

Working Title: *Altered Cognition and Fictionality in Contemporary Science Fiction*

Project Description

This research project is concerned with the narrative construction of fact and fiction in works that feature protagonists whose cognition has been altered by fictional science or technology. Unlike fiction in which characters are magically born or gifted with abilities that increase their cognitive abilities, the works I am analysing feature outside influence on their cognition in the form of technology or science. For instance, characters may have brain implants that connect them to a computer, or take nano-drugs that allow them to communicate quasi-telepathically with other nano-drug users. Such (as of yet fictional) innovations are generally portrayed as having far-reaching societal consequences and philosophical implications. Analysing books that centre on altered cognition thus promises to yield insights into depictions of the nature of cognition, of knowledge processing and construction, and, by extension, of what it means to be human (for example in the face of artificial intelligence).

Cognitive approaches have become increasingly popular with literary scholars in recent decades, as is evidenced by *The Oxford Handbook of Cognitive Literary Studies*, published in 2015 (ed. Lisa Zunshine). Research predominantly focuses on what literary analysis can gain from the cognitive sciences and vice versa, which results in most publications centring on literature as communication, or on the reader. However, my principle interest lies in cognition *in* literature, specifically the use of cognitive sciences as literary material and on characters' minds. There is still much research to be done on this topic, especially in conjunction with science fiction. The pivotal works on characters' minds tend to focus almost exclusively on realistic modes of writing (Lisa Zunshine; Alan Palmer), and the few publications that examine them in science fiction do so in a limited capacity and without considering greater epistemological concerns (e.g. Nicholas O. Pagan; Stephan Freißmann). Similarly, there are some publications on the narrative construction of fact and fiction, or "truth", in literature, but they tend to focus on other genres (e.g. Anne C. Hegerfeldt; William Gray), or on different historical periods such as the 19th century (e.g. ed. Christine Lehleiter). This project is thus intended to build upon existing publications and traditions of literary scholarship, and promises to contribute by raising questions specifically concerned with the nexus of cognition, fictionality, and science fiction.

By its very set-up, the project demands an interdisciplinary approach. Its framework will consist of theories and concepts carefully chosen with regards to their relevance to the primary literature. A first step within the literary analysis process will consist of an analysis of the representation of cognition, including its philosophical implications, and ask what fictional alterations were made to actual scientific models of cognition. The cognitive sciences will provide the foundation for understanding the construction of characters' perception, knowledge, and thought

in fiction. This will involve neuroscientific findings as well as psychological and philosophical theories of cognition. For instance, an author might base his novel's premise on a medical-scientific case. In an author's note at the end of his novel *Nexus*, Ramez Naam writes about several such cases, one of which proves connecting the brain to technological equipment such as a camera is feasible and can somewhat restore the patient's vision (517-523). Neuroscientific findings have clearly inspired Naam and play an important role in his book. Rather than normatively evaluating the accuracy with which he and other authors render actual scientific models of cognition, I am interested in how they are used, what is changed, and to what effect.

From a wider perspective, there are some key aspects of cognitive science that are important in the context of this project. Cognitive theory underwent a shift in the 1950s, when the introduction of computers provided a fruitful analogy for mental processes. This analogy and its resulting theories have great relevance for literary depictions of technologically/scientifically enhanced cognitive processes. The computational theories of mind that dominated the 1960s and 1970s have, however, lost their orthodox status in more recent decades (Rescorla). With competing theories, especially embodied cognition, the focus has generally been widened or even shifted to topics such as the relationship between cognition and emotions, or the role of the body in cognition. The different theories are reflected in literature. Some of the novels I analyse clearly rely on a computational theory of mind (e.g. Cixin Liu's trilogy beginning with *The Three Body Problem*), whilst others tend towards embodied cognition (e.g. Ann Leckie's *Ancillary Justice*). The newer theories and topics are thus as relevant to this project as the computational theories of mind, not least because embodied theories of cognition offer new ways to theoretically frame technological enhancements that affect both the body and cognition. More than that, these competing theories significantly contribute to the debate of larger philosophical questions like the body-mind problem. Whether a shift either, for instance, towards specific stances on the answer to the body-mind problem or towards embodied cognition can be observed in contemporary science fiction remains to be confirmed.

It is worth noting that the interrelations between literature and science have received a great deal of attention in recent decades. Such interrelations are especially interesting when authors have a professional background, or are leading experts in the scientific disciplines that prominently feature in their works of fiction. This is not unusual in science fiction. A focus on science-fiction literature is thus particularly promising when it comes to the relation between (cognitive) science and literature, and the aim of this project is partly to contribute to what is a flourishing field.

If the first step within the literary analysis process is to analyse the representation of cognition, a second step (that is not entirely separate from the first) consists of evaluating the influence of fictional, altered cognition on the narrative construction of fact and fiction. In cases of a first-person narration, for instance, this influence is fairly obvious. Anna Smaill's *The Chimes* features a post-apocalyptic London in which music is employed to erase the citizens' memories. The narrator and protagonist is severely impacted by this, which means that the narration is occasionally

slow and repetitive, as well as full of (memory) gaps. This example demonstrates the need for a narratological approach throughout the project. Focalisation and the narrator are influential factors in the depiction of altered cognition. In addition, narratology not only has strong ties to possible-worlds theory and fictionality (see below), but it also offers indispensable theories and concepts on the topic of fictional minds. This project will be able to capitalise on the fruitful exchanges and mutual influences between narratology and the cognitive sciences.

Possible-worlds theory, as adapted for literary studies (e.g. Lubomír Doležel, Umberto Eco, Marie-Laure Ryan), will allow me to clearly distinguish and draw comparisons between the textual world and the reader's extratextual world. Nano-drugs that allow users to communicate quasi-telepathically may be fictional in the extratextual world, but they are an existential fact for the characters in Ramez Naam's novel *Nexus*. There is an interesting doubling there that speaks to both epistemological and ontological concerns. Fictional science and technologies are a question of ontology within their fictional world, but a question of epistemology within the context of the so-called 'actual world' (a term from possible-worlds theory that denotes the "real" world, simply put).

In addition, these nano-drugs are partly based on actual neuroscientific findings. Ramez Naam is one of those authors with a background in the cognitive sciences, being a computer scientist who has published non-fiction on the plausible future of cognitive and other biological enhancements. As a result, there is a suggestion of future possibilities where these nano-drugs are concerned. Again, this is far from unusual in science fiction. Darko Suvin partly characterises it as "a developed oxymoron, a realistic irreality" and writes of its content being "perceived as *not impossible*" (viii; emphasis in the original). There is an inherent ambiguity in the "science" of science fiction. This is where the concept of fictionality (e.g. Marie-Laure Ryan, Richard Walsh) becomes useful, a concept that is related to possible-worlds theory and its inherent epistemological concerns. One of the main goals of this project is to analyse the role of fictionality in contemporary science fiction, which will necessitate conceiving of altered cognition in the primary works as simultaneously rooted in non-fictional science and markedly fictional.

As can be deduced from this project's working title, my focus is on contemporary literature. My preliminary research suggests that the rise of 'embodied cognition' as a focus for cognitive research in the 1990s (Wilson and Foglia) is reflected by a similar paradigm shift in science fiction. A significant number of works of science fiction that thematically include cognition in a prominent manner appear to move away from portraying the body as peripheral in cognitive processes. There appears to be a shift towards thematising parts of the body as playing a significant role in those processes, which is the model of cognition proponents of embodied cognition espouse. Consequently, I will include literature from 1990 onwards.

To relate my findings to its historical context, I will consider cultural-historical theories of the 1990s onwards. Among the theories concerned with cultural and literary shifts post-2000 (or roughly after postmodernism), new materialism is likely to prove the most pertinent. The reason for its pertinence

is its connection to embodied and extended cognition, the latter of which is the view that cognition extends beyond the body and encompasses objects around it. This resonates with new materialism and, for example, ‘vibrant matter’ (Bennett), both of which put the commonly held dichotomy between living and non-living entities into question. At this stage, however, it seems likely that shifts in the philosophy of cognition or neuroscientific discoveries prove more relevant to what can be observed in my chosen primary texts than cultural-historical theories.

Lastly, potential geographical limitations have to be considered. The case can certainly be made that contemporary fiction, and science fiction in particular, is becoming more globalised, both in terms of themes and distribution (Csicsery-Ronay; “Symposium on Science Fiction and Globalisation”). Whilst the issue of globalisation remains a complex one and there can be no question of literature being free of culture-specific contexts, my preliminary research shows that including Anglophone science fiction from different parts of the world makes the most sense for this project. Contemporary science fiction is rarely, if ever, concerned with the cultural specifics of cognitive processes. Rather, altered cognition tends to be thematised as reflecting back on what it means to be human, regardless of cultural background. Most of the chosen texts address technological and scientific innovations specifically in a globalised context. With this project, I thus hope to contribute to the understanding of fictionality and the cognitive sciences in contemporary Anglophone science fiction in general.

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