

eManuscripts in progress

establishing a digital infrastructure for Joyce's extended mind at work

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MODERNIST LITERATURE HAS LONG BEEN CONCEIVED as “internalist” literature. Even the Modernists themselves seemed to embrace this idea and eagerly claimed to “look within.” Virginia Woolf’s own rhetoric in this context is striking. An internalist approach to literature would represent life in a much more exciting way.² According to Woolf, the mind’s multitude of impressions form an “incessant shower of innumerable atoms” that shape the “luminous halo” that life really is.³ Redirecting the focus from the external world to the internal world of the mind therefore makes literature a lot more interesting. Nowadays however, analysing modernist texts as inward-looking seems to have become a “critical commonplace” in the study of literary modernism.⁴ While Woolf’s work often thematises the workings of the mind, recent criticism has made clear that this thematisation may not involve an inward turn at all. What Woolf did in, for instance, “The Mark on the Wall” is not simply look within, but describe a mind that is in constant interaction with the outside world. Cognitive philosophers have investigated the nuances of this interaction and have called it “enactivism,” “cognitive integration,” or “extended mind.”⁵ In my research project, I will argue that manuscripts, notebooks, and external sources are part and parcel of a writer’s extended mind at work. Specifically, I will apply the extended mind hypothesis to literature by visualising James Joyce’s writing process on the basis of his personal libraries, notebooks, and manuscripts of *Finnegans Wake*. I believe that this application will create opportunities to investigate how the extended mind influences the evocations of characters’ minds. I will here provide an overview of how to approach these issues in the coming years. It will be made clear that visualising an extended mind at work necessarily relies on the study of writing processes, or genetic criticism. It is one of the major building blocks in this project, together with the recent developments in cognitive science. This paper attempts to illustrate the importance of these building blocks.

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- ² WOOLF, V. “Modern fiction.” In: *The common reader*, edited by Andrew McNeillie. San Diego: Harcourt Brace Jovanovich, 1919, 1984, p. 160.
- ³ Ibidem.
- ⁴ HERMAN, D. “Re-minding modernism.” In: *The emergence of mind*, edited by David Herman. Lincoln: University of Nebraska Press, 2011, p. 249.
- ⁵ ROWLANDS, M. *The new science of the mind: from extended mind to embodied phenomenology*. Cambridge: MIT Press, 2010; MENARY, R. *Writing as thinking*. *Language Sciences* 29(5), 2007, pp. 621–32; CLARK, A. and CHALMERS, D. *The extended mind*. *Analysis*, 1998, pp. 7–19.

“Whoever heard of such a think?”— enactivism and the extended mind

The Cartesian model of the mind has become increasingly implausible to a number of cognitive scientists. A growing strand in cognitive science seeks to puncture the conviction that the mind is essentially “inside,” and therefore contrasted with an “outside.” The enactive approach addresses this head-on. The notion was first introduced into cognitive science by Varela, Thompson, and Rosch (1991) in their book *The embodied mind*. They argue that “cognition is not the representation of a pre-given world by a pre-given mind but is rather the enactment of a world and a mind on the basis of a history of the variety of actions that a being in the world performs.”⁶ Two aspects stand out in this argument. First, the mind does not necessarily create a representation of reality. We do not find ourselves in a “pre-given” world by means

- ⁶ VARELA, F. J., ROSCH, E. and THOMPSON, E. *The embodied mind: cognitive science and human experience*. MIT Press, 1991, p. 9.

of a “pre-given” mind, but experience a world through the reciprocal coupling between the senses and its immediate environment. In other words, the mind is not a mirror of the outside world,⁷ nor do we possess some ready-made —“pre-given”— knowledge of the environment. Rather, the mind emerges from processes that play a crucial role in interconnecting brain, body, and environment. Second, actions are central to cognitive processes. Cognition guides “our ability to *act* on the world”.⁸ Instead of carrying information that is pre-set in our minds (“knowing that”), we possess expectations of how our experience will change depending on our actions (“knowing how”, after Ryle 1945). The possibility to act on the environment in turn helps to shape the accuracy of the expectations. Enactivism’s insistence on the distinction between “knowing how” and “knowing that” shows that it refuses to conceive of the mind as an information-processing device, and explains that the mind emerges from action-focused interactions between body and environment.

Seven years after the introduction of enactivism into cognitive science, Andy Clark and David J. Chalmers suggested a notion that also regards cognitive processes as essentially action centred. They called it “active externalism” or “the extended mind.” Their influential work opened with a question that since then has become a primary motive for cognitive philosophers: “Where does the mind stop and the rest of the world begin?”⁹ The extended mind hypothesis is based on two important ideas: (1) the environment plays an “*active*” role in our cognitive processes, which means that (2) cognitive processes are necessarily “*coupled*” with the environment. In other words, cognition emerges from a collaboration of inner processes and manipulations of the environment.¹⁰ It is clear that the extended mind hypothesis and enactivism are closely related. Though they are not identical, they prove to be comparable and the differences turn out to be subtle.¹¹ Enactivists also believe that cognition is action centred and coupled, but they reject the idea that physical objects from the environment can be part of the mind. This difference is explained by Clark & Chalmers (1998) with the famous example of Otto, an Alzheimer’s patient. Because of his disease, Otto uses a notebook to remember, for instance, the address of a museum. The notebook thus includes information of the environment in order to help Otto undertake actions in the world; it becomes Otto’s extended mind. The notebook is what Richard Menary would call “a written cognitive vehicle” that has a crucial part in driving Otto’s cognitive processes.¹² Otto’s example is but the first of numerous other examples that apply to individuals not suffering from Alzheimer’s. Using your smartphone to search for restaurants in an unknown city may be another example. The smartphone might be an extended mind for many of us, as manipulations of this vehicle help our mind to function efficiently and more thoroughly.

“In her genestic field it is all game and no gammon” — cognition, literature, and manuscripts

Enactivism and the extended mind hypothesis have been linked to literature in an innovative branch of narratology. Cognitive narratology “studies the mind-relevant aspects of storytelling”.¹³ Its area of interest is presented by Dirk Van Hulle (2014) on three levels:

⁷ Ibidem, p. 134. Varela, Thompson, and Rosch here refer to the interpretation of the mind as the “mirror of nature”.

⁸ ROWLANDS, M. Op. cit., 2010, p. 72, my emphasis.

⁹ CLARK, A. and CHALMERS, D. Op. cit., 1998, p. 10.

¹⁰ MENARY, R. Op. cit., 2010, p. 2.

¹¹ ROWLANDS, M. Enactivism and the extended mind. *Topoi*, 28(1), 2009, pp. 53–62.

¹² MENARY, R. Op. cit., 2007, p. 622.

¹³ VAN HULLE, D. *Modern manuscripts: the extended mind and creative undoing from Darwin to Beckett and beyond*. London: Bloomsbury, 2014, p. 4; HERMAN, D. “Cognitive narratology.” In: *handbook of narratology*, edited by Peter Hühn, John Pier, Wolf Schmid, and Jörg Schönert. Walter de Gruyter, 2009, p. 30.

- (1) the invention and production of the storyworld;
- (2) the presentation of mental processes of the characters in the storyworld; and
- (3) the reception and interpretation of the story (the cognitive processes by means of which readers make sense of the narrative).

According to Van Hulle, cognitive narratologists have been extensively investigating how mental processes of characters are able to influence the minds of readers (levels 2 and 3), but have until recently not looked into the relation between the mind of the author and the minds of his characters (levels 1 and 2). One of the pioneering scholars in this field who is interested in the latter is David Herman, who has introduced a possible reassessment of modernism by applying the enactive approach to Joycean narrative. He sees the modernists as “explorers of the lived, phenomenal world that emerge from, or are enacted through, the interplay between intelligent agents and their cultural as well as material circumstances”.¹⁴ His work has been of great interest to Dirk Van Hulle, who aims to tackle the same issues in his recent work *Modern Manuscripts* (2014) by combining cognitive narratology with the study of writing processes, or genetic criticism. This combination seems useful if we want to investigate how a writer produces a storyworld, as it immediately shifts the focus to the writing process itself. Within the field of genetic criticism, Dirk Van Hulle distinguishes “endogenesis,” “exogenesis,” and “epigenesis.” “Epigenesis,” the *après-texte*, encompasses those creative processes that happen after the publication of a text. This is reflected in, for instance, different editions. Both “endo-” and “exogenesis” are linked to the term *avant-texte*. “Endogenesis” denotes “traces of mental processes [that] tend to be arranged and rearranged in multiple drafts”; “exogenesis” refers to external source texts that relate to the creative process.¹⁵ The latter two terms are especially useful to my project. Joyce used notebooks to enrich his manuscripts (endogenesis) with information gathered from books, newspapers, or other kinds of external sources (exogenesis). Van Hulle’s combined approach in *Modern Manuscripts* is therefore a logical path to pursue.

¹⁴ HERMAN, D. Op. cit., 2011, p. 266.

¹⁵ VAN HULLE, D. Op. cit., 2014, p. 14.

Like genetic critics, some cognitive scientists have also taken the writing process as a subject. Richard Menary has an interesting take on writing, for which he approaches Clark & Chalmers’ theory from an enactivist perspective.¹⁶ Menary argues that the writing process is not very different from thinking. Writing, he claims, is “thought in action”.¹⁷ Written vehicles are used to manipulate the environment, which, like in Otto’s case, enables further possibilities of action. The project will illustrate that James Joyce’s interaction with his written vehicles works in the same way. Joyce’s manuscripts, notebooks, and external sources used to compose *Finnegans Wake* are part and parcel of his extended mind at work. Not only did Joyce constantly use notebooks to secure information from external sources, the creation of manuscripts that later formed the basis of the book reveals that Joyce was literally thinking on paper. Adopting Menary’s (2007), Herman’s (2011), and Van Hulle’s (2014) work as a preliminary basis, two main research questions can be stated that encompass the objectives of my project:

¹⁶ Although Richard Menary calls his perspective a “cognitive integrationist” one, it is in my view closely related to an enactivist perspective, as it rejects an internalist approach, explains cognition as a cooperation between brain, body, and environment, and “is rooted in the work of Merleau-Ponty, Wittgenstein, Clark, and Gallagher” (MENARY, R. Op. cit., 2007, p. 622).

¹⁷ MENARY, R. Op. cit., 2007, p. 630.

- (1) How can genetic criticism help to demonstrate Joyce’s extended mind at work? And
- (2) how can an application of Joyce’s extended mind at work be useful to investigate the evocations of his characters’ minds?

These questions reflect the first two levels of cognitive narratology suggested in *Modern Manuscripts*. If we are able to demonstrate Joyce's extended mind at work, we may gain a unique insight in Joyce's thinking process while creating fictional worlds and, as a consequence, in the way Joyce gives shape to his characters' minds. I therefore propose to create a digital framework that visualises Joyce's writing process. Specifically, we will build a web environment for Joyce's virtual and actual library, and establish links between the library, the notebooks, the manuscripts, and the finished product. The immediate area of interest is *Finnegans Wake*, but the framework needs to be developed in such a way that it can be a basis for further research.

To achieve this objective, it is fortunately possible to rely on valuable work that has been done so far. For years, scholars have been "source-hunting" on the basis of intertextual references in the *Finnegans Wake* notebooks.¹⁸ These works list a vast amount of books that Joyce most likely read while composing his final novel. The list will form the basis for Joyce's digital library. This becomes useful if we want to investigate Joyce's interaction with external sources: books that Joyce gathered information from in order to enrich his manuscripts. The manuscripts of the *Wake* have on their part been brought together in 63 volumes called the *James Joyce Archive* and since then have been studied thoroughly.¹⁹ For instance, scholars have established and analysed the composition history, transcribed the first drafts, or approached every chapter from a genetic point of view.²⁰ In terms of technical issues, currently operational web archives can be helpful for further study. Recently, Dirk Van Hulle, Mark Nixon, and Vincent Neyt have set up the Beckett Digital Manuscript Project. It provides access to Beckett's manuscripts and offer tools to aid a genetic analysis of Beckett's works, such as a chronology, different transcription possibilities, and text collation. The newest aspect is Beckett's personal library, in part assembled from Van Hulle & Nixon's *Samuel Beckett's Library* (2013). For these reasons, the BDMP can possibly be the perfect model for a web environment on Joyce's library.

Both sides of the cognitive spectrum: a possible pitfall

Despite the fact that the extended mind hypothesis is widely known, it is still a very controversial idea. A study that is solely based on the extended mind hypothesis would be extremely vulnerable to criticism that has been addressed at Clark & Chalmers' theory. I therefore think it necessary to closely examine an important dispute among cognitive philosophers: representation. From the point of view of the extended mind, both sides of the representational spectrum have to be investigated. After all, the extended mind hypothesis does not exclude the possibility of representation. This open-minded perspective is needed, especially because the extended mind hypothesis has been elaborately criticised for going too far on this issue, or not far enough.²¹ I here briefly discuss three different interpretations.

Patrick Colm Hogan has suggested an interesting representational concept that authors use to create stories: simulation. Simulation is a very familiar idea to us all. For instance, you may simulate your boss's reaction if you were to ask him for a raise. It is the exercise of imagining what certain events and situations would be like under specific circumstances.²²

¹⁸ DEANE, V.; FERRER, D. and LERNOU, G. (eds.). *The Finnegans Wake notebooks at Buffalo*. Belgium: Brepols Publishers, 2001.

¹⁹ GRODEN, M.; LITZ, A. W.; HAYMAN, D.; ROSE, D. and GABLER, H. W. (eds.). *James Joyce Archive, in 63 vols*. New York: Garland, 1977.

²⁰ VAN HULLE, D. *Textual awareness: a genetic study of late manuscripts by Joyce, Proust, and Mann*. Michigan: University of Michigan Press, 2004; VAN HULLE, D. *Manuscript genetics, Joyce's know-how, Beckett's nohow*. Gainesville: University Press of Florida, 2008; HAYMAN, D. *A first-draft version of Finnegans Wake*. Austin: University of Texas Press, 1963; CRISPI, L. and SLOTE, S. (eds.). *How Joyce wrote Finnegans Wake: a chapter-by-chapter genetic guide*. Madison: University of Wisconsin Press, 2007.

²¹ MENARY, R. (ed.). *The extended mind*. Boston: MIT Press, 2010; HUTTO, D. and MYIN, E. *Radicalizing enactivism: basic minds without content*. Boston: MIT Press, 2013; LOUGHLIN, V. *Sketch this: extended mind and consciousness extension*. *Phenomenology and the Cognitive Sciences*, 12(1), 2013, pp. 41–50; MALAFOURIS, L. *How things shape the mind: a theory of material engagement*. Cambridge: MIT Press, 2013.

²² HOGAN, P. C. *How author's minds make stories*. Cambridge: Cambridge University Press, 2013, p. XIII.

Another seemingly representational theory is that of the “multiple drafts model” formulated by Daniel Dennett in 1991. Our observations are not represented by an entity inside our skull, but guide the creation of different versions of the same representation, which are metaphorically depicted as multiple drafts.²³ These two representational interpretations are in my view able to complement the enactive approach to literature in the sense that representation may never be completely neglected in the creation of stories.

²³ DENNETT, C. *Consciousness explained*. London: Penguin, 1991.

Considering the other side of the spectrum, the implications for the creation of *Finnegans Wake* are interesting to investigate. Radical enactivists like Daniel D. Hutto and Erik Myin take on the enactive approach as the basis for their argument. Like the enactivists, they believe that what humans do and experience can best be understood by studying their interaction with the environment. In this interaction they distinguish basic minds, illustrated by familiar examples like catching a swirling leaf, or watching the sun rise at the horizon. Their argument is that basic minds do not involve contentful representation. Modern robots are designed accordingly. They do not work out plans before acting; they neatly make use of their environment in order to function. “We act before we think” is therefore the radical enactivist credo.²⁴ If they are correct, then the mind is not only “extended,” but also “extensive.” However, Hutto & Myin (2013) do not intend to argue that the mind “never” involves content. Cognitive processes are able to rely on pre-given information only if minds are properly scaffolded. A mind becomes scaffolded when it has relied on external resources to build or transform its cognitive capacities. In other words, the mind uses its environment to be construed and enhanced. As it goes further than simply using external components in cognitive processes, the scaffolded mind hypothesis encompasses the extended mind hypothesis.²⁵ External components of the extended mind do not reside within human bodies. Scaffolded minds, on the other hand, have also internalised past interactions with its environment. The scaffold then becomes available for further use.

²⁴ HUTTO, D. and MYIN, E. *Op. cit.*, 2013, p. 12.

²⁵ STERELNY, Kim. Minds: extended or scaffolded? *Phenomenology and the Cognitive Sciences* 9(4), 2010, p. 473.

The use of language is an example of a cognitive process that needs proper scaffolding. This has interesting consequences for the creation of *Finnegans Wake*. The *Wakean* language is based on compiling different words in a so-called portmanteau, for instance the word “meandertale” (FW 18.22).²⁶ The creation of every portmanteau relies on careful consideration of different meanings. If we want to get to an understanding of a portmanteau, those meanings can be broken down, for instance in annotations. In *Annotations to Finnegans Wake*, Roland McHugh writes that “meandertale” relates to “Neanderthal Man”.²⁷ However, the meaning of the portmanteau does not stop there. The references to a river (“meander”) and a story (“tale”) are equally important. To approximate the meaning of the portmanteau, we are thus forced to merge these separate meanings again. In other words, *Finnegans Wake* triggers the mind to build up, break down, and enhance meaning. Especially *how* Joyce has been working to conceive of these “waywords and meansigns” can contribute to our understanding of the mind, stories, and literary modernism. The creation of the *Wake* then becomes the perfect case study to visualise the working of Joyce’s mind according to the models proposed by cognitive science, and so contrive an important argument in favour of an enactivist approach to modernism, away from the “commonplace” interpretation of the “inward turn.”

²⁶ References are to page line in *Finnegans Wake* (Joyce 2012).

²⁷ MCHUGH, R. *Annotations to Finnegans Wake*. Baltimore: John Hopkins University Press, 2006, p. 18.

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