, and scientific ideas and its function of enabling humans to navigate the radical uncertainties of scientific progress and of existence as such. This paper is, then, to some degree a meta-study. At the same time, my aim is to describe consciousness research normatively rather than in terms of any current consensus on what constitutes the field. Consciousness research and ethics should, I argue, connect neuro- and cognitive science and philosophy with disciplines as diverse as literature studies, applied ethics, psychology, anthropology, cultural studies, history, and theology and commit to facilitating a deep, collaborative engagement with neuroscientific insights and consciousness-ethical and -existential problems across these disciplines.

To illustrate the potential of literature specifically to contribute to the philosophical and ethical tasks and challenges in contemporary consciousness research — as a first step in this wider integration of the humanities — I use Virginia Woolf's *The Waves* (1931/2000) as an example. The representation of self-transgression, undecidability of identity, and the indistinction between phenomena in Woolf's work entail a poetic conceptualization of the materialist view of human beings and an existential framework that give depth to the reductionist account of self that much new neuroscience supports and invites the

⁶ Conceptual engineering is described by David Chalmers as 'the design, implementation, and evaluation of concepts' including 'de novo conceptual engineering (designing a new concept) as well as conceptual re-engineering (fixing an old concept)' (Chalmers, 2020).

reader to relate to these ideas experientially and emotionally, rather than critically and analytically.

2. The New Neuroscientific Explanations of Human Consciousness

Reconciling beliefs in the existence of anything like a centred and delimited self, soul, or similar nucleus of agency or personal essence with modern neuroscience is becoming increasingly difficult. Neurocentrism is on the rise and with it the explanation of the self as a biological function and a process. The *scientific* redescription of what is commonly experienced *subjectively* as something centred, persistent, and essential as, in fact, something unstable, inconsistent, and in constant flux goes back to thinkers like Ernst Mach, William James, the school of functional psychology, and Hume's 'bundle theory' of the self. And the worries about the self that can be raised in extension from certain philosophical views, such as reductionist and sceptical empiricism, are confirmed and enhanced by much modern neuroscience. In the following I outline some of the relevant developments and advances in recent neuroscience and -philosophy which is the context into which I want to bring literary studies and *The Waves*. These theories come from very different domains, do not form part of any unified neuroscientific position or paradigm, and some of them represent highly contested theoretical positions. They do, however, all deal with consciousness in a neuroscientific and -philosophical context and have in common that they bring with them serious challenges to conventional ideas of self, personal identity, agency, and moral responsibility, i.e. to fundamental ideas that guide our everyday behaviour and conversations and on which some of the most established beliefs about meaning, freedom, responsibility, right, wrong, human moral status, guilt and punishment, and, accordingly, many of the concrete laws and structures of societies are founded.

The neuroscience of the self is today an expanding area of study, and while there is no wide consensus in the engaged disciplines, several prominent researchers are rejecting the conventional conceptions of self, personal identity, agency, and free will. Thomas Metzinger and Anil Seth explain that while the experience of selfhood is a significant part of conscious experience, it is in no way a precondition for or source of consciousness. Metzinger points out that neuroscience shows that 'the property of self-hood, of "being someone," is not a supernatural essence, but basically a biologically

anchored process' (2000, p. 7). Basing his view on the predictive processing theory of brain function, Seth points to the neural and physical basis of consciousness and to the evolutionary purpose and usefulness of the illusion of coherence and stability of self and of agency/free will. Self and free will/agency are experiences which, like colours, have a perceptual character of *seeming* real: 'the predictive machinery of perception when directed at the self makes it seem as though there really is a stable essence of "me" at the centre of everything' (2021b, p. 223); but 'just as experiences of redness are not indications of an externally existing "red", experiences of unified selfhood do not signify the existence of an "actual self"' (*ibid.*, p. 181). As Seth explains, evolution has made us blind to the processual and non-essential form of our existence because the illusion of a stable and unified self is useful for survival. The sense of the self as a stable centre of essence and agency rather than a bundle of ever-changing perceptions is a false intuition fostered by the subjective blindness to changes; in fact, 'the self is not an immutable entity that lurks behind the windows of the eyes, looking out into the world and controlling the body as a pilot controls a plane. The experience of *being me*, or of *being you*, is a perception itself — or better, a collection of perceptions — a tightly woven bundle of neurally encoded predictions geared towards keeping your body alive' (*ibid.*, p. 181).

Moreover, modern cognitive neuroscience shows that we are conscious of only very little of what is going on in our mental lives (Levy, 2014).⁷ Cases of split-brain patients, locked-in syndrome, and anaesthesia awareness indicate that forms or 'islands' of consciousness can lie beyond the awareness of the reporting subject in the human brain. Most of a person's mental processes are unconscious, and accordingly a person's behaviour and actions are to a great extent determined by unconscious and subpersonal processes (Metzinger, 2000, p. 7). This poses a challenge to the common belief in agency and free will and by extension to the notions of moral responsibility and of punitive guilt, indicating that determinism is true.

Such neuroscientific anti-essentialist and materialist explanations of self and free will also challenge common notions and intuitions of the

⁷ 'The contents that constitute our identity are broadly distributed in the mind, and the vast majority of these contents are at any one time nonconscious. Consciousness is a tiny, and very frequently unrepresentative, portion of our mental life' (Levy, 2014, p. ix).

special moral status of the human species and entail an undermining of the anthropocentric understanding of the world. Seth also notes these implications of modern neuroscience. He inscribes his theory of consciousness into the wider contemporary neurophilosophical paradigm which he sees as the natural and inevitable latest step in a continuous scientific progressive movement away from human exceptionalism and towards a naturalistic explanation of the human mind and existence: ‘With each new advance in our understanding comes a new sense of wonder, and a new ability to see ourselves as less *apart from*, and more *a part of*, the rest of nature’ (2021b, p. 16) and ‘the quest to understand consciousness places us increasingly within nature, not further apart from it’ (*ibid.*, p. 311).

The notions of self, agency, and free will and the anthropocentric and human-exceptionalist views are also radically challenged by reductionist empiricist positions in philosophy, such as Derek Parfit’s (1984) influential account of personal identity, and, more recently, certain panpsychist theories.

Panpsychism comes in various versions, but is broadly speaking the idea that consciousness does not arise from matter but is more fundamental, present in and even a precondition for, and as such perhaps indistinguishable from, all matter. Historically, it has largely been rejected by mainstream neuroscience and cognitive theory as an extreme metaphysical theory, in part because of the seeming unreasonableness of the claim that all objects have consciousness as well as the un-testability of its predictions (Seth, 2021c). But as Annaka Harris points out, with reference to Seth’s theory of consciousness and Philip Goff’s (2019) version of panpsychism, the question of whether objects should be considered conscious is based on a misleading anthropomorphic view that leads to ‘a projection of separateness in isolated packages’ and the misconception that the self is a separate and delimited entity simply because it subjectively/experientially appears as such (Harris, 2021). The criticisms of panpsychism thus tend to reproduce the mistaken view of the self as a permanent structure of consciousness with fixed boundaries, i.e. consciousness is assumed to be distinct and separate because it *feels* distinctive.

Predictive processing theory and the modern neuroscientific anti-essentialist explanation of self allow for a rejection of this ascription of consciousness to a delimited subject (or object) and leads to the view that there is in fact no subjectivity to which consciousness could be delimited. Harris thus argues that ‘the claim that qualia appear to a

subject in the universe' is mistaken (*ibid.*, p. 135). There are no centres of self or subjectivity to which consciousness could be tied, only qualia or content appearing in the world/universe which is experienced by unbounded consciousness that is (misleadingly, but evolutionarily usefully) experienced as private/subjective: 'In terms of privacy, when we realize that there is no solid centre we can label "you" or "me", it makes no sense to talk about where my consciousness ends and yours begins... Your perception of yellow isn't "yours". It's simply an experience of yellow arising in the universe, derived from interacting forces and fields. It's not private in the typical sense. There is no self for it to be private for' (*ibid.*, p. 136). Panpsychism thus troubles the distinction between mind and matter and, accordingly, between persons and surroundings — and by extension the idea of the superiority of human consciousness and moral value over that of other species.

The possibilities arising from new neurotechnologies also entail challenges to common existential categories and fundamental human self-conceptions. The possibility of brain-to-brain interfaces and brain-computer-brain interfaces allows for forms of collective minds, swarm intelligence, and collective combined information processing and action. Such technologies make possible phenomenological and rational unities and integration between persons. They entail a move away from the binary understandings of agency and responsibility and towards widened notions of collective minds, collective agents, and collective responsibilities and thereby challenge common intuitions and ideas about independent and delimited selfhood, agency, autonomy, and moral responsibility.

Moreover, with the identification of the correlation between the brain and experienced phenomenal 'content' comes the possibility of more directly altering states of consciousness by neurotechnological intervention. Research into the neural correlates of consciousness (NCC) are increasingly mapping the correlation between the physicality of the brain and the qualities experienced subjectively, and this opens up new possibilities of influencing and manipulating the human brain and of changing people's experiences:

Once we know the neural correlate of a specific kind of phenomenal content, we can, in principle, selectively switch this content on and off... Biological psychiatry, neuro-pharmacology, and medical neuro-technology, as today manifested in new forms of short-term psychotherapy or new generations of mood enhancers, in the transplantation of embryonic nerve cell tissue or the implantation of brain prostheses, are

just the tip of the iceberg. Many of the neuro- and information-processing technologies of the future are going to be consciousness technologies, because their main goal will be to directly change the phenomenal content of their targets' mental states. (Metzinger, 2000, p. 8)

While there are obvious advantages to this in healthcare (such as extended forms of pain relief), there are also major ethical challenges entailed. If we accept the view that we have a duty to use these new opportunities for the enhancement of well-being and morality, this raises the difficult but unavoidable question of what constitutes good/desirable states of consciousness. The mapping of NCC is happening at the same time as the need for enhancing human morality is becoming more evident. Such moral enhancement is arguably even necessary if societies are to transfer to a sustainable form of existence and avoid destruction by the new technologies, and if the survival of the human and other species and conservation of the planet are to be secured: 'The exponential growth of advanced technology makes our lives much better or it may afford the means of our destruction. Things might get very much worse than they are today. The embracement of transhumanism and posthumanism offers one potential means of addressing this' (Persson and Savulescu, 2010, p. 668).

From the possibilities of neurotechnological human enhancement follow possibilities of various forms of trans- or posthumanism — concepts which also challenge the idea of the moral superiority of the human species and further undermine the anthropocentric view and the distinction between human consciousness and other forms of consciousness, in this context technological and artificial forms. As Clarke and Savulescu (2021) point out:

Technological developments are throwing up new and controversial cases, which will require our consideration... If we are pushed to rethink our assumptions about moral status to accommodate artificial intelligence, cyborgs, human brain organoids, human non-human chimeras, post-humans, and uploaded minds, then we should consider the possibility that some of these beings and entities have a level of moral status below FMS [Full Moral Status]. We should also be open to the possibility that some of these beings and entities might have a higher moral status than do ordinary adult humans. (p. 2)

Similarly, Persson and Savulescu offer an implicit argument against human exceptionalism in their criticism of the speciesist approach to moral status. They point to how biomedical moral enhancement is

likely necessary for the survival of humans and show the intuitive fear of the notion of the posthuman to be unnecessary:

If human civilization is to avoid destruction or deterioration, human beings need to become more human in the moral sense. Such morally enhanced humans may be called transhumans or posthumans. We do not see that, if this change has to be brought about partly by biomedical means, this would necessarily result in beings that are no longer human in the biological sense. But even if that were to be the outcome, this would be of no significance, since species membership is unimportant. And we have no reason to regret changes that would make us non-human in a biological sense. There is nothing special or valuable about human beings in the biological sense. To be more 'human' in the normative sense of the term, in terms of those capacities that afford members of our species moral status and value, may require an evolution to posthumanism. (2010, p. 668)

3. Poetic Self-Transgression and Reductive Notions of Personal Identity in *The Waves*

There is a clear strand in literature that links self-transgression and states of selflessness to increased well-being and existential emancipation as well as to enhancement of morality. Many of the ideas formulated by some of the most prominent writers and thinkers of the last centuries can be viewed as making up a vast field of literary-philosophical theory of mind, including theories and works by Schopenhauer, Nietzsche, Sloterdijk, Tolstoy, Sebald, Kafka, Proust, Musil, Rilke, Woolf, Joyce, and, more recently, Siri Hustvedt, Edward St. Aubyn, Ottessa Moshfegh, and Ian McEwan. These writers share a strong general interest in theory of mind, epistemology, phenomenology, and subjectivity; and they specifically connect self-transgression and anti-anthropocentric perspectives with the question of existential meaning, well-being, and the future. In their works, desirable states of consciousness are often represented in terms of contemplative alertness, attentional presence, absence of self, self-transgression, and empathy, in both an aesthetical and ethical sense. Descriptions and concepts of alternative mind-states and selfless modes of being abound in their works: 'der andere Zustand' (Musil), 'das Subjekt des reinen Erkennens', 'das bessere Bewußtsein' (Schopenhauer), 'Epiphany' (Joyce), 'die intransitive Liebe' and the description of extra-human modes of sublime consciousness (Rilke), a radical transformation of the normal state of consciousness in a gnostic and eschatological context (Kafka). Many of these transcendental, self-

transgressive, and altered states bear strong resemblance to the materialist descriptions of the self and new neurophilosophical theories of consciousness.

Virginia Woolf's writing is exemplary of this tendency as well as of the general tendency in modernist literature to deliberately integrate ideas from the field of science into literature.⁸ Woolf drew from contemporary sources epistemological lessons related to in particular relativity, wave-particle duality, and the interdependency of observer and observed phenomena (Livingstone, 2018, p. 69). These theories of uncertainty of physical phenomena and epistemology from the scientific field resonated with the notions of undecidability and fluidity of identity and consciousness that Woolf herself had already developed (Westling, 1999, p. 855), and Woolf used them in her writing to extend her experiments with narrative structure and representation of consciousness and identity.

The Waves conveys a non-anthropocentric and non-essentialist conception of self, consciousness, and identity which largely coheres with reductive theories in neuroscience and -philosophy, but which is presented within a distinctive, fictional narrative framework and in highly poetic and abstract terms. The work can be described as a coming-of-age story rendered via a method of 'consciousness-realism'. It traces the lives of six characters — Rhoda, Susan, Louis, Neville, Jinny, and Bernard — from their early schooldays together into adulthood where psychological and existential connections between them are continued despite their physical and geographical separation.

The Waves uses quantum physical ideas to describe consciousness and identity as processes. It combines the idea that all matter is made up of waves with the poetic metaphor of the sea-wave and uses this to dissolve the distinction between the identity of a character and other natural phenomena. It establishes an undecidability of human and personal identity and an indistinction between phenomena: between human identities and between humans and nature. Grammar and style are used to blur the distinction between speech and thought and between the consciousness and identities of the characters in the novel. The novel uses the present tense and abstract lyricism to give an effect of representing the experiences of the subjects immediately

⁸ The influence on Woolf's writing of certain notions from science has been broadly recognized; see for instance in Beer (2000), Crossland (2018), Whitworth (2001), and Livingstone (2018).

and subjectively in their present moment. Here is, for instance, the voice and perspective of the socially and existentially insecure Rhoda at a social event:

'I shall edge behind them,' said Rhoda, 'as if I saw someone I know. But I know no one. I shall twitch the curtain and look at the moon. Draughts of oblivion shall quench my agitation. The door opens; the tiger leaps. The door opens; terror rushes in; terror upon terror, pursuing me. Let me visit furtively the treasures I have laid apart. Pools lie on the other side of the world reflecting marble columns. The swallow dips her wing in dark pools. But here the door opens and people come; they come towards me. Throwing faint smiles to mask their cruelty, their indifference, they seize me. The swallow dips her wings.' (*The Waves*, p. 78)

The narration is mimetic in that it produces a form of psychological realism, or consciousness-realism. The passage is representative of the general vacillation between speaking and thinking, the concrete and the abstract, immediate experience and associations, prose and poetry in the soliloquies by the six characters which the novel is made up of. A thematic, narrative, and stylistic similarity of the characters' modes of expression and repetitions of tropes make their voices merge; the distinctions between the soliloquies dissolve as each is subsumed under the overall wave-like narrative motion of the novel. The narration and repetitive structure thus reflect the central idea and intention of the work: distinctions between human identities and minds and between humanity and nature are broken down, and (the notion of) a fixed and delimited self and consciousness is dissolved. From the novel arises one composite, integrated mind.

The characters themselves reflect explicitly on this experienced sense of lack of borders amongst themselves and in relation to nature. Bernard insists on a uniting connection between subjects and a form of social singularity: 'I do not believe in separation. We are not single' (pp. 49–50). Arriving into London with the train among all the other travellers, he observes: 'Over us all broods a splendid unanimity. We are enlarged and solemnised and brushed into uniformity' (p. 83). Neville too notes this indistinction between identities and observes as Bernard approaches him: 'I become not myself but Neville mixed with somebody — with whom? — with Bernard? Yes, it is Bernard' (p. 62). After having played tennis, Jinny feels her pulse beating, drumming in her body, and in her mind the border between her body and the universe is dissolved, rendered via metaphors of water in motion: 'There is nothing staid, nothing settled in this universe. All is

rippling' (p. 33); as her physical excitement recedes, she thinks: 'Now the tide sinks... the brisk waves that slap my ribs rock more gently' (p. 33). Susan, having returned to her childhood home after school in Switzerland, similarly conceives of herself as indistinguishable from the surroundings: 'At this hour, at this early hour, I think I am the field, I am the barn, I am the trees... I cannot be divided, or kept apart' (p. 72). And as Louis thinks of 'rippling' fields of corn, he conceives of himself in terms of nature: 'I should be transient as the shadow on the meadow, soon fading, soon darkening and dying there where it meets the wood, were it not that I coerce my brain to form in my forehead; I force myself to state, if only in one line of unwritten poetry, this moment' (p. 48), thus describing his state of being as a movement in the form of a sustained and continuous shifting between modes, and, at the same time, dissolving the concreteness of himself and the distinction between him and nature.

Louis indicates that it is language and the activity of thinking that prevent him from being and remaining in the transient and indistinct state, and this idea of language as formative of identity is central to *The Waves*. Reflecting Heisenberg's theory of observer determination, concreteness of identity comes about by way of human observation and description, and the characters only take on definite form when seen and represented linguistically by others. As Bernard speaks of Neville, he also creates him: 'Let me create you. (You have done as much for me.) You lie on this hot bank, in this lovely, this fading, this still bright October day, watching boat after boat float through the combed-out twigs of the willow tree. And you wish to be a poet; and you wish to be a lover' (p. 63). Bernard in turn remarks about Neville's observation of him: 'To be contracted by another person into a single being — how strange' (p. 66). Bernard offers some opposition to this function, however, stating that 'I am more selves than Neville thinks. We are not as simple as our friends would have us to meet their needs' (p. 66) — suggesting that this concretization of the person is experienced as restrictive. The characters willingly merge with other people and non-human natural phenomena. They are inherently undecidable and come to embody possibility, but the flow is stopped and the undecidability resolved when they find themselves observed in social situations and thereby fixed and reduced to a single identity. Rhoda thus observes about herself, in the social situation referred to above: 'Like a ribbon of weed I am flung far every time the door opens. The wave breaks. I am the foam that sweeps and dills the

uttermost rims of the rocks with whiteness; I am also a girl, here in this room' (p. 80).

In addition to cohering with specific quantum theoretical ideas in Woolf's contemporaneity, the notions of selfhood and consciousness in *The Waves* align with various scientific and philosophical theories and ideas from the field of consciousness studies, such as the reductionist account of personal identity in philosophy represented, for instance, by Parfit, the doctrine of no-self or non-duality in Buddhist theory, the panpsychist (and Buddhist) view that consciousness is fundamental and conspicuous, the materialist explanations of consciousness and self in predictive processing theories of consciousness, the integrated information theory of consciousness, the ego-dissolution experienced in psychedelic states and the potential for psychedelic human enhancement explored in recent research on psychedelics, the states of absorption/non-duality/tonic alertness/unpartitioned epistemic space described by Thomas Metzinger (2020) as Minimal Phenomenal Experience, as well as the idea of the fundamental entanglement of the natural world represented by Merlin Sheldrake (2020), eco-theory, ecocriticism and deep ecology, and the ideas of the ecological self and biocentric egalitarianism represented by e.g. Arne Næss (1989) and Timothy Morton (2016). *The Waves* presents these ideas not in strict scientific but in lyrical terms, adding a poetic, aesthetic, as well as existential dimension and making them experientially available and emotionally relatable. The novel shows that the adoption and acceptance of reductionist accounts of self and consciousness need not have an effect of estrangement or dehumanization, but entail a possibility for existential emancipation and increased well-being by offering the individual a way out of the existential claustrophobia of narrow, static, and fixating concepts of identity and the restrictive and prejudiced views of and identification by others. By use of fictional and literary techniques, *The Waves* draws the reader in and offers engagement and exploration through immersion in a story and identification with its characters. It prompts the reader to not only critically reflect on these ideas, but to experience them.

The Waves is thus not separated from science, theory, and philosophy, but connected, both consciously to specific scientific ideas in Woolf's contemporaneity and unconsciously to deeper and more perennial notions of and intuitions about self, consciousness, and human existence. The novel illustrates how literature forms part of a larger cultural system of reciprocal influence and exchange of ideas.

Literature functions as a sphere for exploration of scientific and philosophical ideas and investigation of their possible practical, psychological, societal, and existential implications, i.e. a space in which scientific research and theories are tested and developed through the use of narrative, aesthetic, metaphors, and tried out within various philosophical, existential, and ethical frameworks and by application on a variety of human characters and in the context of different possible social situations and cultural contexts, by both the author of the work and its readers. *The Waves* illustrates the potential of literature, and fictional narrative as such, for enabling humans to better and more deeply understand the possible ethical and existential implications of scientific progress and for enhancing the human capacity for handling new moral questions, confusion, and anxiety and navigating the fundamental uncertainty of existence.

4. Uncertainties and Possibilities of the New Scientific and Technological Advances

Two typical and contrasting reactions and responses to the neuroscientific explanation of consciousness and the new neurotechnological possibilities can be observed in the current research climate (as well as in the broader public cultural sphere): one of embracement, existential relief, and emancipatory excitement; and another of resistance, moral confusion, worry, and existential dread. *The Waves* falls into the former category, focusing on the positive, liberating effects. But to adequately respond to the new neuroscientific insights into consciousness and the emerging neuroanthropology, the field of consciousness research should acknowledge both these possible responses and take into consideration the existential and psychological challenges, i.e. the potential for mental disturbance, existential dread, resignation, and despair as people's basic assumptions about the nature of reality and themselves are being challenged and changed, as well as the emancipatory potential of the rejection of conventional anthropological and humanist existential conceptualizations.

The latter intuition is linked to an anticipation that considerable enhancement of human well-being and morality will naturally follow from the rejection of the belief in a stable, centred, and delimited self and fixed notions selfhood, the loosening of the concepts of subjectivity and personal identity, as well as of free will/central agency/autonomy and the doing away with the anthropocentric worldview. The expectation is that this will lead to a reduction of individual

psychological and existential suffering and an expansion of the human capacity for empathy beyond its limited evolutionary function and thus to a strengthening of the human identification with the fundamental interdependence between beings and the natural surroundings. On this view, the acceptance of the reductionist neuroanthropology is expected to bring about an enhancement of human morality and to benefit human individuals, collectives, and society at large as well as other sentient beings and the environment as such. This potential for emancipation and human enhancement is also what Parfit points to when he argues that personal identity does not matter:

Is the truth depressing? Some might find it so. But I find it liberating, and consoling. When I believed that my existence was such a further fact, I seemed imprisoned in myself. My life seemed like a glass tunnel, through which I was moving faster every year, and at the end of which there was darkness. When I changed my view, the walls of my glass tunnel disappeared. I now live in the open air. There is still a difference between my life and the lives of other people. But the difference is less. Other people are closer. I am less concerned about the rest of my own life, and more concerned about the lives of others. (Parfit, 1984, p. 281)

Using the Parfittean theory of personal identity and connecting it to the no-self doctrine in Western and Eastern philosophy, Danaher and Petersen (2020) more recently have pointed to the existentially liberating and socially beneficial potential of leaving behind individualism and entering a form of hive-mind society. They argue that:

Far from representing a scary and alien ideal, the hivemind society should be counted among the axiological possibilities for the future of humanity... there are reasons to think that aspects of the hivemind society are desirable. Pursuing it could enable stronger forms of intimacy, problem-solving and goal achievement, moral enlightenment and moral behaviour, while at the same time leaving open most of the traditional paths to finding meaning in life.

The connection between altruism and ego-dissolution also constitutes a central interest and expectation in contemporary psychedelic research. Recent research into medical and recreational use of psychedelic substances suggests that there is indeed a connection between, on the one hand, increased well-being and sense of meaningfulness and, on the other, the anti-essentialist view of self and an anti-anthropocentric and determinist worldview (Timmerman *et al.*, 2021). While studies of the benefits of using psychedelic substances have so far mainly focused on treatment of mental health conditions (such as depression, PTSD, and various forms of addiction), the research

suggests that psychedelics hold a considerable potential for general human enhancement and for causing lasting positive changes in personality, a strengthened sense of meaningfulness, increased capacity for empathy, and stronger identification with and investment in other people, other sentient beings, and nature.⁹ Psychedelic research thus sheds light on the positive effects of rejecting the conventional essentialist notions of self and identity and indicates that the fear of neuro-disenchantment and moral and socio-cultural disruption is exaggerated. In this context it appears that the reductionist neuroscientific explanation of human consciousness, self, and identity may be compatible with existential frameworks and psychological self-conceptions that support and are conducive to well-being and moral behaviour. This is supported by the popularity of meditation, mindfulness, and the interest in psychedelics in contemporary culture — which suggest that the anti-essentialist explanation of the self, determinism, and anti-anthropocentrism do to some degree resonate positively in contemporary culture.

The other typical response to reductionist neuroscientific explanations is predominant in neurophilosophy and -ethics. Metzinger shows acute awareness of the problematic psychological, existential, and cultural effects and argues that ‘just as in technology assessment, where one tries to calculate potential dangers, unwanted side-effects and general future consequences of new technologies introduced into society, we need a new kind of anthropology assessment. We have to start thinking about the consequences a cultural implementation of a new image of man might have’ (2000, pp. 6–7). He worries that materialist views may lead to a demystification of humans, existence, and our relations to others; and he anticipates a risk of an increased division between groups who cling to religion and the old anthropology and those who accept the new scientific consensus and materialist explanations of humans, as well as an increase in other forms of social and economic inequality: ‘Existing gaps between the rich, educated, and secularized parts of global society and the poor, less informed,

⁹ For instance, a recent study investigated the belief that ‘psychedelic drugs induce lasting changes in metaphysical belief’ and its results imply that psychedelic use causally influences metaphysical beliefs by shifting them away from ‘hard materialism’ and physicalist views and towards panpsychism and determinism (Timmerman *et al.*, 2021). See also Earp, Douglas and Savulescu (2017), Letheby (2021), Earp (2018), and Lange and Marie (2021).

and religiously rooted parts may widen in a way that proves to be unbearable or outright dangerous' (*ibid.*, p. 7).

Flanagan and Caruso (2018) present these issues in terms of a third wave of existentialism. Following the first wave of existentialism of Kierkegaard, Dostoevsky, and Nietzsche, which was related to religious disillusion and expressed a 'foundational anxiety', and the second wave of mid-twentieth-century existentialism of Sartre, Camus, and others, which responded to 'the shock of coming face to face with the moral horror of nation state actors and their citizens' and expressed a 'human nature angst' (*ibid.*), neuroexistentialism is 'a recent expression of existential anxiety over the nature of persons... neuroexistentialism is caused by the rise of the scientific authority of the human sciences and a resultant clash between the scientific and the humanistic image of persons' (*ibid.*, pp. 1–2). According to Flanagan and Caruso, the scientific view of contemporary neuroscience 'results in the same feeling of drift and anchorless search for meaning that is a hallmark of all existentialisms' (*ibid.*, p. 5). They note that the materialist/physicalist explanation is already influencing the imagination of the wider public with effects of destabilization of a Kierkegaardian kind: 'For most ordinary folk and many members of the nonscientific academy, the idea that humans are animal and that the mind is the brain is destabilizing and disenchanting, quite possibly nauseating, a source of dread, fear, and trembling, sickness unto death even' (*ibid.*, pp. 4–5). With reference to Chalmers' definition of the main problem for empirical neuroscience, they present this existential challenge as 'the really hard problem', explaining it as 'the special problem for those of us living in the age of brain science; of making sense of the nature, meaning, and purpose of our lives given that we are material beings living in a material world' (*ibid.*, p. 9).

While such new forms of moral and existential confusion may be anxiety-provoking, humans have a capacity for coping with uncertainty. As Clarke and Savulescu (2021) point out, new forms of moral uncertainty and confusion related to post- and transhuman forms should and likely also will be confronted and are not valid reasons for avoiding technological progress or research into advanced forms of human enhancement:

It could be argued that we have a demonstrated capacity to tolerate significant moral confusion, and the mere presence of another potential source of moral confusion should not be of any special concern to us... The creation of artificial intelligence, cyborgs, human brain organoids, human non-human chimeras, post-humans and uploaded minds all have

the potential to cause new forms of moral confusion. It is possible that all human societies will collectively agree to avoid creating any of these sorts of beings, and thereby avoid adding to our moral confusion, but this seems unlikely. It also seems unlikely that all of us would stick to such an agreement, were we to make it. So, it looks like we will need to get better at either learning to tolerate, or learning to resolve, moral uncertainty and moral confusion. (*ibid.*, pp. 12–13)

Indeed, the human capacity for dealing with uncertainty has been explored and thematized in literature for as long as narrative has existed, along with both the unpleasantness and excitement that uncertainty causes (Høeg, 2021; 2022). Keats' famous term of 'negative capability' designates precisely the enhanced ability of some writers, such as Shakespeare, to accept and remain in uncertainties, doubt, and mystery, and it is just one among many literary-theoretical notions that deal with precisely this ability in both writers and readers. From literary impressionism, new criticism, and through post-structuralism and deconstruction, literary theory in the late nineteenth and twentieth century has been keenly interested in the effect and value of uncertainty of meaning, morality, and of existence as such (Høeg, 2022).

5. Conclusion

Literature has been and remains a significant space in human culture for experimentation with and investigation of philosophical, anthropological, and scientific ideas and fundamental and new moral uncertainties. As such it has a crucial function in society and culture in enabling people to understand new ethical challenges that arise with any scientific and technological progress and deal with the general uncertainty and confusion of existence, and in experimenting with and developing existential and ethical strategies for the present and the future. Looking at the existent literary representations of human consciousness, identity, and existence that reject or are free from conventional notions of self, agency, free will, and anthropocentrism, and as such conducting a form of conceptual engineering through literary works such as Woolf's *The Waves*, holds a considerable potential for 'normalizing' the new scientific reductionist explanations of human consciousness.

There is in the literary-philosophical field of theory of consciousness and mind an instinctive sensing of the neuroscientific insights into human consciousness. This indicates that anti-essentialist and materialist conceptions of self and consciousness have always existed.

There can be found in literature alternative positions to the most common and conventional ones that might not be as counter-intuitive, 'unnatural', or disturbing as is often assumed.¹⁰ As an initial step in the establishment of an interdisciplinary approach to consciousness research and ethics, I am proposing here that such fictional literary representations can and should be used to develop new notions of self, subjectivity, identity, freedom, and consciousness, and tenable existential positions in the face of the ethical problems and uncertainties related to empirical consciousness research and the new biomedical and technological possibilities of influencing mental states. The existent literary representations of anti-essential notions of self, anti-anthropocentrism, self-transgression, and determinism in works such as Woolf's *The Waves* and many others, from modernism, through postmodernism, and into contemporary literature, can help curb the psychologically disruptive potential of neurocentrism and realize the emancipatory potential.

The interdisciplinary approach to consciousness studies and ethics I am proposing here thus entails the view that the influence should go both ways, i.e. that writers should also be encouraged to learn about the science and the philosophy and to respond to it. Literary studies, the humanities, and creative and fiction writing should take part in the formulation and discussion of the ethical principles and ideals for new biomedical and neurotechnological human enhancement and commit to the critical investigation and careful consideration of what defines 'good', 'desirable', or 'meaningful' forms and states of consciousness.

The literary sphere is one in which common-sense notions of morality, fundamental intuitions about existence, and popular cultural attitudes to and hopes and fears about the future of humanity interact with the newest scientific ideas and theories. Literature has much in common with philosophy and practical ethics. But literature also significantly differs from philosophy, for instance in that its narrative form and aesthetic aspects allow for more extensive experimentation with and application and trial of philosophical positions and ideas and for a more multifaceted testing and exploration of the psychological, existential, and socio-cultural implications of different moral

¹⁰ Deco, Kemp and Kringelbach (2021) also point to how art displays such human and subjective intuitions of scientific/objective facts/truths. In a recent essay, they look at 'the deeper cognitive level of "structural intuitions" in which instinctive sensing of underlying patterns provide common starting points for certain kinds of art and science' (p. R1).

positions. Literature makes possible a move from concept to practice, from ideas to experience, and offers a deeper and more experiential way to engage with and more poetic ways of thinking about and relating to philosophy and science. As such its inclusion, together with philosophy and various other disciplines with strong existential and moral dimensions, should be considered a highly valuable if not necessary attribution to the field of consciousness studies.

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