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Nonconscious Cognition and Jess Stoner's 'I Have Blinded Myself Writing This'

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NONCONSCIOUS COGNITION AND JESS STONER'S 'I HAVE BLINDED MYSELF WRITING THIS'

The cognitive nonconscious is a level of neuronal processing inaccessible to consciousness but nevertheless essential for consciousness to function. Defined as a process in which information is interpreted within contexts that connect it with meaning, cognition is present to some degree in all biological organisms and many technical systems. Cognition bestows functionalities not present in material processes, namely flexibility, adaptability and evolvability.

The print book has traditionally functioned as a external cognitive support to memory, but in the contemporary era that function is challenged by computational media, which do not merely serve as cognitive supports for memory but in addition have complex agential powers. This creates a crisis of agency for print books, explored here through the experimental novel by Jess Stoner, *I Have Blinded Myself Writing This* (2012). Here the act of writing serves as a *pharmakon*, simultaneously cure and poison, for the narrator is writing her book as a memoir for her daughter, but her body operates through a peculiar dynamic in which any physical injury to the body, from a paper cut to childbirth, is healed by obliterating memories in the narrator's mind. Writing preserves memories but in this book the act of writing also exacts a physical toll on the narrator, making her blind. Thus she can write but cannot then read what she has written. The cultural and aesthetic implications of this dynamic comprise the conclusion.

Over the last two decades, research in neuroscience has revealed the existence of a level of neuronal processing inaccessible to consciousness but nevertheless essential to human cognition. Although this processing goes by various names, for example Antonio Damasio's (2000) proto-self, I am calling it the cognitive nonconscious.

Among the functions it performs are internal processes such as integrating somatic markers (chemical and electrical signals) from different regions of the body into coherent body representations. Other functions relating to external stimuli include fast processing of information, recognising and learning patterns, drawing inferences from these patterns and forwarding (or suppressing) information to consciousness in ways that influence behaviour and guide higher cognitive functions such as thinking.

In a sense, the cognitive nonconscious is as old as *Homo sapiens.* Indeed, it is likely that this kind of neuronal processing developed first in the evolution of our species and then consciousness and unconsciousness were built on top of it. It has appeared in multiple guises through recorded history, frequently articulated as a kind of intuition associated with creative breakthroughs and sudden insights that seem to erupt, as if by magic, into conscious awareness from somewhere else. In another sense, however, its confirmation by empirical evidence and the specificity of its functions have only been widely recognised among neuroscientists in the last couple of decades. For the humanities, its implications, and indeed even knowledge of its existence, remains largely *terra incognito*, despite the explosive potential it has to recast how we think about the relation of thought to cognition, and especially about the interactions of human cognitive processes to the nonconscious cognitions of complex technical systems.

This project of re-evaluating human-technical interactions in light of the cognitive nonconscious begins with making a distinction between thought, associated with the higher-level neuronal processes generating consciousness/unconscious (which I call modes of awareness), and cognition, a broader capacity that includes both conscious and nonconscious processes. For half a century, debate has swirled around the question posed by Alan Turing in 1950: can machines think? Turing, of course, proposed to answer the question by operationalising it in the Turing test. Since his foundational paper, it has become clear that machines do not think as humans do, principally because they are not conscious and do not have a model of the self characteristic of humans and many animals.

At the same time, the cognitive capacities of technical systems have been growing by leaps and bounds, performing many of the same functions as the cognitive nonconscious in humans, including fast information processing, recognising and drawing inferences from patterns, integrating ambiguous or conflicting information into coherent representations and interpreting signals from sensors and actuators to perform actions. Like the cognitive nonconscious in humans, these systems are crucially important in keeping consciousness from being overwhelmed by barrages of information too fast, complex and multifaceted to be comprehended by the relatively slow processing of consciousness. Moreover, many technical systems have the capacity to monitor their own states, change them according to variations in contexts and transform the parameters that regulate these states. Such complex, adaptive, state-aware and context-aware systems surely deserve to be called cognitive, although they are not conscious and (in my view) are unlikely to achieve consciousness anytime soon.

Indeed, it is becoming increasingly clear that cognition in general should not be regarded (as intelligence often is) as a quantifiable property that a being either does or does not possess. Rather than an attribute, cognition is a *process* and exists along a spectrum in the biological world, from the high-cognitive functions in humans and other mammals to low-cognitive functions in such lifeforms as nematode worms and plants. All living things, in this view, have some cognitive capacities. Similarly, technical systems also exist along a spectrum, from sophisticated systems capable of many different kinds of cognitive processes to low-cognitive processes such as word frequency algorithms. Cognition bestows capabilities that agents without cognition – material processes such as avalanches, tsunamis or hurricanes – do not possess, namely flexibility, adaptability and evolvability. In contrast, material processes may have awesome agential powers, such as the phenomena mentioned above, but they operate as the sum of forces acting upon them and lack the responsive flexibility that cognition bestows. To mark this difference, I propose to call cognitive beings actors (including all biological beings and some technical systems) and material processes agents.

Recognising the parallels between the cognitive nonconscious as it functions in humans and technical systems opens the way for a host of new and expanded modes of analyses, including the interactions of humans with technical systems that operate below the level of awareness and nevertheless influence behaviours, guide expectations and alter human neuronal networks. For the humanities, recognising the specificities of the cognitive nonconscious invites interpretive strategies focusing on interactions between the modes of awareness and nonconscious processing. For example, in literary texts this may take the form of identifying and analysing places in a text where gestural and somatic information subtly influence the verbal narrative, or where information overload leads to conscious dysfunctionality but nevertheless is processed at lower levels of textual organisation. Just as theorisations of the unconscious led to decades of fruitful literary interpretations and corresponding theories of reading and writing, so the empirical testing and theorisations of the cognitive nonconscious have the potential profoundly

to affect our understanding of how the modes of awareness interact with and are influenced by the cognitive nonconscious.

The power of nonconscious cognition, especially in relation to the cognitive potential of print books, is interrogated in Jess Stoner's novel, *I Have Blinded Myself Writing This*. The novel's bizarre premise is laid out in the opening pages: the female narrator suffers from a most unusual malady. Every time her body suffers anything from a scratch to a wound, it obliterates memories to heal itself, as if the relation of body to mind was a zero-sum game in which physical injuries exacted from the mind a corresponding memory loss, precisely calibrated and nonconsciously enacted. The premise makes literal the pharmacological dynamic of poison and cure as Bernard Stiegler has articulated in relation to technics, entwining somatic injury with mental loss, healing with amnesia. Moreover, the narrator never knows which memories will be obliterated, and sometimes months pass before she stumbles upon indicators of what is missing.

The status of the book is very much at issue here. From Plato onwards, writing has been entangled in a pharmacological relation with memory. According to Plato's famous argument in *Phaedrus*, learning how to write 'will produce forgetfulness in the minds of those who learn to use it, because they will not practice their memory' (Plato, 1925, 274c). At the same time, of course, writing extends the embedded cognitive system in which the mindbody's interior capacities are supported and extended through external affordances. Writing at once erodes internal memory and preserves it in external form.

I Have Blinded Myself Writing This puts into play this *pharmakon* by evoking the analogical relation between two interdependent bodies: the author's and the book's. Although there is no indication in the verbal narrative that the act of inscription exacts a physical cost, the title suggests that the zero-sum dynamic applies also to writing and sight. The book's body is created at the cost of the narrator's physical capacities, especially her vision, which means that she can write but as a result is unable to read what she has written.

The dynamic recalls Jane Elliott's (2013) concept of suffering agency, which she identifies with how neoliberalism *feels* for an individual subject. Living in regimes in which cost/benefit analyses and free market ideologies rule, the subject is forced into situations in which vicious trade-offs demand the same kind of ruthless cost/benefit analysis of trauma inflicted upon the body, as in the film *127 Hours*, where the protagonist, Aron Ralston (James Franco), must choose between cutting off his own arm and surviving or failing to do so and dying. In similar fashion, Stoner's narrator can try to reclaim agency by writing but only at the cost of going blind, thus defeating the purpose of writing as an externalisation and preservation of memory. In this sense, Stoner's text explores the problematics of the externalisation of cognitive functions that Merlin Donald (2000) and Bernard Stiegler (2012), among others, have theorised is the essential characteristic of *Homo sapiens* as a species.

It is no accident that the book is published in an era when libraries and other repositories of memory are discarding their print archives and choosing to preserve them in digital form. The process is vividly imaged in Vernon Vinge's *Rainbows End* (2006), where he imagines a university library (clearly the Geisel Library at the University of California, San Diego) shredding its books and feeding the shards into an enormous optical reader, in which each whirling fragment is imaged and then the thousands of shard images digitally reconstructed into a coherent text again. Vinge's narrative thus emphasises the pharmacological nature of digitisation: to survive as a digital archive, the book's body must be sacrificed and violently dismembered.

As if to escape this reality, the form of Stoner's text presents the book not as a printed commodity but a composition notebook with fake marbled cover, universally used for student writings and lab reports. The presentation includes the absence of page numbers and displacement of publication information to the back, so the reader encounters it only after having experienced the text as if it were a composition exercise. Of course we know that in fact the book is printed; Stoner reports (*Cobalt*, 2012) that she created the text in InDesign, a powerful imaging program, because she wanted precise control over how the words and images appear on the page. In fact, digital technologies are essential for imaging on a cost-effective basis certain creative wordimage effects displayed in the text, such as words and sentences obliterated with strikethroughs (*sous ratour*, as Derrida would say), hand-drawn illustrations, erratic spacing, cursive marks signifying sounds (a telephone ringing), vertical lines running down the page, a paper fragment inscribed with a handwritten note and (à la *Tristram Shandy*) an all-black page with white writing.

Why is it important for the book's body to deny the technical mediation that created it? According to Stoner (Quesada, 2012), she wanted the text to perform the tension between print book/handwritten composition because she thought of it as the narrator's personal memoir to give her daughter access to her memories while she can still remember them. In addition, I think the text testifies to the problematics of agency in our historical present, as Jane Elliott argues in a different sense. Unable to control which memories will be eradicated or even to sense the moment when one disappears, the narrator lives a precarious existence in which she must depend upon her partner Teddy to fill in the blanks for her. As their relation deteriorates, she begins to wonder if Teddy is accurately recounting events she can no longer remember, including even such major traumas as the suicide of her brother Ben, or if he is shading them to suit his own purposes. The balance in their relationship shifts with the birth of their daughter; increasingly Teddy fills his need for emotional bonding with his baby rather than his troublesome wife, so needy that he calls her several times a day just to be sure she remembers him. Thus agency is here very much bound up with memory, or more precisely the inability to remember.

What kind of agency does the book possess, especially in comparison with the digital technologies that are now often replacing it? Traditionally functioning as an external cognitive support, the book requires for its efficacy a comprehending human. It has no active cognition or agency in itself (although it has many ways in which, as an embodied artefact, it directs and conditions cognitions). It realises its cognitive potential only when it is embedded in a circuit that includes the powerful imaginative capacities of writer and reader. By contrast, digital technologies can have active agential capacities, especially when they include sensors and actuators that enable them to perceive, interpret and act upon information flowing in and through them. Moreover, that agency now extends, as in the Never Ending Language Learning program developed at Carnegie Mellon, to reading books, categorising their contents and parsing their meanings – something that books themselves cannot do. There are no self-reading books.

The book in this sense may be understood as undergoing a crisis of agency. *I Have Blinded Myself Writing This* tropes this crisis through the narrator's predicament. Just as her memory is vulnerable to exigencies that befall her body, so the book's body, a repository of memory, is also imagined to be vulnerable to the operations of an agency it does not control. Repeatedly, pages appear with such messages as 'To understand/You should/Rip this page', 'If you ripped this page/you would know', and 'You. Do it. Rip this page'. The reader is thus invited to impose on the book's body a pharmacological drama similar to that which the narrator experiences in her mind/body; comprehending the words in the reader's mind opens the possibility of obliterating the words in the book's body. The book achieves its agency through the reader, but the reader

then damages the book, just as the interpenetrating digital technologies make the book possible through their autonomous agency, while at the same time rendering it vulnerable to obsolescence (and possibly violent dismemberment) through digitisation.

The dynamic at issue here is larger than literary texts. Books are now part of an epochal shift in how memory and cognition are conceived and implemented. Lakoff and Johnson (2003) have persuasively argued that our biology profoundly conditions the kinds of metaphoric networks through which we construct concepts; Laura Otis (2001) extends this idea to technological artefacts, which also participate in and co-produce metaphoric networks. The aptly named 'personal computer' instantiated in technological form a deep assumption about human cognition, that it is contained in the brain/mind of an individual person, a model Andy Clark calls BRAINBOUND (2008). At the same time that Clark, Edwin Hutchins, Walter Freeman and others were arguing for an embodied/embedded model of human cognition, technical cognition was also moving away from a BRAINBOUND format toward a networked model. Currently, computers and mobile digital devices often function as *portals* to networked servers rather than as stand-alone cognisers. They consequently require less memory and functionality, since they can access applications and memory storage in the cloud. Just as cognitive functionality in humans is now understood as a network property, as Alex ('Sandy') Pentland (2008) and others have suggested, technical cognition is increasingly designed and implemented as a network as well. The metaphoric networks entwine, creating matrices of meaning that further connect human cognition with technical cognitive systems.

Literary works are also moving into the cloud in the form of digital downloads, but print books remain individual artefacts with specific locations and physical characteristics. Notwithstanding the social and technical networks within which print books circulate, including libraries, book clubs, publishing collaborations and so forth, they participate in the older BRAINBOUND model to the extent that they are imagined as containing their cognitive potential within the bounds of the book's covers, fixed in physical form by the printer and bookbinder.

As technical and human capabilities are increasingly seen as network functionalities rather than BRAINBOUND cognisers, the crisis of agency that Stoner's text performs deepens, for now agency is dispersed throughout the network, unlocatable solely in an individual subject or device, with entailed consequences impossible to estimate as complex interactions surge back and forth through the network. There is, of course, a positive side to this story, for dispersed agency may be a more accurate, sustainable and ecologically-friendly concept than that of an independent liberal subject endowed with autonomy and rationality.

The crucial point, from my perspective, is the deep interpenetration of technical nonconscious cognition into a wide variety of complex systems, including literature and other creative arts. The trajectories of the examples discussed above move in similar directions: the creation and intensification of the interactions that constitute the cognitive nonconscious as a functionality operating across and between humans and technical systems. As internal processes are opened to external manipulation and surveillance, and external processes are connected in feedback loops with internal perceptions and responses, the circuits comprising the cognitive nonconscious can no longer be considered as solely human or exclusively technical but rather as complex functionalities affecting cognitions at multiple levels and sites, human and technical. The dynamics of contemporary literary texts participate not only thematically in this cultural shift but also in and through their bodies – just as humans participate not only in their rational thoughts but also in the embodied and nonconscious processes that make up the majority of human lived experience. As the metaphoric networks deepen and swirl around us, we learn who

we are not only through reading books but also through the crises of agency that enweb their bodies to our bodies, their cognitive potentials to our consciousness and cognitive nonconscious.

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Insights

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