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Cartography of Mind

CARTOGRAPHY OF MIND: COGNITIVE APPROACHES TO FICTIONAL
CONSCIOUSNESS AND FICTIONAL WORLDS IN BIOY'S *THE INVENTION OF
MOREL*

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ABSTRACT:

This thesis explores representations of fictional consciousness (the fictional mind) in the novel The Invention of Morel by Adolfo Casares Bioy through the lens of cognitive approaches to literature. I first argue that the ways in which we interact with fictional minds is not unlike the way that we interact with real minds. Utilizing a cognitive hermeneutic means laying bare some of the cognitive frames and processes which are embedded into fictional worlds. I then argue that consciousness itself is narratively structured. Conscious experience is gappy and lies atop an enormous, largely unconscious realm of cognitive processing. This thesis seeks to uncover some of these processes as represented in the fictional mind, arguing that representations of fictional consciousness are composed of internal narratives (like mental events, wishes, desires, etc.) mirroring the narrative structure of real consciousness. Finally, I argue that representations of consciousness are embodied and can be read in tandem with the fictional world in which they are situated. The feedback loop between the fictional mind and its fictional environment, both physical and sociocultural, is the starting point for a powerful, interdisciplinary reading methodology.

Thank you to Dr. Jeffrey Donaldson for wisdom and guidance and to Shannon and Coco

McLoughlin for inspiration.

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Chapter 1: Introducing the Fictional Mind

In her book *Transparent Minds* (1978)*,* Dorrit Cohn states that the "singular power possessed by the novelist" is his role as the "creator of beings whose inner lives he can reveal at will" (4). Fictional consciousness is constructed; because a character's mind is authored, its markers also strive towards a superstrate of meaningfulness of the fictional whole. "Internal stories," emphasizes Manfred Jahn, are "crucial counterparts of external stories" ("Awake!" 195). Jahn draws attention to the interpretive space created by recognizing the presence of both external (physical, public) and internal (virtual, private) narratives. They are bound together into a cycle which is gradient and defies discrete boundaries. The interactivity between internal and external narrative means interpreting the fictional consciousness in tandem (and at times with the assistance of) the fictive environment in which it is situated.

Cohn's investigation of representations of consciousness, which I call the fictional mind, begins from the starting point of exception, meaning that interactions with fictional minds are somehow materially and conceptually different from interactions with real minds. But recent advances in cognitive approaches to literature challenge this assumption, finding instead that the way we engage with fictional minds is not unlike the way we engage with real minds. This

paves the way for the contents of the fictional mind, including motivations, desires, emotions and memory, to be connected with and understood through the use of interdisciplinary cognitive research methodologies. Establishing the context dependency of consciousness means interpreting the mind as both embodied and interactive, both in real minds and as a critical lens for reading fictional minds. Uri Margolin argues that "once we are ready to ascribe actions to fictional storyworld participants, we should be ready to ascribe to them minds" (274). By this he means that the elements of a story, and the style and convention employed by the novelist, reveals the "inner lives" of his characters as the topic of narrative, the nexus of both narrativity and fictionality. For the novelist, internal narrative has organizational and contextual functions, adding texture to fictional world while simultaneously carving out primary plot progression(s), temporal shifts (e.g. memories, flashbacks) and sub-worlds (e.g. dreams, drug-induced states, states of desire). For the reader, internal narratives are a cognitive frame and an interpretive access point.

The structure of this thesis resembles a feedback loop between the internal and external narratives which make up in the fictional mind, a model of consciousness supported by various cognitive science and narratological frameworks. Narratology, in its increasingly dynamic interaction with both story-based structure (so-called "deep structure") and narrative discourse, provides a useful taxonomy of terminology, categories of narrative transmission and levels of communication (Chapter 3). Overlaying narrative structure with cognitive frames means integrating models of consciousness from disciplines such as philosophy of mind and neuroscience (Chapter 4). The result is a model of the fictional mind as embodied and sculpted around consciousness which emerges from physical processes that contain markers of evolutionary history. I establish the fictional mind as emerging in stages, ranging from basic

homeostatic monitoring to base emotional response to social interaction and autobiographical self-awareness. In laying bare markers of consciousness as they can be interpreted in fictional minds, the reader is given access to a new range of internal narratives called embedded narratives, which interweave to create a continuing consciousness mediated semiotically and reconstructed within the mind of the reader (Chapter 5). A fictional mind is not explainable solely on the basis of its internal expression. We must face outwards towards the social component of the fictional mind (Chapter 6). This includes its situatedness in a fictional world, including its spatiotemporal and sociocultural surroundings. Possible-world theory adapts the "the concepts and models from possible-worlds semantics and modal logic" to provide a "rich theory of nature, regularities, major constraints, and varieties of fictional worlds" (Margolin 274). Highlighting the progression from fictional mind to fictional world gives rise to new ways of attributing embodiedness to fictional experientiality.

Within the pages of a novel, there is a flurry of mental activity which accompanies the plot. In *Anatomy of Criticism*, Northrop Frye categorizes the novel as a genre that "tends to be extroverted and personal; its chief interest is in human character as it manifests itself in society" (309). Because the novel places the character and its interaction with society front and centre, characters can be read as textually mediated examples of the fictional mind in action on both a subjective, personal level and a social, observable one. I am not suggesting that fictional minds have agency, but illustrating the points where representations of consciousness exhibit shared traits with consciousness in real minds allows a relationship to be built between narrative structure and cognitive frames, both those brought to the textual engagement by the reader, and those represented in story world participants.

When a reader is given access to the motivations, emotions, and memories of a character, that character registers as a fully realized individual within the mind of the reader. Alan Palmer argues that this interaction is why we read fiction: "the constructions of the minds of fictional characters…are central to our understanding of how novels work, because readers enter storyworlds primarily by attempting to follow the workings of the fictional minds contained in them. Fictional narrative is, in essence, the presentation of fictional mental functioning" (Palmer *Social Minds* 9). In short, the fictional mind is one of the novel's primary tools of engagement and the reader's access point to experiencing the fictional world. The experience of reading narrative is, in turn, coloured, engaged, manipulated and negotiated through an interaction with the cognitive frames which allow the reader to make sense of fictional worlds. One such cognitive frame, central to this thesis, is the continuing consciousness frame which allows the reader to "create a continuing consciousness out of the isolated passages of text[1] that relate to a particular character" (Palmer *Fictional Minds* 15). Fictional minds are not forged in one specific narrative moment, but are tracked and updated as new information about a new character is provided by the text. Readers glean information from a variety of sources, including but not limited to the utterances of other storyworld participants. In short, the narrative becomes a signpost by which we are invited to attribute and extrapolate the mental worlds from a series of speech acts uttered in the context of beliefs, values, and properties. The fictional self, in this way, is very similar to the self outside of fiction. As Dennett explains, through the use of his heterophenomenological frame work, the way that we interpret subject behaviours in real life are comparable to the reader's interpretation of fictional subjects. He

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[1] In referring to text, I am referring to a broader definition of the word which includes any cultural production which can be read. This includes works of fiction but can extend to any piece of writing, film, picture, graphic novel, video game, etc.

states that "the tactic of letting a text constitute a world need not be restricted to literary works intended as fiction by their authors" (*Consciousness Explained* 81). Linguistic representation of experience means allowing that consciousness and fiction are very alike, that "the self in fiction is as fictional (or constructed) as the self outside fiction" (Coelsch-Foisner 69).

Throughout this thesis, I use the term *embedded narrative* to refer to the multiple, both expressed and inferred, mental states and cognitive functions which make up the fictional mind. The fictional mind itself is a macrostructure of embedded narratives, revealing layers of potential fictional worlds contingent on narrative perspective. By this I mean that access to the fictional mind is mediated by point of view and the organization of narrative discourse. Additionally, fictional minds are not complete just as fictional worlds are not complete. No novel includes a description of the wall of every house or the back of every tree, just as no novel includes the whole inner workings of a fictional mind. Intertwined with the explicitly stated and the strongly inferred signifying markers of the fictional mind are gaps in the narratives, full of virtual events "never realized but rather exist [as] a kind of dark, weightless energy, hidden under the words and images that actualize a story" (Abbott "Shadow Stories" 105). Fictional minds are comprised of such narratives, both explicit and implicit, and communicated through formal elements of style.

Narrativity, the elements of how a story is told, arises not from the plot or story, but rather in reference to what Monika Fludernik terms experientiality, the "quasi-mimetic evocation of 'real-life experience'" (Fludernik '*Natural' Narratology* 10). The cognitive frames within the fictional mind shape the verbal transmission of text, but narrativity is "not a quality adhering to the text but…an attribute imposed on the text by the reader" (Fludernik "Cognitive Parameters" 244). This means that "the ways and means of rendering [experientiality] in

narrative discourse also rely on cognitive parameters" (Fludernik "Cognitive Parameters" 244). Breaking down the fictional mind into embedded narratives is a useful tool in unpacking the experiential lens and decoding narrative transmission.   Embedded narratives, the "story-like constructs contained in the private worlds of characters," are made available to the reader either directly (e.g. internal monologue) or through social performance (e.g. facial expression) to which the reader must attribute a mental dimension (e.g. emotional state) (Ryan *Possible Worlds* 156)[2]. Embedded narratives add texture to the plot, creating action in the factual domain of story, and can include "dreams, fictions…fantasies… [and] any kind of representation concerning past or future states and events: plans, passive projections, desires, beliefs concerning the history of [the textual actual world], and beliefs concerning the private representations of other characters" (Ryan *Possible Worlds* 156). They act as "superimposed forms that…refine or comment on or test or trouble" the work as a whole (Rabinowitz 86). They can also create "multiple incompatible stories, together with their incompatible worlds" resulting in "gaps, but only as possibilities" (Abbott "Shadow Stories" 104). Some embedded narratives, like expressed desires or predictions, create potential, often unactualized, and sometimes mutually incompatible, virtual events which only occur within mental activity. The actual and virtual intertwine, creating a "bundle of possible stories" which enmesh with and

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[2] Genre and literary convention certainly have a role to play in this transmission. Reader expectations of and familiarity with a given style (i.e. genre or time period) is a cognitive frame which is an intertextual component of reading. We feel thwarted when we read Hemingway, because we need to fill in so many gaps. We are manipulated by Nabokov into sympathy towards characters who are foundationally immoral. Some post-structuralist novels will give too much or not enough access to the embedded narratives in a fictional mind, a process which defamiliarizes and disorients the reader.

More Reading:
Herman, David Ed. *The Emergence of the Mind: Representations of Consciousness in Narrative Discourse in English*. Lincoln: U of Nebraska P, 2011. Print
Crane, Mary Thomas. "Cognitive Historicism: Intuition in Early Modern Thought." *The Oxford Handbook of Cognitive Literary Studies*. Ed. Lisa Zunshine. Oxford: Oxford UP, 2015. 15-33. Print.

diverge from the primary narrative (Ryan *Possible Worlds* 147). These embedded narratives all come together in the mind of the reader to construct the contents of the fictional mind, and by extension, the "self".

Palmer pushes the embedded narrative further, to include "the whole of the character's various perceptual and conceptual viewpoints, ideological worldviews, and plans for the future" (Palmer *Fictional Minds* 15). This underscores that fictional minds are not isolated, but inherently social, situated in both physical and socio-cultural environments which influence behaviours. The virtual, mental-only events triggered by embedded narratives explode into limitless possibilities when one considers that "versions of characters exist within the minds of other characters" (Palmer *Fictional Minds* 15). Interactivity between internal and external, between organism and object, and even between the reader and the text, has long been implicit in literary criticism. In this thesis, I seek to defamiliarize some of the underlying processes that indicate fictional consciousness by constructing a dedicated conceptual framework which integrates research from real-mind disciplines. More specifically, I look at functionalist theories of consciousness, especially the models proposed by Damasio and Dennett which replace Cartesian geographies of mind based on a mind/body divide, with a model which is conceptually cartographic and based on categorization based on relationship to mental prototypes. These frameworks hold that minds have a map-making function which is constantly updating based on its surroundings, a fluid and "dialectical interplay between experiencers and their environments whose negotiation confers on their experiences the specific quality that they have" (Herman "Reminding Modernism" 263).

It is important to note that a cognitive hermeneutic potentially falls flat as a method of critical reading. The core of my project is largely illustrative, uncovering signs of cognitive

function within a text and making correlations with narrative structures and patterns of images. Rabinowitz, somewhat cheekily, calls it reading with a cognitive flavour, illuminating cognitive exchanges and moments of cognitive intensity in a given text. The theoretical contribution, to echo Mary Thomas Crane, is that "literary and cultural texts are informed by identifiable cognitive paradigms and we can better understand how they work, and why they exist, if we can see their cognitive underpinnings" (19). At the same time, just pointing out instances of theory of mind, modularity, linguistic structures, etc. does not make for compelling interpretive fodder. The interdisciplinary sources I adapt for use in literary criticism begins as an experiment in identification, pointing out instances where fictional minds share traits with real minds. But I believe that emphasizing the "cognitive flavour" of any text can lead to critical productivity.

One such convergence between fictional minds and real minds is the presence of a fundamental dialogism. Minds engage with and create narratives which are internally and externally multiple and interwoven. Fictional minds interact within the ontological sameness of the fictional world, but they also contain the clues with which a reader reconstructs a given narrative and the participants in that fictional world. Both starting points of this bi-directional engagement lend themselves to an interdisciplinary approach. How can the fictional mind be examined in a way which is not dismissive of entrenched theoretical frameworks and socio-cultural criticism, while also taking into account scientific research on the universal cognitive architectures and evolutionary history which make consciousness possible? The structures and processes of fictional and real minds share deep resonances and convergences which are mutually enriching. In this thesis, I argue that the fictional mind, like the real mind, is a conceptual cartographer, embodied and in constant interaction with its environment, both

physical and socio-cultural. I have narrowed my scope to focus on first-person narration, which requires a narratological perspective on the relationships between perspective, character, reader, and text. Although this exploration is equally compatible with third-person narrative, a first-person perspective offers a direct and privileged access to the cognitive frame of the fictional mind. Because "first-person narrative corresponds to narrative of personal experience," our "preferred interpretive options" are applicable to both (Fludernik "Cognitive Parameters" 251). In short, the narrative itself is a cartographic experiment for world building in both the narrator, as experiencer and teller, and the reader.

Cognitive mapping is a recurring concept throughout this thesis which emphasizes the context dependency of the fictional mind. Map-making is a primary function embedded in both phenomenal experience and the act of reading. According to neuroscientist Antonio Damasio, "minds emerge when the activity of small circuits is organized across large networks so as to compose momentary patterns… in brief, the brain maps the world around it and maps its own doings. Those maps are experienced as *images* in our minds" (19). Images include not just visual images, but also sensory perceptions and memories (individual and grouped). The mind creates mental maps of the body in space and time as well as its interaction with the environment, while drawing from and integrating remembered physical and mental states of past experience. This thesis extends cognitive mapping into the terrain of the fictional world. The fictional mind of a first-person narrator is a cartographer in a constant state of adjustment. The fluidity of our cognitive map-making abilities simultaneously traces and blurs the boundaries between internal and external. How important is spatial mapping to the reader's conceptualization of the fictional world? To what extent does the reader's mind rely upon the

mental cartography to navigate plot, character motivation, and social/cultural/moral/ethical issues present in text?

Combining narratological frameworks with cognitive approaches reveal the convergences between narrative structures and the cognitive frameworks revealed by real-mind research. Literature is a concrete example of imaginative thought, and as such, the examination of fictive consciousness, when viewed through a cognitive lens, is a potential site for meaningful interdisciplinary engagement. Because consciousness is a composite process of mental functioning, I see literature (and text more widely) as a domain of dialogic and decentered interplay between real and fictive minds. Knowledge about real minds can give us insight and create inferences into how fictional minds are constructed and how they, in turn, construct the fictional world around them through interaction and categorization. But this is about more than just looking at fictional consciousnesses as contained within an ontologically separate fictional world. As I mentioned above, text reaches across the boundaries towards the consciousness of the reader. In fact, the activation of textual worlds requires such chemistry. As Ellen Spolsky points out, engaging with text as both a linguistic and symbolic structure and as an imaginative example of mental functioning is the major focus of cognitive literary theorists. This means "exploring the interactions of audiences within embodied systems of responsive feedback loops, and in producing hypotheses about the different ways we synergize bodily and material knowledge and abstract symbol use" (Spolsky "Preface" 2). The readers decode the text through relevant mental architectures, a process shaded by pre-existing frameworks of knowledge and cultural norms and individual pathologies.

My research falls under the larger umbrella term of 'cognitive approaches to literature', a discipline which encapsulates any method of study referencing cognitive structures. I advocate

for an integrative approach of knowledge sharing across multiple disciplines including (but not limited to) cognitive science, linguistics, psychology, neuroscience and philosophy of mind. Alan Richardson points out that "cognitive" is used widely and broadly, referring to "an overriding interest in the active (and largely unconscious) mental processing that makes behavior understandable" (2). Like the term "cognitive science", cognitive approaches to literature are "loosely held together by a set of common interests, allegiances, and reference points rather than a coherent discipline unified by shared paradigms and methodologies" (Richardson 2). Cognitive approaches to literature are increasingly discursive, bound together primarily by the insistence on a holistic, interdisciplinary approach[3]. My cognitive focus, so to speak, is on the emergence of the fictional mind as a dynamic, embedded narrative. Understanding how the fictional mind works within the context of its textual world, focusing more specifically on spatial and temporal categorization and navigation, is crucial to understanding the text as a whole. To facilitate this connection, I borrow most heavily from neuroscience and philosophy of mind and refer to other cognitive narratologists who have already paved the way for this type of investigation.

Cognitive science provides us with "four major components of information processing…intake, internal representation, storage and retrieval, and transformation" (Margolin 288). When the first-person narrator takes on the role of cartographer, their information processing takes on a gradient, radial structure, constantly categorizing, adjusting and adapting to the world outside, but always in direct reference to, the body in which the

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[3] These approaches include cognitive narratology, cognitive poetics and cognitive approaches to literature. All three emphasize cognitive frames and schemas, but they emphasize different interdisciplinary interplay with different literary theoretical frameworks. For an excellent summary of works which make up the body of this discursive field, I suggest the introductory chapter of Alan Palmer's *Social Minds in the Novel*.

fictional mind rests. The resultant cognitive maps, defined as patterns of representational images, are presented as embedded narratives in a constant feedback loop between fictional mind, fictional world and the reader's narrative comprehension of the text as a whole. George Butte, in his excellent study of subject narration *I Know That You Know That I Know* attempts to forge a potentially paradoxical interpretive space between phenomenological approaches and post-structuralist perspectives. He argues that texts are intersubjective, that is, that they are largely concerned with how fictional minds perceive other fictional minds. Subjects, for Butte, are "a body, an experience of that body and its gestures, an intentionality grounded in that body – *and* a mirroring of other bodies, gestures, experiences and discourses" (5). The subject takes on a double role "both mapped and mapping, both responding to and refining, redrawing, or even subverting ideology" (Butte 11). While body politics is not a central topic of this thesis, Butte's insistence on reading the body (and culture) as a text is both productive and refreshing. How can cognitive approaches enhance the lexicon produced by embodied subjectivity? Fictional minds, as representations of subjectivities, are ideal subjects for demystifying and laying bare the convergences between cognitive architectures and narrative structure.

Chapter 2: The Invention of Morel: Reading Science Fiction

Scholarship on the fictional mind is heavily centered on Western canonical texts. Because of its relative newness, this reflects an attempt to provide accessible examples to a well-read and academic audience. However, I believe that the cognitive approach is not a supplementary one, but is instead more foundationally applicable across boundaries of genre.

I aim to test its flexibility by applying it to genre fiction, in particular Science Fiction (SF)[4]. SF tends to utilize more radical narrative techniques, blending together aspects of multiple genres, and undermining assumptions and expectations in regards to narrative consistency. Darko Suvin defines SF as "a literary genre whose necessary and sufficient conditions are the presence and interaction of estrangement and cognition, and whose main formal device is an imaginative framework alternative to the author's empirical environment (7-8). By this definition, SF not only pushes the boundaries of narrative, but also, because of its simultaneous departure from and reference to the real world, demands a high level of cognitive interaction. SF's responsiveness to "techno-scientific change" reinforces "a perception that cultural representations are constructs" (Seed 3). Parallel worlds, direct engagement with otherness, narratives of discovery and invention, and challenges to categorization and conceptualization are all part and parcel of the SF reading experience. Science fiction itself is "mapping out relations," applying a metaphorical, sometimes allusory, lattice between text and culture (Seed 3). The "what-if" approach to world building lends itself to cultural critique, its narrative reaches across the ontological divide between fictional and actual to offer critiques of political, social and cultural norms. Spatial and kinesthetic orientation of the fictional world and its interaction with the fictional mind are crucial to understanding the possibilities of SF worlds. With linguistic cues from the text, "the reader discovers and charts out relations between characters and different aspects of their environment" a process which occurs on multiple levels and is colored by reader response (Seed 4). As such, SF offers an excellent opportunity to

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[4] SF is an umbrella term which also includes fantasy and speculative fiction.

establish relationships between narrative structure, metaphorical connectivity, possible-world theory and fictional minds.

SF provides additional challenges to the reader by radically departing from ordinary experiences of reality. In order for a reader to be able to navigate and understand "the cosmology of the enclosed universe," the fictional world "has to be made reasonable, plausible, indeed (given the evidence) inescapable" (Shippey 17). For this reason, SF is fantastically descriptive, its language embedded with not only discrete facts which surround the reading experience, but also language which calls attention to gaps, divides and reimagined or parallel meanings in language. The unreal dimension of the fictional world means recognizing not only data, but also non data, or novum, "discrete piece[s] of information recognizable as non-true but also not-unlike-true, not-flatly-impossible" (Shippey 14). However fantastic the description is, however much it challenges the ideological problems to which it gestures, when we read SF we assume that it is as close to our reality as possible. While theoretically fictional worlds are "independent of the properties, structures and existential mode of actuality," the reader nonetheless relies on actual world constructs as a baseline for entry into fictional domains. Marie Laure-Ryan calls this the *principle of minimum departure*. Ryan states that "we reconstrue the central world of a textual universe in the same way we reconstrue the alternate possible-worlds of nonfactual statements: as conforming as far as possible to our representation of [the actual world]" (Ryan *Possible Worlds* 51). As readers, we assume that landscapes are earth-like, including the laws of physics and fundamental building blocks of matter. We assume that an alien is humanoid. The reader needs explicit instruction if this is not the case.

Minimum departure is supported by the research of Brent Berlin, Paul Kay and Eleanor Rosch[5], as well as Wittgenstein's thought experiments about the "game"; they all suggest that rather than conceiving of categorization as difference (Saussure), we "conceive of categories as structured by resemblance to a prototype" (Crane 16). In your mind, picture a tree. Your prototypical tree may be a pine, while mine is a willow. Both are certainly trees, but we gauge the tree's "treeness", its aboutness, its intentionality, within its proximity to the prototype at the centre. Categorization takes on gradient, radial, and often overlapping characteristics. The reader's reliance on the actual world to shape the contents of the fictional world is fundamental to the success of SF narratives. As Tom Shippey points out, SF is necessarily a high-information genre in which a single word may be challenging categorization on intellectual, emotional and ideological levels, and it needs all of that information to be comprehensible (15). Familiarity with the fictional world and its norms must be shaped within an alien frame of reference. This heightens the dissonance between actual and fictional minds, revealing fissures from which embedded narratives emerge.

The primary source for this thesis is *The Invention of Morel* by Argentinian author Adolfo Bioy Casares. Published in the original Spanish in 1940, it was Bioy's first well-received work. Its commercial success was in part due, no doubt, to the flattering prologue by friend and mentor, Jorge Luis Borges. The novella takes on the form of a diary, telling the story of a political criminal who flees to an isolated island which is rumoured to be the source of a fatal disease. The island is tropical, moist, warm and bug-ridden, and has unusual terroir on account of bizarre tidal patterns which occasionally cause flooding. The island also is home to a set of

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[5] See Brent Berlin and Paul Kay *Basic Color Terms: Their Universality and Evolution* (Berkeley; U of California P, 1969) and Eleanor Rosch, "Principles of Categorization," in *Cognition and Categorization* (Hillsdale: Lawrence Erlbaum, 1978)

buildings (museum, chapel, mill, etc.) which are uninhabited. Ghost-like and unannounced, a group of people suddenly appear, forcing the narrator away from the safety of the built environment and into the swampy lowlands of the island. Afraid of being discovered, the narrator becomes a voyeur, recording the day to day goings-on while hiding in the shadows. He notes their old-fashioned dress and strange, repetitious patterns of behaviour. Drawn to a woman named Faustine who repeatedly can be found sitting, looking pensively out over the ocean, the narrator tries to make contact but she seemingly ignores his efforts. In fact, all of the inhabitants on the island seem unable to sense the narrator in any way.   Eventually, the narrator learns that Morel, the owner of the buildings on the island, invented and used a machine able to record, replicate and play-back humans, their activities, and their environments. What the narrator has been witnessing is the same two weeks of recorded images playing out in succession, repeating the same actions over and over again. The machine is fuelled by the flooding patterns of the island which explains the sudden appearances and disappearances of the projected images. Being recorded is fatal, resulting in a slow, agonizing death. Unable to leave the island, and hopelessly in love with the image of the now-dead Faustine, the narrator records himself as a participant alongside the images that he has been observing. He inserts himself as if he were a part of their group, acting the part of a lover to Faustine so as to "give the impression of being inseparable, of understanding each other so well that [they] have no need of speaking" (Bioy 101).   The novel ends on the image of the narrator sitting in front of a screen of mirrors, his body slowly disintegrating as he watches his virtual self as a moving image alongside Faustine.

The Invention of Morel is part SF, part detective fiction, and part adventure story. The narrator is simultaneously survivor and detective in a completely isolated fictional world and

as such, the narrative oscillates between an extreme awareness of the body and a sensitivity to changes in physical and social environments. I argue that this oscillation is indicative of biological processes of consciousness. The unnamed narrator is in a constant state of physical and mental deterioration; his hunger, fatigue and paranoia colour the narrative and give rise to a host of misattributions, misunderstandings and faulty mind-readings. On the backdrop of the intentionlessly destructive natural events and a hollow, repetitive cast of *dramatis personae*, the narrator's fictional mind is the engine which powers the reader's navigation of the fictional world. The embedded narratives, including dreams, memories and potential explanations for the island's mysterious inhabitants, are both internally referential as well as dependent on interaction with the world outside of the self. The tension between intramental (within his own mind) and intermental (between several minds) thought is heightened by his interaction with a world populated by unchangeable, repeating moving images. As Suzanne Levine writes in her introduction to the 2003 NYRB edition of the novel translated by Ruth Simms, the "reader experiences an effect of referentiality but there is no reality outside the terrifying or beautiful mirror, outside the text – or the perception" (xi). The narrator's paranoia and lack of expertise creates multiple, potential actions and reactions, while at the same time obscuring the reader's ability to assess the reality of the situation as it unfolds. The novel favours a stylistically objective approach which is both clinical and concise. The narrator reports and then revisits his earlier conclusions based on updated information processing. The result is a history of draft revisions which are aimed at explaining the narrator's experiences. This approach to *The Invention of Morel* emphasizes the narrative generation of embedded narratives as produced through (or "spiced" with, to continue the flavour metaphor) a single fictional mind. By differentiating between internal and external narratives, I show how they blur into one another

and are at times communicated simultaneously. In this way, first-person narration becomes stylistically and structurally unified through the lens of its fictional mind.

Morel's machine scans the world around it, makes a recording of all of the activities and organisms in its environment, and then projects them. It records not only the sensory data, "images extracted from mirrors, with the sounds, tactile sensations, flavors, odors, temperatures, all synchronized perfectly", but also, Morel believes, records and reproduces the soul (Bioy 70). During his speech where he reveals his invention to his guests, he tells them that his invention is the answer to immortality: "when all the senses are synchronized, the soul emerges. When [a human] existed for the sense of sight, hearing, taste, smell, and touch, [the human] herself was actually there" (Bioy 71). The novel calls into question Morel's conception of consciousness through its insistence on the body. There is a sensuality to the text that is mediated through the survival experience of the narrator. Bioy uses Wellsian imagery intended "to apply shock therapy to inert minds," including disintegrating flesh, fetid marshes, nausea and long-dead corpses (Crossley 357). The novel is lyrical, lush and descriptive but is at the same time filled with horrific and sickening imagery. The sensual and emotional descriptions of the narrator are read in stark contrast to the antiseptic and cold descriptions of the images. Spontaneity is the hallmark of the narrator's frenetic emotional rollercoaster. On the other hand, the images' movements are repetitious and unchanging, no matter the change in external situation. In the mind of the narrator, the appearance of the images is a threat to both his freedom and his survival. However, his love for Faustine draws him into a world with no physical reference, resulting in complete mental disorientation.

In a beautiful reflection on the novel, Octavio Paz wrote the following about *The Invention of Morel*, emphasizing the metaphysical dimension of the narrative:

The body is imaginary, and we bow to the tyranny of a phantom. Love is a privileged perception, the most total and lucid not only of the unreality of the world, but of our own unreality: not only do we traverse a realm of shadows; we ourselves are shadows (qtd in Levine viii).

While there certainly is constant interplay between reality and illusion throughout the novel, I offer a different interpretation from Paz, one which takes into account the privileged relationship the narrator has as both objective and subjective spectator. He records his own subjective experience in tandem with his objective stance on the illusory world to which he is exposed. The world comes into the narrator's mind, and by extension the reader's mind, through his senses. He becomes tied to the world of the moving images, eventually blurring the parallel worlds into a single stream. The mirror world of Morel, the two suns, the two moons, creatures simultaneously dead and living, structures both built and natural reinforced by eternal imaging, is navigated (albeit imperfectly) through the phenomenal self-awareness of the narrator.

It is important to mention that because fictional minds are accessed only through a semiotic entryway into the fictional world, "it is only the reader who can have an awareness of a fictional mind… [It] can only be constructed by means of third-person ascription" (Palmer *Fictional Minds* 141). In *The Invention of Morel*, the ascription process is enmeshed in multiple layers of information. The images are interpreted by the fictional mind of the narrator at the nexus of behavioural observation and disposition (impacted by memory, beliefs, wishes, desires, etc.). However, those ascriptions are combined in the mind of the reader with the character profile of the narrator, and their own mental attribution as they attempt to navigate the dual layers of the story world.

Because the mirror world is non-responsive to external stimuli, the only reference point in the novel is the narrator's bodily experience. The narrator's fictional mind is the only conscious mind on the island. All of the conflicts on the island, be they emotional or physical, are generated from and solved within the mind of the narrator. In contrast, the conflicts which occur between Morel and his disciples are irreconcilable and static. As the narrator struggles to understand the mystery behind the repetitious actions of his unexpected cohabitants, his suspicion turns to disgust. However, as he continues to monitor the images, he becomes comfortable with them, and views them as if an audience member. When he becomes trapped in the machine room, the wall between the narrator and the images breaks down. He decides to record himself. His desperation led him to "the feeling that I was playing a dual role, that of actor and spectator. I was obsessed by the idea that I was in a play" (Bioy 92). He decides to go "offline" and join the recording, leaving his body behind. According to the definition that I explore in this thesis, Morel's images are not capable of consciousness, as they are unable to sense and react to their surroundings. They are only capable of replaying exactly the scenes as they were recorded, and as a result, are incapable of creating and processing new phenomenal experiences. The narrator's sentiments echo this argument. He knows that "the images are not alive" but he simultaneously wishes for "a more complete machine" which is able to record "one's thoughts or feelings during life…like an alphabet with which the image will continue to comprehend all experience" (Bioy 82). Even if this were to be the case, the images would only be able to reassemble recorded experiences; no new phenomenal experience would be possible. Morel's images are not clones, but are rather unchangeable, multi-dimensional snapshots, moving statues literally housed in a museum.

Bioy's novella is heavily influenced by two major literary predecessors. The first is the short story "Morella" by Edgar Allan Poe, the second *The Island of Dr. Moreau* by H.G. Wells. Both are told from first person perspective. In "Morella", the narrator looks on in horror as his wife dies and her spirit transplants itself into their daughter's host body after an unnatural and horrific metamorphosis. Morella was obsessed with mysticism and immortality, spending all of her time in bed reading as her body disintegrated. She dies in childbirth but explains to the narrator that she will live on. The daughter grows up in "perfect resemblance" of Morella, in both body and mind until, at the story's climax, Morella takes over the daughter's body. The story reaches deeper to question immortality and identity, littered with symbols of death and reincarnation. Poe writes:

> The identity which is termed personal…truly defines to consist in the sameness of a rational being. And since by person we understand an intelligent essence having reason, and since there is a consciousness which always accompanies thinking, it is this which makes us all to be that which we call *ourselves*, thereby distinguishing us from other beings that think and giving us our personal identity. But the *principum individuationis*, the notion that identity *which at death is or is not lost forever*, was to me, at all times, a consideration of intense interest; not more from the perplexing and exciting nature of its consequences, than from the marked and agitated manner in which Morella mentioned them (106).

This inquiry into the substance and unity of the self is echoed in *The Invention of Morel* in two major ways. First, the theme of immortality is bound to the division between the body and the spirit/mind/self. Is identity, or as Poe calls it here *principum individuationis,* something that transcends its mortal shell? Both stories are peopled by reproductions which are versions

of the self. Morella's soul is parasitic, shaping and consuming the body of her daughter. Bioy, on the other hand, never gives any definitive speculation as to the whereabouts of the soul in respect to his replicants. Morel and the narrator believe that the representations can and do contain the souls of the originals as they existed in the space and time in which they were recorded. As the narrator dies, he notes "my soul has not yet passed to the image; if it had, I would have died" (Bioy 103). This gestures not to a divide between mind and body, but to their interconnectedness; as long as the narrator can sense, visually and otherwise, he is still caught up in the experience of consciousness.

The second convergence between "Morella" and *The Invention of Morel* is the ethical dimension of pursuing immortality. Morella's vigor for immortality matches Dr. Morel's, and it is a monstrous, terrifying obsession. In both cases, the second "life" is a deadly compromise: Morella kills her daughter's identity with her own; Morel kills all of his guests, "replacing them with an illusion" (Hernandez 197). Where Morella turns to mysticism in her quest for eternal life, Morel turns to the scientific paradigm. Maria Hernandez argues that Morel is a symbol of the "desire for human beings to be defined through technology, a need to re-animate themselves as the technological double of the human in an environment turned virtual" (186). The technology of representation is a major motif, with constant reference to phonographs, photography, and mirror images. The impact of Morel's desires has wider reaching effects than Morella's. His quest for immortality means sentencing an unknowing group of people to death. The reactions of the narrators in both "Morella" and *The Invention of Morel* contain embedded critiques of this ethical dimension; they react with horror and disgust. Morella's husband "longed in earnest and consuming desire for the moment of Morella's decease" (Poe 107). The unnamed narrator of *The Invention of Morel* similarly plots, at various points in the story, the

death of the images which plague him, both before and after he understands the mechanism behind their appearance. "I experienced," writes the narrator, "a feeling of scorn, almost disgust, for these people and their indefatigable, repetitious activity" (Bioy 75). From "Morella", Bioy borrows not only a central theme of identity and immortality, but also a gothic tone and an abject narrator who is both drawn to and repelled by the miracle of reincarnation.

Bioy returns again and again to another major literary work, H.G. Wells' *The Island of Dr. Moreau*. There is a recurrence of the isolated island setting and of the evil scientist. Morel, like Moreau, usurps "the role of the creator," with both having invented methods for overcoming the cycle of life and death (Shippey 21). While the invention at the centre of the respective stories is vastly different (Moreau dissects and reassembles animals into humans to understand reanimation where Morel is interested in the technology of imagistic replication), both figures are obsessed with human self-construction. They go beyond the ethical boundaries of their experiments in the name of human progress. Bioy borrows from Wells character archetypes and narrative structure which results in a "symbol-rich psychological drama of isolated, fraught characters" (Csicsery-Ronay 44). Small components of Wells' tale speckles Bioy's novella[6], but is additionally indebted to Wells' formal legacy, the scientific romance, which uses a fictional construct to "ponder the metaphysical core of scientific ideas" (Csicsery-Ronay 45). Wells departs from Shelley's mysticism and Verne's adventure narrative through his insistence on exploring technology's impact on the human race. Rather than pure fantasy, the story contains technological constructions which are extensions of real world inventions, making concrete connection between the real world and the ethical and moral dimensions of

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[6] *The Island of Dr. Moreau* is central to not just this, but many of Casares' works. Suzanne Levine calls it a "leitmotif throughout Bioy's novels" (x).

the narrative. In Borges' prologue, he points out that all "the odyssey of marvels [Bioy] unfolds seems to have no possible explanation other than hallucination or symbolism, and he uses a single fantastic *but not supernatural* postulate to decipher it" (emphasis added, Bioy 7). The narrative's incorporation of a technological, objective explanation demystifies the "how", and allows the reader to focus on the symbolic and metaphysical dimension of the plot. Like Wells' novel, *The Invention of Morel* thematically explores "the reciprocal evolution of Science and Humanity. Men create science; science, in its turn remakes mankind" (Parrinder 100). Unlike Wells, Bioy sets up a temporal divide between the mirror world and the real world which disconnects the narrator's ability to reflect on the ethical dimension of Morel's experiments. Where Wells preferred narrative with a didactic function, Bioy's story is morally ambiguous. At first, the narrator proclaims the images unnatural, but he is swayed by Morel's rhetoric and participates in the experiment himself. He ultimately aligns himself with Morel's goals and becomes convinced that Morel is also in love with the inaccessible Faustine. He comes to "see Morel's act as something sublime" (Bioy 100).

With these elements in mind, I approach *The Invention of Morel* as a canvas on which to showcase a cognitive approach to fictional minds and fictional worlds. The novel evokes a storyworld by convincing the reader that "at the center of this universe there resides an actual or real world, a realm of factual states or events…inhabited by intelligent beings who produce a variety of mental representations such as beliefs, wishes, projections, intents, obligations dreams and fantasies" (Palmer *Fictional Minds* 188). By illustrating the ways in which characters are caught up in the processes of consciousness by pointing to both visible and non-visible (verbal and non-verbal) markers of fictional mental functioning, we are simultaneously

revealing the "mental constructs [which] constitute the private domain of characters" (Palmer *Fictional Minds* 188). Uri Margolin in his work on character typology offers the concept of a character as a non-actual individual, "a non-actual being who exists in a possible world and who can be ascribed physical, social and mental properties" (Palmer *Fictional Minds* 38). These properties are of use to the reader in understanding character motivations, plot progression, and the spatiotemporal orientation of the fictional world. Rather than emphasizing the subjectivity of experience, I argue that differentiating between internal and external narratives, and illustrating how they inform each other, is a productive interpretive stance.

In *The Invention of Morel*, reading characters as possessing fictional minds has several implications. First, the narration is embodied. The novel uses the narrator's sensory experience as a reference point by which to navigate a world without substance. That experience is represented in sparse, concise language, emphasizing the isolation of the narrator, who, as is characteristic of Bioy's narrators, "says less rather than more, inviting one to read between the lines" (Levine xiv). There is a tension between what is said and what is left unsaid and these gaps blur the line between illusion and reality. Second, the novel showcases a narrator who is monitoring both his internal and social milieu. As such, the novel is a case-study in mind-reading. As more information is revealed to the narrator, he adjusts his explanations in kind. Much of his information is the result of his voyeurism; it is based on his (mis)understanding of the behaviours of others. The reader witnesses a constant mental (mis)attribution based on his objective stance as he records and revises over and over again. The underlying structure of the novel is caught up in a cycle of sensory experience, processing, re-evaluation, and redrafting. Finally, it is through this embodied and necessarily social narration that the reader comes to understand the composition of the fictional world, on both physical and symbolic levels. As

Alan Palmer explains, most novels contains instructions, or "evidence on which readers base their conjectures, hypotheses, and opinions about fictional minds" (*Fictional Minds* 11). Approaching the narrator as a fictional mind provides a window through which the interpretive landscape can be transformed and enriched by interdisciplinary knowledge.

Chapter 3: Narratological Approaches to Fictional Minds

The aim of this thesis is to develop a conceptual framework which highlights the characteristics of the fictional mind as a site of narrative generation. In so doing, it is important to emphasize that fictional minds, and the fictional worlds in which they are situated, are "accessed through semiotic channels and by means of information processing" (Doležel *Heterocosmica* 20). The association between actual and the fictional are semiotically mediated, making accessibility "bidirectional, multifaceted, and historically changing" (Doležel *Heterocosmica* 20). In this chapter, I look at some narratological tools which give substance to the interpretive space between the fictional and the actual. Understanding "fictional worlds of literature," and I would add fictional minds, as "aesthetic artifacts constructed, preserved and circulating in the medium of fictional texts" allow them to become subjects of cognitive methodologies in one of two ways. First, we can look at fictional minds as holistic narratives that connect action, mental activity and affective states. Uri Margolin for example views "an individual fictional mind and its activity as the origin of the narration" (280). As an extension of this, I shift attention to how narrative perspective plays a role in cognitively framing discourse. I argue, using Monika Fludernik's categories of narrative transmission, that

narration requires cognitive frames[7] and naturalization in the mind of the reader. How do the mental events of a narrator who is also a storyworld participant factor meaningfully into narrative transmission? Second, we can view fictional entities as non-actualized possibilities who are ontologically homogeneous. This line of questioning emerges from possible-world theory, an extension of modal philosophy. According to possible-world theorists, fictional worlds are versions of possible worlds "constructed by the creative activities of human minds" (Doležel *Heterocosmica* 14). As I argue later in this thesis, the macrostructure of the fictional world consists of "symbiosis, hierarchies and tensions of many domains," including, but not limited to, the embedded narratives which make up the fictional mind (Doležel *Heterocosmica* 13).

Classical narratology, the study of narrative and its relationship to perception, is largely aligned with the structuralist paradigm. Scholars such as Propp, Genette, Prince, and Todorov sought to understand narrative's impact by creating a taxonomy of narrative forms and terminologies with which to analyze and interpret the stories within. Todorov defines narratology as "the theory of the structures of narrative. To investigate a structure, or to present a 'structural description', the narratologist dissects the narrative phenomena into their component parts and then attempts to determine functions and relationships" (qtd Jahn "Narratology"). Most classical narratologists begin with a differentiation between story and discourse, or as Marie Laure-Ryan puts it "a poetics of discourse and a poetics of plot" (*Possible Worlds* 149). We engage with "plot summaries as primary data" and realise that there is a "level of meaning disembodied from the medium" which constitutes narrative discourse (Ryan

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[7] I use the word frame, schema and schemata interchangeably throughout this thesis.

Possible Worlds 149). For example, if we imagine the story to be the sequence of events, or the action, in a given narrative, the discourse is the mode through which the story is conveyed. The "what" of the story, the content, "is always mediated [by the discourse]…so that what we call the story is really something that we construct" (Abbott *Narrative* 17).

The distinction between story and discourse is undoubtedly problematic, as readers will always bring their own personal frameworks to the reading of text and "any attempt to tell the story simply results in another discourse" (Palmer *Fictional Minds* 18). Challenges from post structural, postcolonial, feminist and queer scholarship call into question the universality of these narrative cosmologies by revealing an underlying rigidity in approach[8]. They rely on a problematic conception of the canon, and were not open to new forms of narrative or substantial changes in existing forms. Post-classical narratologists scaffold interdisciplinary and contemporary literary theoretical approaches onto existing narratological frameworks to evince new ways of approaching narrative structure which take into account pragmatics and reception theory. The focus has expanded to include more discursive forms of storytelling, including oral, graphic novel, filmic and ludic narratives. Discourse is no longer conceived of as a textual given, but rather an interpretive construct whereby "readers infer and keep track of narrative-internal events as they engage with textual cues: the story is the dynamic result of this interpretive activity" (Carracciolo 50). The reader's reconstruction of the text is certainly mediated by underlying structures, but interpretation is also a product of that reader's frameworks of knowledge, familiarity, emotional state, and cognitive processing. This is

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[8] The concept behind the term "universal" is undergoing radical changes in the face of research on cognitive architectures. Patrick Colm Hogan, for example in his article "Literary Universals" argues that the hegemonic and exclusionary results of empirical universalism and normative absolutism emerge from a kind of pseudo-universalism. There is a place for literary universals if we imagine sameness in cognitive structures (like the recognition of faces, or acquisition of language) do not equate to sameness of phenomenal experience.

perhaps seen most clearly in the relationship between narrative and affect: the same text may register a different emotional response depending on the memories and subjective mental framing of the reader.

Cognitive narratologists are one such postclassical breed, overlaying narratological structures with real-mind research from other disciplines, including cognitive science, neurobiology, psychology and philosophy of mind. Take, for example, the connections being made between cognitive psychology and cognitive linguistics through the concept of the cognitive frames, the "mental representations through which we conceptualise language" (Gavins 3). Language structures both the textual and conceptual representation of a given narrative, connecting "our multiple mental representations to form a coherent and meaningful whole in a variety of ways, responding to and evaluating individual language features differently" (Gavins 6). From this starting point, we can ask several questions. How does a certain narrative evoke or align with a given cognitive frame? What are the components of that representation and how do they manifest in a fictional world? How does a reader utilize cognitive frames in making sense of a given narrative? This is an example of the way that cognitive narratologists utilize cognitive theory and terminology in tandem with literary theory to make visible the unconscious characteristics of the fictional mind and evince meaningful textual interpretation.

I am primarily concerned with narrative discourse and how it shapes and is shaped by the presence of a fictional mind. The organization of narrative discourse has an impact on how the reader experiences narrative. Uri Margolin summarizes well the four levels of narrative communication outlined by classical narratologists:

1. Communication between *author and reader* – An author's cognitive activity is

the creative force behind "a verbal text and it's correlated… text world".

Reader "perception of verbal signs, subjects the textual information…to a

multistage…cyclical processing activity whose final product is a complex

mental representation or image of the text's storyworld"

2. Communication between *implied author and implied reader* – the implied

   author, a character to whom the reader may attribute authorship,

   "manipulate[s] information concerning the text world in particular ways both

   semantic and compositional" which manipulates the implied reader, or the

   author's intended (imagined) audience, "so as to create certain attitudes and

   judgements…with respect to storyworld participants" [9]

3. Communication from a *narrator* - the narrator's perspective forms a

   "particular slant, cognitive and emotive, on individuals, states, actions, and

   events" which substantially frames fictional world construction; and

4. Communication between *storyworld participants* – The sovereignty of the

   fictional world requires storyworld participants who are ontologically the

   same. These "interacting individuals who perceive the world around them,

   construct mental representations of it, form intentions… construct in their

   minds theories about their co-agents, draw inferences, solve problems,

   formulate generalizations, recollect past episodes and, in fact, engage in any

   conceivable cognitive activity" (Margolin 273)

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[9] Suzanne Keen's *Emphathy in the Novel* is an excellent treatment of the implied reader.

This is a useful scaffold as each of these levels gestures towards a cognitive dimension. By this, I mean that each level can be described in terms of the relationship between narrative as a verbal transmission and cognitive activity. For the purposes of this thesis, I am focusing mostly on the implications of communication from a narrator, and between storyworld participants. However, where possible I will gesture to the relationship between the reader and the text, as I think that the horizon of this type of analysis is asking why and how narrative shapes and engages with the reader's cognitive frames[10].
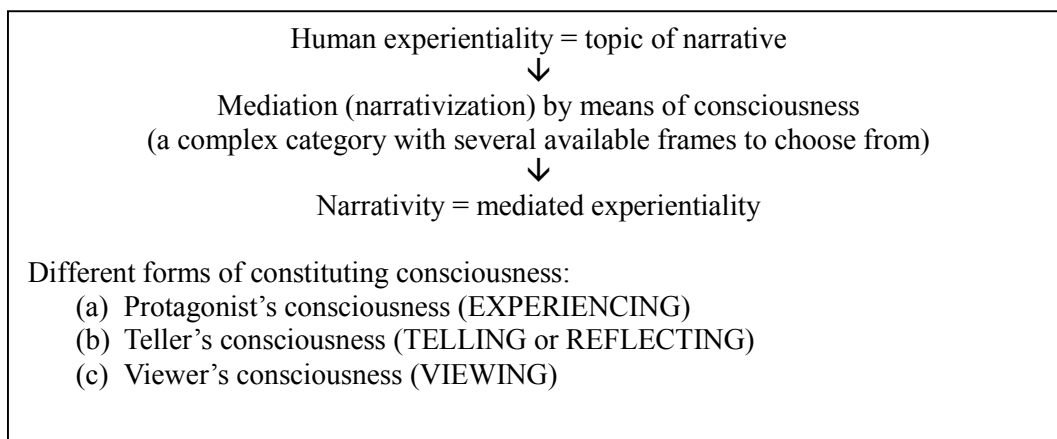
As Monika Fludernik notes in her book *Towards a Natural Narratology*, these classical approaches do not necessarily take into account that narrative transmission is fundamentally coloured by the consciousness of the reader. Narrativity, for Fludernik, is not concrete, but is contingent on both potential levels of narrative communication (e.g. author/reader) and through the ways in which it interacts with cognitive frames. In her postclassical approach to narrative, drawn from conversational, or "natural", language and constructed through cognitivist paradigms, Fludernik outlines four cognitive frames which "interface with the mediation of narrative through consciousness" ("Cognitive Parameters" 244). The first are basic level schemata which comprised of the readers' real-world understanding of what given action consists of. A good example of this is attribution, or as I will discuss later, mind-reading, whereby a reader ascribes, for example, an emotional state based on a physical indicator (tone of voice, facial expression, and body language). Basic level schemata are often associated with theory of mind, a term used by philosophers and psychologists to "describe our awareness of other minds, our knowledge of how to interpret our own and other people's thought processes,

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[10] For example, Lisa Zunshine's *Why We Read Fiction* contains a chapter on detective fiction and cognitive frames which explores the relationship between the mind of the reader and the expectations and building blocks of genre.

[and] our ability to make sense of other people's actions by understanding the reason for those actions" (Palmer *Social Minds* 20). The second set of cognitive frames are those that "define the narrative material within a perspectival paradigm" (Fludernik "Cognitive Parameters" 244). Fludernik identifies five such perspectival frames: action frames which are concerned with "series of events and reactions to them"; telling frames which gauge the degree of "familiarity with the storytelling"; the experiencing frame which refers to the "protagonists immersion in the experience"; the viewing frame that "conceptualizes an on-the-scene spectator watching narrative events"; and the reflecting frame which orients the reader towards a "mental evaluation of the experience" ("Cognitive Parameters" 246). These frames refer to how narrative parameters set cognitive frames for "readers' attempts at making sense of texts" (Fludernik '*Natural*' *Narratology* 33). In essence, they are not concerned with interpretation, but with cognitive perspective that the text encourages the reader to use. The third set of cognitive frames are related to genre and historical framing, for example, satire, or forms such as the dramatic monologue. Finally, the fourth frame that Fludernik refers to is the way in which the first three schematas are brought together, how the overall narrative "utilizes elements from the first three levels in order to constitute narrativity" ("Cognitive Parameters" 244).

Fludernik intends for these narratological categories to be fluid and gradient. These are not components of a story, but rather "explanatory schemas of access to the story" which narrativize discourse by correlating the text with a frame from recognizable experience (Fludernik '*Natural*' *Narratology* 32). Most texts require a combination of several schemas and their primacy can change based on the level of transmission identified. Different authors encourage the use of some schemas over others. Over time, there are certainly shifts in

convention and stylistic trends, for example, the degree to which the reader is given access to internal mental life and activities. Contemporary readers of fiction expect a direct and open transmission of internal life, often with less of a focus on plot or action. Medieval ballads, on the other hand, are closely intertwined with the role of a bard, so the form and structure includes aural, sing-song qualities and adaptations for memorization. However, the fictional mind (or as Fludernik calls it experientiality), is a topic that can be found in all narrative forms. Figure 1 below, a concise flow chart of the process and parts of Fludernik's proposed paradigm of 'natural' narratology, shows the connection that Fludernik evinces between human experientiality and the interpretation of fictional minds. Because the fictional mind is present in text, it becomes the bridge between the actual and the fictional. When we apply knowledge about cognitive frames to narrative forms we see patterns in narrative structure which correspond to varying constitutions of conscious experience. These prototypes are "describable as metaphorical applications of typical real-world strategies of sense-making" (Fludernik *'Natural' Narratology* 37). In short, we can attempt to identify which cognitive frames are activated when we mediate the speech acts into the components of a narrative form. In turn, the narrativity of that text is mediated by parameters of consciousness.

> Human experientiality = topic of narrative
> ↓
> Mediation (narrativization) by means of consciousness
> (a complex category with several available frames to choose from)
> ↓
> Narrativity = mediated experientiality
>
> Different forms of constituting consciousness:
>   (a) Protagonist's consciousness (EXPERIENCING)
>   (b) Teller's consciousness (TELLING or REFLECTING)
>   (c) Viewer's consciousness (VIEWING)

(Fig 1. Fludernik's proposed paradigm for 'natural' narratology, adapted from *Towards a Natural Narratology*, 37)

The inference here is that the presence of the fictional mind in text is both a topic and a narrative perspective. Access to the fictional mind, albeit incomplete and potentially misleading, is not a static object but one that is presented using specific perspectival paradigms. "Consciousness," writes Fludernik, "comprises both lived experientiality and intellectual attempts to deal with the experience and it includes the comprehension of actancy just as it…embraces and understanding of mental processes" (*'Natural' Narratology* 36). The perspectival paradigms of telling, reflecting, experiencing, and viewing in a text align with prototypical cognitive frames proposed by psychologists and linguists for actual speech acts. The negotiation of these frames constitutes the narrativity of a given text. Telling, for example, is aligned with the "prototype of the human teller, the ruling consciousness of a narrator, to mediate story experience" (Fludernik *'Natural' Narratology* 36). The ways in which experientiality is presented requires a parallel investigation of both deep-structural textual patterns and the "mediation of narrative which employs consciousness as its cognitive structure" (Fludernik *'Natural' Narratology* 36). Literature "manifestly exceed[s] the boundaries of naturally occurring story (telling) situations" often hyper-exaggerating or greatly diminishing schematas as a part of the fictional experiment (Fludernik *'Natural' Narratology* 9). We can think of cognitive frames as prototypes of embodied, natural response which guide the mediation of text through our consciousness. "Prototypicality and embodiment," writes Fludernik, "lend themselves to metaphoric extensions and transfers that increase potential applicability" (*'Natural' Narratology* 12).

The Invention of Morel is an exemplary text for disentangling these layers of mediation the text contains myriad cognitive frames which are complex and extremely fluid, framed within a first-person perspective. First, as a 1940's SF novel, the reader has certain expectations of genre and historical convention. In his prologue to the novella, Borges lauds Bioy's use of the fantastic as it rebelled against the literary trendiness of 'psychological novels,' a genre valued over adventure stories (or more broadly genre literature, including detective fiction), thought of as less, puerile forms. Borges states that in *The Invention of Morel* "Bioy renews in literature a concept", by which he is referring to its inclusion of fantastic material (Bioy 7). The novel is additionally framed by its Latin American roots. Although Bioy is Argentinian and the narrator of *The Invention of Morel* Venezuelan, the "aesthetic distance" does little to diminish the direct political barbs embedded in the novel (Levine xii). These schemas are more generally mediated, and are general aspects which engage with the narrativity of the novel.

The meat of the cognitive interplay in the novel comes from attempts to navigate the fictional mind of the narrator. Because the novel takes place from a first-person perspective, the text shifts rapidly between perspectival frames. He is at the same time telling, as his mind is told. Some speech acts are simultaneously world-building statements, indicators of the narrator's consciousness, and textual signposts which build narrativity. At different times in the text, the experiencing, viewing, telling (and through extension, reflecting) schemas all frame the understanding of character agency, goals, emotions and motivations. Because the action schema is aligned with non-experiential narrative, it is not very present in the novel, at least not in the same way that say a 19th century historical fiction novel would have descriptions of action without experiential framing. The two most prominent throughout the novel are viewing and telling. At times these give way or are subject to parallel frames of experiencing and reflecting

which enhance the effect of understanding and/or dissonance of a given situation. The unnamed narrator is at the same time protagonist, teller and viewer, caught in a quest to unravel a mystery at the centre of the island, so his fluid shifting between cognitive frames extends to the mind of the reader; we must use all of the frames available to us just as the narrator must, to tease out the real answers from the imagined ones. His commentary narrativizes the subjects of his study, the projected images, showing the existence of these cognitive frames. The mirror imagery in the novel, the descriptions of repetitious language and behaviour, and the narrator's incessant voyeurism relies upon the viewing frame. It makes the action of the story impersonal and removed. Interspersed in these long passages of viewing are deeply personal telling and reflecting cognitive frames, indicating the telling and reflecting frames that come naturally to first-person narratives. In the passage below, I have added, in italics, indications of different moments where cognitive frames are invoked.

> I watched them for seventeen days (*viewing*). Not even a man who was in love would have found anything suspect about the conduct of Morel and Faustine…We can always find a cause for suspicion if we look for it *(telling/reflecting)*. On one afternoon of the eternal week they walk arm in arm near the palm groves and the museum – but surely there is nothing amiss in that casual stroll.

> Because I was determined to live up to my motto, *Ostinato rigore,* I can now say with pride that my vigilance was complete; I considered neither my own comfort nor decorum; I observed what went on under the tables as well as in the open (*viewing/experiencing*)…

I repeat: there is no conclusive proof that Faustine feels any love for Morel.

Perhaps my own egotism made me suspect that she did (*reflecting)*. I love Faustine:

she is the reason for everything (*telling)*. I am afraid that she loves another man:

my mission is to prove that she does not (*telling*). When I thought that the police

were after me, the images on this island seemed to be moving like the pieces in a

chess game, following a strategy to capture me (*experiencing)*. (Bioy 83-84)

In this passage, the narrator watches Morel and Faustine so as to ascertain the emotional

reality of their relationship. However, the viewing frame converges with the experiencing

frame, as the narrator's attempt to record and report all observable activities is his main mode

of experiencing the story world. We see shifts in perspectival framing when the narrator

attempts to tell us why he is conducting himself the way he is. He tells us that Faustine does

not feel any love for Morel, and then reflects on his own emotional state, his love for Faustine.

Again, the text shifts from internal narrative to telling schema and back again to his experience

of the island.

Fludernik's cognitivist paradigm is useful for understanding how the motivations and

actions of a fictional mind are made explainable through cognitive framing, but there is another

environmental aspect that requires a brief mention: the construction of the fictional world itself.

A fictional world, according to possible-world Theorists, can be understood as an ontologically

homogenous, unactualized world created through imaginative extensions of possible scenarios.

Possible-world theory began as an extension of modal philosophy, the area of philosophy that

makes "claims about what is necessary, possible, contingent, essential and accidental"

(Vaidya). Kripke (1963) proposed "a model structure for model logic…interpreted in terms

of possible worlds" (Doležel *Heterocosmica* 12). However, the philosophical extensions of

possible-worlds, as logical models, "are not prepared with fictional sentences" as they are "extensions and testers of a concept of truth against which fictional sentences are born" (Mihailescu and Hararneh 9). In order to make possible-world theory a viable model for literary criticism, it is the author who ignites the semiotic potentials of a literary text… [bringing] into existence a possible world which does not exist prior to this poetic act" (Doležel "Mimesis and Possible Worlds" 488). Fiction can gesture to the real world, and is made up of real world material, but must be viewed as a separate, fundamentally incomplete, but self-sustaining semantic model.

In literature, possible-worlds are contained "aesthetic artifacts" comprised of both spatiotemporal structuring, and the whole of the events and actions which take place in the story. Fictional worlds, then "are mental models of events and worlds depicted by narratives, which prompt the reader to "spatialize storyworlds" in reference to "evolving configurations of participants, objects and places" (Sinding 70). Lubomír Doležel, one of the most prominent possible-world theorists, argues that "fictional worlds are ensembles of non-actualized possible states of affairs" (16). Works of fiction are world constructing texts, or C-texts in that they "stipulate their referential domain by creating a possible world" (Doležel *Heterocosmica* 26). For Doležel, C-texts have coherent cosmologies, and as interpretive models, they offer alternative designs of the universe. Both story and discourse are accessed semiotically, but the exchange is bidirectional: "in one direction, in constructing fictional worlds, the poetic imagination works with "material" drawn from actuality; in the opposite direction, fictional constructs deeply influence our imaging and understanding of reality" (Doležel *Heterocosmica* x).

Fictional worlds are not constrained by truth-valuation with the real world, although readers do use their knowledge of the real world as a prototype by which to begin imagining the events and images present in fictional worlds. Ruth Ronen points out that this is one of the problematic convergences between fictionality and possible-world theory, that "the duality inherent in the fictional universe" means that the fictional world is "ontologically and epistemically separated from what is external to it, while at the same time being a world modelled in certain ways after reality" (22). Because possible-world semantics requires "material from the actual world" to go "into the making of the fictional world," the construction of a fictional world means that material undergoes a substantial change by token of it being ontologically separate from the actual world and accessed only semiotically (Mihailescu and Hamarneh 7). By this token, fictionality becomes a semantic phenomenon which layers together "formal pragmatic aspects" with an "auxiliary theoretical role" (Doležel *Heterocosmica* 2). Thomas Pavel, the progenitor of possible-world theory, also reminds us of the connection between narrative, organization and semantic interpretation when he writes that "fiction is both a pragmatic and a semantic notion, since the organization of cosmological space obeys pragmatic reasons while the structure itself is clearly semantic" (143). These dual layers of fictionality allow for the application of real-mind approaches to fiction because they allow us to illustrate where narrative patterns mirror cognitive functioning. This is to say that a character may not have actual agency or mental functioning, but we can point out instances where cognitive functions simmer under the surface and can help us to understand and interpret certain activities and behaviours. Michael Sinding points out in his work on Frye and metaphor that there are "recurring organizing principles in human life, and so there are recurring organizing principles and structures in human metaphors, myths and mythologies" (3). One of
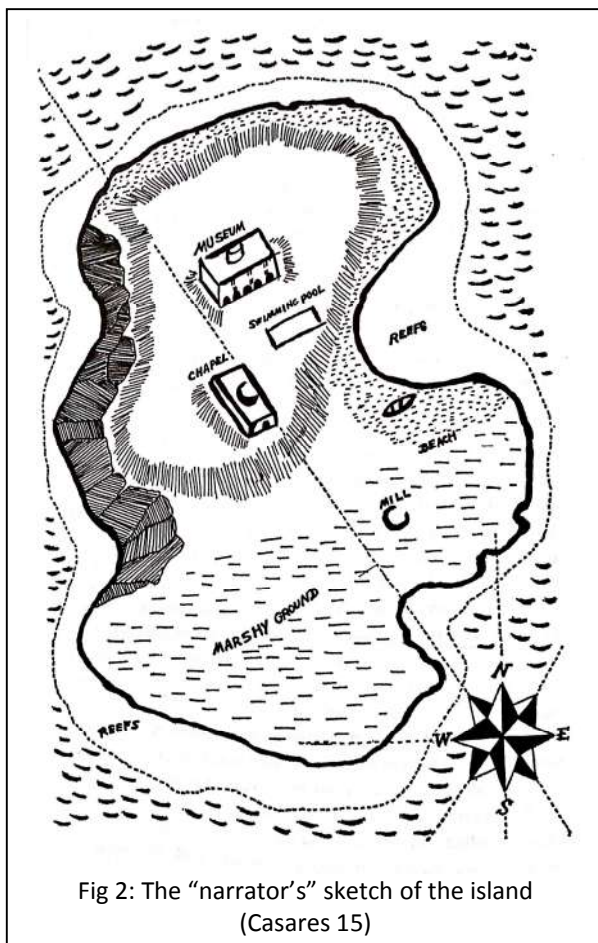
the organizing principles of human life is certainly cognitive architecture. By analysing fictional worlds as possible-worlds, we can also ask if recurring patterns of images, actions, behaviours, and concepts find any correlation with universal patterns of cognitive functioning.

Possible-world theory has two implications for this thesis in particular. First, in my discussion of embedded narratives, I indicate that mental events (like stories and dreams) and states (like emotions and expressed desires) are virtual, non-actualized possibilities which coalesce into the contents of the fictional mind. In so doing, I implicate narrative as a primary force in structuring fictional experientiality. Second, the process of the human mind making spatiotemporal sense is directly related to the human brain's occupation as cartographer. In Chapter 4 I will speak more specifically about the biological and narrative functions that cognitive mapping is responsible for.

The cognitive mapping which is central to information processing in real minds is a process which extends to the interpretation and understanding of text. Cognitive mapping, in regards to the literary text "denote[s] a global mental representation…that involves not just spatial relations, but any type of meaning and formal organization" (Ryan "Cognitive Maps" 215). Frederic Jameson pushes cognitive mapping one step further into the realm of social phenomena, seeing singular experiences "not in isolation but as a part of a world-spanning network of relations" (Ryan "Cognitive Maps" 215). A fictional mind can only be composed from an aspectual point of view, accessed semiotically and constructed by the reader. Our brain architecture "impose[s] a basic uniformity on fictional worlds that is necessary in order for us to be able to access them" (Palmer *Fictional Minds* 203). Identifying how fictional minds are caught up in map-making aids the reader in creating their interpretations of the story's

discourse. Map creation is central to narrative comprehension on several, simultaneous levels, including various spatial, temporal, social, and cultural dimensions of conscious experience. Spatiotemporal mapping is particularly important to textual navigation, because it allows the reader to understand character movements and creates a plausible, fact driven background environment "for the understanding of plot, character motivations, and the moral issues articulated in the text" (Ryan "Cognitive Maps" 216).

Mapping is central to *The Invention of Morel*. Bioy spends a significant amount of time providing the reader with an explicit geography of the island on which the novella takes place. He even provides, through the narrator's recording ability, a sketch of the island (fig 2). There are also verbalized layouts of the insides of buildings, and, more importantly to the plot of the story, the hidden machine rooms which power Morel's invention. We come to equate danger with the tumultuous and unpredictable tides which plague the marshes to the south where the narrator is initially forced to take up residence with the buildings in the north. Up (north) is good, and down (south) is bad. But at the same time, Up is dangerous because it is populated and "like every group of civilized men, they no doubt have a network of consular establishments and a file of fingerprints that can send [him], after the

Fig 2: The "narrator's" sketch of the island
(Casares 15)

necessary ceremonies or conferences have be held, to jail" (Bioy 11). Down, on the other hand, represents freedom from the "odious intruders" in the form of hard work and constant guarding against natural forces. The specificity of the geography places an emphasis on embodied experience. Our main character is moving through a world that has more depth and dimension; his perceptions of sight, smell, taste, touch and sound are all amplified because the space itself is visualized as a mental model in the mind of the reader. The vegetation of the island, the smell and sight of floating, bloated dead fish, the odd juxtaposition of dead underneath the projection of the living, are all sensual images which correspond to the reader's coordination of the spatial construction of the fictional world.

The island setting also creates a tone of complete isolation. This cosmology is what Doležel calls a one-person world. One-person worlds are "artificial and precarious structure[s]" which are the result of a single fictional mind, like *Robinson Crusoe* by Defoe (Doležel *Heterocosmica* 37). In a one-person fictional world, "only one person is admitted into the world". In *The Invention of Morel*, the solitude of the island is immediately broken by the sudden and mysterious arrival of other "people". As they disappear and reappear, and even when the narrator learns that they are not real people at all, their presence fundamentally alters the fictional world. The narrator's actions, once exploratory and focused on surviving in a difficult landscape, "are now…reactions to the threat posed by an…enemy" (Doležel *Heterocosmica* 38). He watches his "unconscious enemies" from afar, driving himself deep into the volatile marshes on the southern part of the island but he remains in solitude throughout the novel (Bioy 11).

The narrator is in an asymmetrical power relationship with nature throughout the novel, in that it is more powerful than him and entirely unpredictable and intentionless. Later in the

novel, he realizes that a book he had previously disregarded was actually a compository of information about the tides, based on meteorological and lunar observations, information that would have been invaluable to him during his early battles with nature. Despite this, the narrator is a rational agent. He does not build things from scratch, as buildings already exist on the island. Through his "patient recording of facts" and his reliance on trial by error, he is able "to uncover by induction the basic laws" of the fictional world" (Doležel *Heterocosmica* 40). For example, he learns to gauge the irregular tidal patterns of the marshes by recording its patterns over a long period of time. He also experiments eating various vegetables, roots and nuts to varying degrees of success. The narrative is a journal "a personal record" and a "rudimentary form of literature that will be fully realized only when it finds its reader" (Doležel *Heterocosmica* 41). The narrator is aware of the potential for someone, or no one, to come across his narrative. He writes that he "shall try to make statements that can be verified so that no one...will doubt…me unjustly" (Bioy 12). However, because it is a first-person narrative, the fictional world, on all levels "passes from world construction to world interpretation" (Doležel *Heterocosmica* 41). This shift is identical to the convergence between the viewing, telling and experiencing frames in Fludernik's model.

This chapter has focused mostly on levels of textual mediation. This is an important first step because it shows the deep structural patterns which can be found in narrative forms. But what cognitive narratology proposes is that these structures (like recurring patterns of imagery, mythology, and archetypal characters) are not in and of themselves the only elements of narrative which contribute to overall narrative coherence. Cognitive narratology extends the cognitive schematas with which we make sense of our own lives into the domain of the

fictional. There is also a recognition that this happens on several levels within the text. First, it occurs between storyworld participants. How does character A interact with character B? Second, it can be seen in the interplay between the reader and the fictional world. Rather than simply illustrating instances where fictive cognition is visible, we can start to ask what processes in a reader's mind allows for a specific interpretation of actions and events in a fictional world. If character A is always nervous when character B is around, how does character A feel about character B and how do we know that? Finally, we can align cognitive frames with components of narrative structure, most notably, for this thesis, narrative perspective. If we start from the premise that "readers actively construct meanings and impose frames on their interpretations of texts just as people have to interpret real-life experience in terms of available schemata," we can include cognitive schematas among the deep-structural components of narrative (Fludernik *'Natural' Narratology* 10). If a story is told in first-person perspective from character A's point of view, how does this impact the reader's access to and assumptions about character B? How much of character A is available through direct access to his/her mental activities and how much is gleaned through their negotiation of the fictional world? In terms of this thesis, these frameworks

In *The Invention of Morel*, the narrator is not just a storyworld participant, nor does he have ultimate (read: divine) powers of world-construction. Rather, as I discuss in the chapter to follow, he can be read as a fictional mind who is a world scripter. As an embodied and situated representation of consciousness, the narrator takes on the role of conceptual cartographer which is comprised of semiotic patterns of images and their semantic coherence. There is also a pragmatic component to the narrator's cartography, in that it shows an interaction with a fictional world which contribute to overall textual meaning. What is needed

is a bridge between the composition of the fictional world and the processes of consciousness on which fictional minds are modelled and through which the fictional world is mediated.

Chapter 4: Debating Consciousness – Damasio, Dennett and Cognitive Mapping

This chapter turns for a moment away from textual certainty towards the mysteries of consciousness. I argue, using Daniel Dennett's proposed tools for examining consciousness, that the construction of fictional and actual selves are surprisingly similar. First, I will briefly sketch a history of scientific (objective) approaches to subjectivity to give context to contemporary approaches which attempt to take into account both objective and subjective data in explaining conscious experience. Then, using the narrator in *The Invention of Morel* as an example, I look at the similarities between the narratives which compose the self and fictional narratives which invite the reader to imaginatively share in the mental world of its characters. I will argue that the self, both fictional and actual, is constructed and narratively shaped. Consciousness is a map of images, but it is also story, and conscious experience is only one element. Among the patterns which comprise consciousness are gaps, indicative of what Blakey Vermeule calls "the new unconscious", a non-representational, linguistically empty cognitive system outside of conscious awareness. How do we read unconscious processing? Some unconscious processes, specifically emotion programs and homeostatic monitoring, make themselves visible in *The Invention of Morel*, giving shape to the narrator's fictional mind by revealing multiple, potential layers of the fictional world bound up in mental events. Antonio Damasio's neuroscientific framework is particularly relevant in that it relies on evolutionary biology to unpack selfhood revealing stages which align with stages in evolutionary history.

Ultimately, this thesis is exploring ways to unravel the relationship between the fictional mind and its fictional environment. This chapter examines models of conscious experience, and identifies the processes of conscious (and unconscious) experience as they are present in text. The result, it will be argued, is to look at fictional minds as the sense-makers who bring together the stream of experience which constitutes the story (intentionality). However, the fictional mind is at the same time embodied. It is context dependent and riddled with gaps, full of unconscious external stimuli which criss-cross with environmental factors.

Although novels provide us with imaginative examples of fictional consciousness which can be studied as a coherent objects comprised of speech acts, the model of consciousness discussed in this chapter emphasizes that the instability of language and meaning in cultural production, especially in post-structuralist and deconstructionist readings, is a mirror of the instability of human consciousness. As Ellen Spolsky points out, "because the human species and its ways of knowing are evolved by the accumulation of random mutations in interactions with changing environments rather than genetically engineered for the task of knowing, it is not at all surprising that they are unstable" (52). Consciousness is situated and highly vulnerable to changes in our environment, but "this instability…provides the possibility for advantageous flexibility" (Spolsky "Darwin and Derrida" 52). In Chapter 5, I examine fictional minds as comprised of embedded narratives. Establishing that consciousness itself shares properties with fiction gives shape to the notion that the fictional mind is composed of experiential narratives, especially in first-person narrators. Additionally, it allows us to account for gaps in the fictional world as moments of instability in fictional consciousness. In turn, those gaps gesture towards fictional subjectivity by laying bare instances where first-person narration is laced with intentionality, giving shape to the fictional self as a form of narrative. Narrative

discourse, when approached through a cognitivist lens, "asks new questions about the relationship between the biological and cultural, between the human body and its environment (Spolsky "Darwin and Derrida" 56). This chapter lays the groundwork for these discussions.

Integrating objective scientific methodologies into the study of consciousness may initially seem paradoxical. Consciousness is a subjective phenomenon which is private and impenetrable. The experience of consciousness, including qualia (raw sensory experience) and emotion, is notoriously difficult to express. Many philosophers have questioned a completely objective scientific approach to consciousness because it potentially devalues or is unable to account for such definitive subjectivity. At the same time, purely subjective (first-person) description is not sufficient to answering the questions posed by scholars of consciousness. Thus, "gathering the needed evidence about the structure of experience requires us both to become phenomenologically sophisticated self-observers and to complement our introspective results with many types of third-person data available to the external observer" (Van Gluick). There is a relevant convergence between narrative and cognitive structures which provides a link between first-person narration of subjective experience and the ability to observe and record phenomena. Some theorists argue that narrative is a central feature of consciousness. It is "the principal way in which our species organizes its understanding of time" (Abbott *Narrative* 3). Frederic Jameson also argues for the centrality of narrative, the "all informing process of narrative," is "the central function or instance of the human mind" (Jameson 13). This connection between narrative and thought makes fiction an excellent site for the application of scientific models of consciousness upon imaginative examples.

Throughout this chapter, there is an insistence on the importance of the body as a site of individual and cultural thought production. Both philosopher Daniel Dennett and neuroscientist Antonio Damasio offer a compelling foundation for consciousness as housed within and emerging from physical processes. According to Damasio, consciousness rolls out in stages from the "organization of mind contents centered on the organism that produces and motivates those contents" (Damasio 10). Deeply rooted in evolutionary biology, Damasio gives consciousness a historical trajectory by placing the mind on a continuum from life regulation to cultural production. The self is revealed in three stages: the body-mapping protoself, the action-based core self and the coordinating and creative autobiographical self (Damasio 24). The experience of consciousness, and by extension, the interpretation of fictional consciousness, can be read as composite processes occurring separately and potentially simultaneously. His methodology includes mapping the brain and correlating brain architectures and functional responses with the emotion and memory programs from which the self emerges.

Privileging the relationship between the body and the mind requires an additional emphasis on the roles that focus, perception, and sensory "clout" have in decoding and communicating phenomenal experience. Fictional minds are caught up in a constant process of narrativizing. Embedded narratives, with reference to the larger fictional whole, add texture and additional layers of potentiality and intentionality; the narratives of the self (internal) are deeply intertwined with the observable and recordable aspects of story and discourse (external). These embedded narratives are smaller maps within a larger one, reminiscent of Damasio's primary model of consciousness. Daniel Dennett's Multiple Drafts Model (MDM) which "treats the self as an emergent or virtual aspect of the coherent roughly serial narrative that is

constructed through the interactive play of contents in the system," underscores the embodiedness which is central to Damasio's framework (Van Gluick). By framing consciousness as a process of mind, the subjective aspects of consciousness, when applied to a closed fictional system, are demystified. As Dennett argues, "all varieties of perception – indeed all varieties of thought or mental activity – are accomplished in the brain by parallel, multitrack processes of interpretation and elaboration of sensory inputs" (*Consciousness Explained* 111).

The theoretical underpinning for Dennett's MDM is rooted in cognitive science. The central brain function of information processing is "it's acquisition (intake), internal representation in a mind..., storage and retrieval, and transformation, leading ultimately to some behavioral or symbolic output" (Margolin 71). In other words, phenomenal qualities of consciousness come into the body through sensory stimulation and the experience takes on a narrative form through the cognitive function of information processing. Input is processed and categorized within the image-mapping functions and somatic emotional response programmes of the brain. The result is consciousness, a mental phenomenon that is not merely about the body, but attached to the body. The bi-directional interaction between the brain and consciousness breaks down Western philosophical traditions of mind-body dualism. In contrast to a subjective, direct-witness perspective, I argue that consciousness and its functions comprise a composite biological process which indelibly implicates the corporeal.

Interpreting a character as containing a fictional mind means identifying the multiple layers on which that mind is functioning, be they internal, physical or social. Just as we are the protagonist of our own consciousness, when we read we are witnessing similar processes of identity creation, albeit highly constructed through narrative structure, syntax and style. Using

Damasio's framework, I identify three main access points for this discussion. The first is homeostasis, the process which maintains the "chemical parameters of a body's interior". For example, does the fictional mind indicate hunger, or pain from an injury? How do those indicators of physical discomfort affect the narrative? The second is the progression of self as it moves from the body as a discrete entity, to an organism in interaction with external objects, to conscious mind capable of memory, emotion and social interaction. How does the fictional mind identify and interact with objects and people outside of itself? If consciousness is constituted by a variety of underlying brain functions, how does the fictional mind's consciousness appear to change and which elements impact those changes? Finally, I look at the resonant feedback loop between the body, feelings (images), emotions and the self (Damasio 45). How do sensory experiences appear to manifest internally in terms of identity construction? Externally? How does the narrative draw them together and which experiences are privileged?

Studying consciousness, fictional or real, has become, and has arguably always been, a necessarily interdisciplinary endeavour. Because of the decentered, deeply discursive and multiple methodologies applied to the study of consciousness, its terminology is notoriously slippery; the same words hold different meanings and implications from one discipline to the next. To the general public, consciousness is used "quite unproblematically in everyday language to refer to inner experience or awareness" (Blackmore 7). This general starting point is useful. It situates consciousness as a private, subjective experience, in the midst of which is an autonomous individual who compiles experiential information into a self, a "me". Within this working definition of consciousness there are multiple variations in terms of scholarly

focus. Where philosophers are concerned with conceptual frames and modal logic, research from the scientific disciplines are more focused on "theoretical and empirical models of the brain mechanisms underlying consciousness" (Cavanna and Nani ix). Philosophers have long been fascinated with thought experiments to test the limits and make-up of consciousness, attempting to "unravel and disentangle the conceptual intricacies of consciousness" and construct coherent models (Cavanna and Nani ix). While the subjective, moving center of consciousness may initially seem at odds with an objective approach, the contemporary study of consciousness has much to gain from the insights of neuroscientists, psychologists and cognitive scientists. Before demonstrating the role of fiction in the study of consciousness, it is first necessary to understand its historical, critical context.

The first philosopher who gave shape to the modern conception of consciousness was Rene Descartes (1596-1650). Most famous for the words *cogito ergo sum* (I think therefore I am), Descartes developed a 'method of doubt', whereby he rejected anything that he could doubt. His philosophical experiments led him to conclude that the body is mechanical and is made up of a different substance than his thoughts. He called these two substances *res extensa*, the physical, measurable substance, and *res cogitans*, or thinking substance. This division between mind and body is one that remains hotly debated among scholars. After Descartes, each and every treatment of consciousness is forced to consider the question: what is consciousness made of? Generally speaking, two camps have emerged, though individual approaches are variable and range from more extreme to more neutral; monist theories hold that everything (including thought) is made up of one kind of material, where dualist theories argue that there are two (or more) materials.

While Cartesian dualism is central to understanding the subjective frame of consciousness, most scholars accept that it is no longer defensible as written. It ignores the indelible link between body and mind, between brain (mental architectures) and consciousness (mental states). Daniel Dennett famously wrote "accepting dualism is giving up" (*Consciousness Explained* 37). This is in large part due to the impact of psychological and scientific data which has permeated the conceptual realm of the study of consciousness. Research on the effects of brain damage on emotion and behaviours, mental illness, perception, emotional response and both individual and social models of behaviour, make it evident that the body and the mind at the very least interact with one another. The more we learn about the brain, the more we see correlations between mental activity, mental states and objects of interaction.

Bolstered by rapid advancement in neuroscience, the 1980s and 1990s were witness to a flurry of scholarship on the subject of consciousness. There remains a gulf between mind and brain, subjective and objective, inner and outer. Philosopher David Chalmers sees this gulf as filled with two types of problems, multiple "easy problems" and one "hard problem". Easy problems are "susceptible to be tackled with standard methods of cognitive science…accounted for in terms of computational or neural mechanisms" (Cavanna and Nani 3). Examples range from the ability to distinguish external stimuli to the difference between being asleep and being awake. The correlational nature of neuroscience, identifying areas of the brain and correlating them with mental states through objective experimentation, makes it well positioned to answer these "easy" problems. However, physical theories are not complete because they do not take into account the subjectivity of experiencing consciousness. Chalmers explains:

> "The trouble is that physical theories are best suited to explaining why systems have a certain physical structure and how they perform various functions. Most problems in science have this form; to explain life, for example, we need to describe how a physical system can reproduce, adapt and metabolize. But consciousness is a different sort of problem entirely, as it goes beyond the explanation of structure and function" (82).

By distinguishing between easy and hard, Chalmers is in no way attempting to trivialize scientific research into the brain. Rather, the distinction acts as a taxonomy of a holistic theory of consciousness; it must "be able to address and solve the hard problem" as well as the easy ones (Cavanna and Nani 4). The hard problem, for Chalmers, is "how physical processes in the brain give rise to subjective experience" (81). He calls attention to the "incommensurable gap between the detailed quantitative accounts" provided by scientists and the "qualitative aspects of our inner lives". For Chalmers, theories that only include materialist arguments, for example the combination and monitoring of various cognitive processes or the connection between language and emotional states, are not sufficient to explain the gap posed by the hard problem.

Chalmers does not deny that consciousness arises from the body. Rather, he is asking about why and how the link between the body and the physical process comes to be. Chalmers argues that neuroscience alone is not sufficient to explain the phenomenon of consciousness. Chalmers proposes a principle called the double-aspect theory of information, arguing that information has two fundamental characteristics, physical and phenomenal. Chalmers' model of phenomenal consciousness, contains a clear echo of Descartes mind-body divide. His conclusion is dualistic; "conscious mental events and physical processes are not the same

things" (Cavanna and Nani 5). At the same time, Chalmers does not replicate Descartes' conclusions in their totality. Where Descartes saw the mind and body as comprised of separate, distinct materials, Chalmers proposes that the characteristics of conscious experience, or qualia, "be considered a fundamental feature" of reality, on the same level as space-time, charge, and mass, "irreducible to anything more basic" (83).

Chalmers' conclusion is not without detractors. I mention Chalmers' philosophical approach to consciousness to illustrate a contemporary example of a dualist theory. However, the ways in which philosophy of consciousness converges with the study of fictional minds leads me to disagree with Chalmers' dualist deductions. Because fictional worlds rely on ontological homogeneity, as per possible-world theory, it follows that fictional thought and fictional bodies are also materially identical. As such, to understand fictional consciousness, I turn to monist philosopher Daniel Dennett who sees consciousness as an experience which implicates both the private (subjective) and public (extrinsic, relational) spheres. He calls his approach heterophenomenology, "a neutral path leading from objective physical science and its insistence on the third-person point of view, to a method of phenomenological description that can (in principle) do justice to the most private and ineffable subjective experiences, while never abandoning the methodological principles of science" (*Consciousness Explained* 72). A complete theory of consciousness, for Dennett, must include both a catalogue of observed behaviour and actions of a given subject, as well as a catalogue of "what it is like to be that subject – in the subject's own terms" (*Sweet Dreams* 38). However neutral this methodology may seem, Dennett is directly reacting to Chalmers' "hard problem":

> A neuroscientific theory of consciousness must be a theory of the Subject of
> consciousness, one that analyzes this imagined central Executive into component

parts none of which can be itself a proper Subject. The apparent properties of consciousness that make sense only as *features enjoyed by the Subject* must thus also be decomposed and distributed (emphasis in original, Dennett *Sweet Dreams* 157).

Consciousness is not an additional property of brain function but is rather resultant of it; "neuronal processes, patterns and mechanisms in the brain are not *accompanied by* conscious experience, but *are* themselves the very conscious experience" (Cavanna and Nani 4).

Approaching consciousness from a heterophenomenological perspective has implications for fictional minds. Sabine Coelsch-Foisner, in her discussion of poetics of mind, points out that viewing consciousness through a heterophenomenological lens radically reorients conscious experience as ontologically similar to fictional worlds. When a reader has direct access to the internal world of a character, "we *imaginatively* share another creature's mental world" which "invites the reader to attribute to [a character]…thinking, feeling, [and] experiencing" (Coelsch-Foisner 67). There is a marked shift from autonomous to narrative consciousness which, as Coelsch-Foisner argues, has an implication for poetic consciousness that can be extended more generally to fictional minds. I do not mean to argue that fictional minds are actually conscious. Rather, I wish to emphasize that when we view actual consciousness as a narrative, we can view representations of consciousness as exhibiting similar traits.

The subjective data available about fictional minds has long been a topic of literary criticism. As students of literature, we are interested in what characters are feeling and thinking and we use this information to understand and analyze the meaning in a given text. Phenomenological methods "[maintain] a constructive and sympathetic neutrality, in the hopes

of compiling a definitive description of the world according to its subjects" (Dennett *Consciousness Explained* 83). The challenge posed by a heterophenomenological approach is not in accessing mental events, but in dissecting the fictional consciousness using objective methodologies without attributing underlying, and often unconscious and invisible, physical processes which may or may not be evident textually. Heterophenomenology, because it requires the integration of both subjective, "world according to…" statements and objective methodologies which lay bare the physical processes of conscious experience, requires what Dennett calls the intentional stance:

> We must treat the noise emitter as an agent, indeed a rational agent, who harbors beliefs and desires and other mental states and exhibits intentionality or 'aboutness' and whose actions can be explained (or predicted) on the basis of the content of these states. Thus the noises to be interpreted as things the subject wanted to say, of propositions they meant to assert (*Consciousness Explained* 76)

Do fictional minds exhibit intentionality? "Intentionality," argues Coelsch-Foisner, "is first and foremost a mental or contextual, not a linguistic, category" (70). Novels, as speech acts, "refer us to a mind, a consciousness" which is exhibiting intentionality (Coelsch-Foisner 70). I would like to propose that attributing fictional minds to characters in fictional narratives means reading with an intentional stance. Intentionality is a property that fictional minds share with actual consciousness. We use story-telling to project "the story we tell others – and ourselves – about who we are" (Dennett *Consciousness Explained* 418). Because consciousness is "gappy," it only finds stability when it is cemented into what Sabine calls a "narrative selfhood", or as Dennett calls it, a "centre of narrative gravity" (*Consciousness Explained* 71):

> A self…is not any old mathematical point, but an abstraction defined by the myriads of attributions and interpretations (including self-attributions and self-interpretations) that have composed the biography of the living body whose Center of Narrative Gravity it is" (*Consciousness Explained* 426-7)

Heterophenomenological self-awareness means perceiving consciousness as a narrative, in which is embedded not just in actions but also in the intentionality which accompanies those actions.

Similarly, fiction invites us to attribute subjectivity into the narrative stream. In fact, fictional minds are more accessible than our own consciousness because it is concretized in a more static way. In *The Invention of Morel*, for example, we are able to look at the ways in which the story is transmitted, and how the perspectival paradigm cognitively frames the story's mediation. But we can also attempt to take a heterophenomenological approach and attempt to capture some of the automatic process which lie beneath the surface of consciousness while examining the story as a narrative of selfhood. For Dennett, "the subject's heterophenomenological world will be a stable, intersubjectively confirmable posit, having the same metaphysical status" as fictional world (*Consciousness Explained* 81). "The self in fiction" echoes Coelsch-Foisner, "is as fictional (or constructed) as the self outside the fiction" (69).

This structure has implications for fictional minds in that it creates a scaffolding upon which correlations can be made between real and fictional cognitive architectures and processes. Rather than seeing the events and actions in a story as *accompanied by* mental activity or seeing a cognitive dimension running parallel to narrative discourse, I interpret fictional mental activity as a result of the ongoing relationship between the fictional mind and

its fictional world. In this way, identifying instances of cognitive functionality, and correlating mental processing with elements of a given narrative, points towards a larger interconnectedness between character subjectivity and the perspective and elements style through which a story is conveyed.   A first-person narrator is not simply observing and reporting, s/he is also experiencing. His/her subjective experience of the world cognitively frames, as per Fludernik's cognitivist paradigm of natural narratology, narrative transmission. The narrator that observes is not separate from the character who is experiencing. Rather than conceiving of an "I" who sits inside the brain who watches the narrative experience as separate from the "I" who navigates the story world with observable behaviour, that "I" can be "subdivided and allocated in time and space to specialized brain modular agencies" (Cavanna and Nani 26).   This is a functionalist approach.   The rest of this chapter looks at two complementary models of consciousness which provide a functional foundation on which to buttress literary interpretation. At this point, this exercise is largely concerned with pointing out instances of the cognitive processes which contribute to subjective experience as they are made available within the fictional world.   In Chapter 6, I argue that the mental states, behaviours and expressed states of belief and desire made possible through functionalist correlation take on story-like constructs from which the fictional mind emerges. For now, I turn to Dennett's Multiple Draft Model (MDM) and Antonio Damasio's theory of the "conscious mind" to provide a roadmap to identifying some of the patterns that fictional consciousness portray.

Real brains contain a "massive parallel architecture, in which multiple (and often rival) processes and streams of informational contents take place both simultaneously and

asynchronously" (Cavanna and Nani 27). Consciousness is not passive and our experiences do not come to us pre-made, but are constantly in the process of happening to us. Our brains do not receive a single stream of experience. Experience comes from and is processed simultaneously among multiple, parallel brain structures and programs. This is the backbone of Dennett's Multiple Drafts Model, which he has refined to include a central "fame" or "cerebral celebrity" metaphor. If we have multiple rival brain processes, then we can see them as various drafts competing for dominance. The result: the processes with the most fame or "clout" are those that we consciously experience. Conscious experience, in this way, is reflexively incomplete, allowing for fluid adaptation to changes in environment, information and perspective. The image of consciousness as an endless stream of revisions is an attractive one, but the more relevant trait of the MDM for this thesis is the gesture to unconscious cognitive processes and the role that they play in shaping the story of conscious experience. In the words of Blakey Vermeule, "our reason gives us an account of why we act as we do, but the story it tells us is usually just that – a story" (470).

Sigmund Freud (1856-1939) and his notion of the unconscious drew attention to how much our conscious minds do not have direct access to. Freud's conception of the unconscious is active and psychodynamic; the unconscious is a place for information processing and "our conscious experiences depend upon unconscious processing" (Blackmore 15). Freudian models of the interaction between the conscious mind and the unconscious mind laid the groundwork for viewing consciousness as an incomplete experience, susceptible to sensory illusion and trickery. Not all of what we think of as a subjective "me" is experienced during 'online' consciousness; there is another, less inhibited form of thought which also has a role in the organization and processing of the conscious mind. Modern cognitive approaches

(cognitive science, linguistics, and critical theory) echo Freud's insistence on the presence and impact of unconscious (invisible, unavailable) mental processing. Rather than the content being repressed, the processing is unconscious because "too much is going on too quickly for us to be conscious of it" (Crane 19). This is the "new" unconscious, made up of "a wide array of automatic processes and activities and which we are not and cannot become consciously aware" (Vermeule 468).

What are the traits of the "new" unconscious and why is it an important component of the cognitive hermeneutic? As discussed above, "consciousness confabulates" (Vermeule 471). It is a representation of *the* story which we consciously experience. The new unconscious, on the other hand, is "non-representational" and has little actual contact with consciousness (Vermeule 465). This can be seen in contrast to the Freudian model of the unconscious which is teeming with symbols, ready to be read and steeped in meaning. Vermeule argues that "we must abandon our notions of a literate, speaking unconscious" to an unconscious that is silent with "no ready-made phenomenology, no language in which to unfold its tales" (471)[11]. If we cannot see the unconscious directly (or often indirectly), then "the way to catch it," offers Vermeule, "is slant, by noticing how consciousness makes patterns and try to figure out what motivates those patterns" (471). One such slant is by noticing not only the patterns of consciousness, but also the gaps and inconsistencies therein. Cognitive literary scholars, like Vermeule and Spolsky, look to neuroscientists and psychologists and their work on things like emotional modularity systems and logical biases (e.g. the hindsight bias, "I knew it all along") as potential

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[11] This is not to say that this step towards an unconscious without language will not evince meaningful connections between language and neural activity. For example, Ralph Savarese's take on the relationship between figurative language and neural substrates in his article "What Some Autistics Can Teach Us About Poetry: A Neurocosmopolitan Approach." He emphasizes "not just an openness to neurological difference but, rather, a denaturalization, even a dethronement of privileged neurotypicality" (394).

ways of reading the unconscious. For the rest of this chapter, I propose that another potential entrance point into the "new" unconscious is automaticity, or the extent to of the "control of one's psychological processes by external stimuli and events in one's immediate environment" (Vermeule 477). In particular, I look at Antonio Damasio's discussion of the processes which culminate in the creation of a self and some of the ways these multiple, parallel processes are both visible and inaccessible. In *The Invention of Morel*, the narrator exhibits many context dependant traits over which he has little to no control. He is helpless in the face of overwhelming nature and the mystery of the images. The story which emerges is his narrative consciousness overlaying (and often rewriting) the events as they unfold.

Neurobiologist Antonio Damasio offers a larger-scale model of the brain which looks at the brain as a holistic system of processes resulting in consciousness. Where Dennett's MDM offers a theory as to how experience is structured and understood, Damasio illustrates the centrality of the body and its physical processes to subjective experience. The model of the "conscious mind" proposed by Damasio is an integrated approach which constructs the physical brain in tandem with "an imagined view of the brain caught in the state of containing a conscious mind" (Damasio 17). He views the brain, and by extension the body, as the starting point for understanding consciousness as a composite process shaped by a brain architecture which produces multiple, parallel cognitive functions. Through Damasio's discussion of the neurobiology of consciousness, he lays out correlations between brain structures and the emergence of a "self". The conscious mind is a mind which arises "when a self process is added" into the mix of basic cognition (Damasio 8). While a mind still exists, it is not until that mind is subjectively known that it becomes conscious, and subsequently, is able to interact

on multiple levels with its environment.

The brain is the organ at the center of our nervous system, and is also the conduit between our bodily experiences and the emergence of consciousness. Consciousness, for Damasio, is "a state of mind in which there is knowledge of one's own existence and of the existence of surroundings" (167). In this definition, consciousness is not merely wakefulness. It includes knowledge of the self as separate from the nonself, the self being a process which is present at all times when we are conscious. But how does a self-process emerge from the brain? "How does a brain do mind," and by extension, a conscious mind containing subjective perception? (Damasio 5) "Minds," writes Damasio, "emerge when the activity of small circuits is organized across large networks so as to compose momentary patterns" (19). This is an echo of MDM, viewing the brain as an overarching architecture composed of multiple, parallel processes. Our brain is constantly engaged in functionally mapping the world around us at the same time as it maps itself. These representational patterns, or maps, "are experienced as images in our minds… not just to the visual…but to images of any sense origin such as auditory, visceral, tactile, and so forth" (Damasio 19). An image is a synonym of a mental pattern where a map is a pattern of activity in the brain. Our brain architecture is a "critical body-mapping and image-making" structure in which sensory data is input and processed, sometimes resulting in a behaviour or change in mental state (Damasio 22).

Maps are constructed when we interact with objects, either directly or through memory recall. Memories, for Damasio, are objects which are grouped and mapped along with the interactive elements of the physical surround. "The human brain," writes Damasio "maps whatever object sits outside it, whatever action occurs outside it, and all the relationships that objects and actions assume in time and space, relative to each other and to the mother ship"

(68). If the MDM challenges us to decentralize conscious experience into multiple, rival streams of brain processes, then Damasio challenges us to think about the way that those multiple streams come together into a self. For both Dennett and Damasio, the self is expressed through narrative structures. To use the words of Alan Palmer, "we make stories of our lives," a process which is related to memorial recall and also reflects how narrative shapes our understanding of phenomenal experience (*Fictional Minds* 185). The brain takes on the role of cartographer, constantly monitoring the body, its interaction, processing input, and adapting to its environment. Consciousness, in turn, "allows us to experience maps as images, to manipulate those images, and to apply reasoning to them" (Damasio 67).

The cognitive mapping which is central to information processing in real minds is a process which extends to the interpretation and understanding of text. Cognitive mapping, in regards to the literary text "denote[s] a global mental representation…that involves not just spatial relations, but any type of meaning and formal organization" (Ryan "Cognitive Maps" 215). Lakoff suggests that all thought is fundamentally imaginative, employing metaphor, metonymy and mental imagery "which go beyond literal mirroring or representation of external reality" to conceptualize and communicate reality (Crane 17). Understanding and producing abstract thought relies on the "kinesthetic and spatial experiences of embodiment" (Crane 17). Mary Thomas Crane summarizes this succinctly, noting that thought itself cannot be conceptualized without "concrete spatial metaphors":

> We imagine our mind as a space within which ideas are created and housed; we imagine it as a conduit through which ideas are conveyed to other people; we imagine ideas as buildings that are constructed, we imagine ideas as people, plants, products, and commodities; we imagine understanding as seeing or grasping (17).

A fictional mind can only be composed from an aspectual point of view, accessed semiotically and constructed by the reader. Our brain architecture "impose[s] a basic uniformity on fictional worlds that is necessary in order for us to be able to access them" (Palmer *Fictional Minds* 203). Map creation is central to narrative comprehension on several, simultaneous levels, including various spatial, temporal, social, and cultural dimensions of conscious experience. Spatiotemporal mapping is particularly important to textual navigation, because it allows the reader to understand character movements and creates a plausible, fact driven background environment "for the understanding of plot, character motivations, and the moral issues articulated in the text" (Ryan "Cognitive Maps" 216). Additionally, in line with the principle of minimum departure, mapping and categorizing entities depend both on practical use and on the reader's expectations. Think of a murder weapon in a detective novel. It functions both as a pragmatic plot device as well as a spatially oriented object that must fit spatially and conceptually within the context of the fictional world. Understanding world navigation as a mapping process gives texture to the argument that the cognitive processes on which narrative comprehension relies "relate to human embodiedness in a natural environment and are essentially motivated by metaphors of embodiment" (Fludernik *'Natural' Narratology* 13). Spatial metaphors transcend world navigation to become signifiers of more complex patterns of images and representations of fictional thought.

At any given moment, several maps are simultaneously competing for experiential clout, or to be acknowledged. In literature, this manifests as multiple levels of possible interpretation. This can be identified, as I will explain later in this chapter, when normally unconscious processes are brought to the forefront of conscious experience. The narrator's interaction with Morel's invention, the machinery which fuels the illusions which surround him, shows the

importance of spatiotemporal construction to understanding the character's mental and physical navigation of the fictional world. The comprehensive detail provided about the structure of the machines, and the narrator's ineptitude at understanding their structures and functions, becomes a metaphoric extension of the narrator's interaction with the image-people and their actions. At first, the motors are an escape from the harshness of his own solitude. He upon the invention with "ecstatic, prolonged amazement" and he "worked with a kind of frenzy" to gain entrance to the room in which they are housed (Bioy 17). The machine is in the basement acting as the literal foundation for the museum. By metaphoric extension (and titular emphasis), Morel's invention is also the central mystery to be unravelled on the island. In discovering the inner chamber of the machine, the narrator "forgot the horrible, nightmarish existence [he] was leading" (Bioy 18). As he moves through the chamber, the sound of his own steps surround him with cacophonous echoes and he sees "the same room duplicated eight times in eight directions as if it were reflected in mirrors" (Bioy 17). To make the extraordinary surrounding more understandable, he likens it to "the way a snowstorm on the cold highlands of my Venezuela deadens all the noises within earshot" (Bioy 18). This perfect, symmetrical construction "tries one's mental equilibrium" (Bioy 19). The "diligent swarm of echoes" which accompanies the narrator's steps exacerbates a silence "as horrible as that heavy weight that keeps you from running away in dreams" (Bioy 19). The spatial reality of this moment treads the fine line between dreaming and waking. The narrator is extremely disoriented but he is able to escape from the chamber. His return to the world above, "the lonely sound of the sea, the quiet movement of centipedes," brings the narrator back to his original fears of discovery by the police and reimprisonment (Bioy 19).

As the novel continues, the narrator connects the appearance and subsequent disappearance of the other islanders to the machines. In so doing, they become, to the narrator, the source of Faustine to whom he has given his heart, another image which shares a metonymic axis with the machines. When the image-people suddenly disappear, he justifies his descent into the basement to try to understand and fix the machinery within. The silent motors "looked enormous in the shadows" (Bioy 43). The room and its contents, formerly described as brilliant and awe-inspiring, take on the qualities of the narrator's depression at having lost his access to Faustine. The narrator says "the effort needed to kill myself was superfluous now, because with Faustine gone not even the anachronous satisfaction of death remained" (Bioy 43). It is not until the end of the novel, when the narrator is trapped in the machine room, that he is forced to face the future by understanding and conquering the machines. "These walls" writes the narrator after an emotional recollection of the horror he felt upon realizing his imprisonment, "like Faustine, Morel, the fish in the aquarium, one of the suns and one of the moons… – are projections of the machines" (Bioy 89). The narrator is trapped not only in this room, or even on this island, but he is trapped more generally by the ways in which he has allowed Faustine, Morel, and the other subjects of his investigations, to control his every waking moment. In order to make his own decision about the future, he must free himself from captivity. The narrator's escape from the machine room is aligned with his personal moment of revelation. Now that he fully understands the machines, and through them, the rest of the events on the island, he can transcend the role of spectator and become and actor in Morel's version of immortality. The machine "ceased to be a meaningless conglomeration of iron and steel; they had forms and arrangements that permitted [the narrator] to understand their purpose" (Bioy 91). Immediately following this passage, the narrator explains those details of the cosmology

of the island that he had not yet been able to account for. Once he has given his rational explanation of the island, he decides to die, his "death becom[ing] the condition and the pawn for [his] eternal contemplation of Faustine" (Bioy 100).

The spatial orientation made possible by cognitive mapping is an important tool which allows the reader to understand and reconstruct the fictional world. This also contributes to the reader's understanding of character behaviour. Alan Palmer argues that when we read, we are able to make sense of characters through the use of a continuing-consciousness frame. This frame allows the reader to "create a continuing consciousness out of the isolated passages of text that relate to a particular character" (*Fictional Minds* 15). The reader compiles snippets of information from a variety of aspectual perspectives, including both physical and mental events, into a larger understanding of that character. All cognitive mapping, whether a fictional representation or a brain process which facilitates textual interpretation, is charted in relation to a central organism. However, as Dennett reminds us with his MDM, there is not one "master map", but rather several, parallel maps, both conscious and unconscious, which allow for navigation and delineation between the self and environment. Constructing a fictional mind, then, starts by laying bare some of the processes from which consciousness emerges.

The information which populates our cognitive maps comes simultaneously from multiple sources. It begins "with the mapping of the body inside which the brain sits" (Damasio 68).   These are called interoceptive maps, largely concerned with monitoring our internal milieu. Proprioceptive maps, on the other hand, have a grouping function which gives us a better idea of where our body is situated. They focus on the relative position of one part of the body to another, for example, our grouping together of multiple body components (joints, musculature, cartilage, organs, etc.) to make up a specific body part (the knee, viscera). The

relationship between the body and the brain is dynamically fluctuating and reciprocally influential based on these internal maps, but they are also influenced by the world outside the body. Exteroceptive maps are concerned with the world external to the self, for example, any sensory organ which records external stimuli. From these maps, we see the brain actively mapping the body while simultaneously mapping the environment in relation to the body. The body is mapped, and it is also the gatekeeper for making sense of the world outside itself; "the representation of the world external to the body can come into the brain only via the body itself…the mind learns of the outside world via the brain, but…the brain can only be informed via the body" (Damasio 97). The fluid (and largely unconscious) mental process of cognitive mapping connects the body, brain processes and conscious experience through a constant feedback loop which constantly receives, signals, and updates based on changes in environment. These processes, for Damasio, are not separate from consciousness, but are themselves what the experience of consciousness is made of.

Varieties of Maps (images)	Source Objects
I. Interoceptive Maps – Maps of the organism's internal structure and state	The functional condition of body tissues such as the degree of contraction/distension of smooth musculature; parameters of homeostatic range
II. Proprioceptive Maps – Maps of other aspects of the organism	Images of specific body components such as joints, striated musculature, and viscera
III. Exteroceptive Maps – Maps of the world external to the organism	Any object or event that engages a sensory probe such as the retina, the cochlea, or the mechano-receptors of the skin.

Fig 3. Varieties of maps (images) and their source objects (adapted from Damasio 80)

Cognitive mapping is an essential process in the emergence of the self. The stages of mapping, from organism to object, find parallels in our evolutionary history. As information processing in the brain improved, and our mapping functions became more varied and sophisticated, the "self-as-object" gave rise to "self-as-knower". Because it is concerned solely

on the "material-me", delineating the organism from the objects in its environment, the self-as-object can be straightforwardly defined as "a dynamic collection of integrated neural processes, centered on the representation of the living body, that finds expression in a dynamic collection of integrated mental processes" (Damasio 10). As we are constantly caught in an ontological state of becoming, the "self-as-knower" is a less static, definable state. The self-as-object and the self-as-knower are not discrete but rather "there is rather a continuity and progression" between the two (Damasio 10). The progression from object to knower is supported by Damasio's discussion of species evolution. He places conceptual evolution alongside the evolution of the brain from its role as the control centre of our nervous system to a container for a "protagonist capable of bearing witness" to the subjective experience of life events (18). Consciousness is constructed by the brain by "generating a self process", the essence of which is "a focusing of the mind on the material organism that it inhabits" (Damasio 190).

The larger conceptual trajectory of the self from object to knower can be broken down into a sequence of three stages – "mind, conscious mind, and conscious mind capable of producing culture" (Damasio 193). Damasio calls the first stage the protoself, the self which maps and monitors the body's physical structure in space and time. The protoself maps body's interoceptive signals, like viscera and homeostasis. It also maps the schema of your entire body, an imagistic map the exterior of your body (size, range of motion, etc.). Finally, the protoself maps our sensory portals, our sight, taste, touch, hearing and smell. This range of bio-mapping results in *primordial feelings*, the feelings of the immediate state of the body. Primordial feelings "obligate brain-body interaction"; they are *felt* body states, like the experience of pleasure or pain, and as such they have a privileged and direct relationship to the body (Damasio 191). In short, the protoself is "the part of the brain that stands for the organism

and consists of a gathering of images that describe relatively stable aspects of the body and generate spontaneous feelings of the living body (primordial feelings)" (Damasio 191).

From the protoself emerges the second stage of self, the action driven core self. The core self is concerned with the interaction between object and organism. First, a sequence of images referring to a specific object (or grouping of objects) engages with the protoself. This can take the form of simple coordination between object and organism, but it also changes the relationship between the object and the organism. The core self must "connect with the events that it is involved in. Within the narrative of the moment, it must *protagonize*" (Damasio 215). If the protoself defines the object as separate from the organism, then the core self is the salient process of engaging with the object. These engagements result in pulses of core self which can be explained as a cycle: "an object engaged the body when that object was looked at, touched, or heard, from a specific perspective; the engagement caused the body to change; the presence of the object was felt; the object was made salient" (Damasio 215). The core self maintains wakefulness, regulates object-self interaction and confers levels of salience upon those objects. As a transitory stage constantly in a state of action, the core self draws from the images produced by the protoself to function as a central mechanism for the final stage of self, the autobiographical self. It is not until these pulses, "their factual composition and the emotional accompaniment", are coordinated by the autobiographical self that consciousness fully emerges (Damasio 224).

The first stage, the protoself, constitutes the self-as-object, but the core self shows a shift in consciousness to the self-as knower, a shift enabled by our ability to map ourselves and our environment. By the core self stage, the several images from more than one cognitive map interact within the mind: those that describe the object and those that describe the "me" as a

discreet organism who feels and interacts with the "not-me". The "me" images are highly variable depending on four different image descriptions: (1) perspective, or standpoint, (2) feeling of ownership, (3) agency relative to my actions and to objects and (4) engagement with primordial feelings (Damasio 198). These four variances come together to form a very primitive self which is the stepping stone to the final layer of self, the autobiographical self. In other words, when "the brain introduces a knower into the mind, subjectivity follows" (Damasio 11).

The autobiographical self is the final stage, where personal memories of our life experiences coalesce into a holistic subjectivity defined by "biographical knowledge pertaining to the past as well as the anticipated future" (Damasio 24). This level of consciousness incorporates a social dimension and as such, is the building block of sociocultural production. The complexity of the autobiographical self springs from the overwhelming amount of experiential material available within our memory banks to pull from. Memories, on top of their changeability, gain primacy or become less significant based on the moment in which the self is operating. The autobiographical self is the master of multi-system coordination; it is first and foremost an organizer. First, the core self groups sets of memories into a pulse which is experienced in the brain as an image. Then, the autobiographical self begins its coordination: "(1) certain contents are evoked from memory and displayed as images; (2) the images are allowed to interact in an orderly manner with another system elsewhere in the brain, namely, the protoself; and (3) the results of the interaction are held coherently" (Damasio 226). The autobiographical self is a coordinating mechanism which draws on the combined experiences of self/nonself interactions in order to make sense of a biographical past and give our minds predictive capability. This autobiographical self surrounds the core self and the result is a

conscious mind supported by the capabilities of "memory, reasoning and language", capabilities which "engender the instruments of culture" (Damasio 28).

First Stage: the protoself

The protoself is a neural description of relatively stable aspects of the organism

The main product of the protoself is spontaneous feelings of the living body

Second stage: the core self

A pulse of core self is generated when the protoself is modified by an interaction between the organism and an object and when, as a result, the images of the object are also modified

The modified images of object and organism are momentarily linked in a coherent pattern

The relation between organism and object is described in a narrative sequence of images, some of which are feelings

Third stage: the autobiographical self

The autobiographical self occurs when objects in one's biography generate pulses of core self that are subsequently, momentarily linked in a large-scale coherent pattern
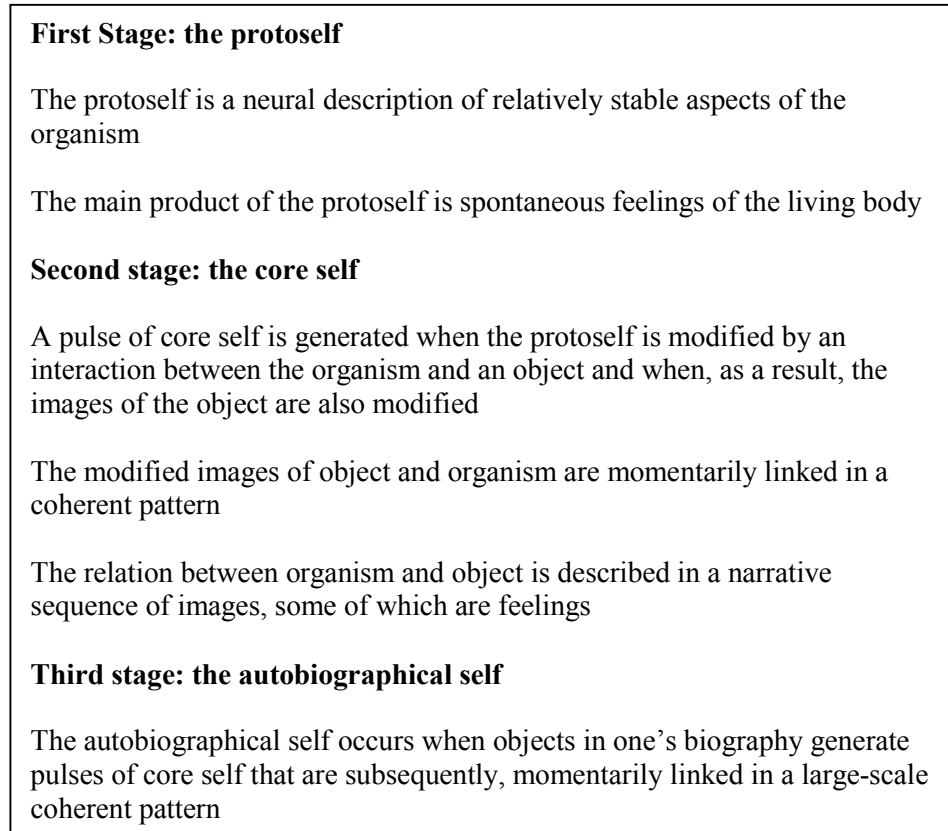
Fig 4 – Three Stages of Self (Damasio 192)

This framework uses neurobiology and evolutionary biology to situate consciousness as "an indispensable working component of the living system's manner of functioning" (Torey 7). At this point, the implication for fictional minds is largely illustrative, identifying the presence of underlying mental processes which support conscious thought. The result has a more far-reaching implication. The internal and external narratives which make up any given character can be read in tandem with descriptions of the body; the body itself becomes text which enhances our understanding of both the fictional world and the embedded narratives which construct the fictional mind. Damasio expands mapped objects to include the body, the environment and memories. Reading a character as a fictional mind means reading these

components as patterns of images which constitute character, which the reader is able to make sense of through their continuing consciousness frame. Mental events and descriptions of the body coalesce, as I discuss in the next section, into embedded narratives.

Two aspects of Damasio's argument can function as literary access points. First, we can identify the multiple layers of "self" (proto, core and autobiographical) by illuminating the narrator's cognitive mapping processes, showing how they manifest as competing, overlapping narratives. Second, we can identify and track the relationship between sensory information processing and emotional programs. More specifically, there is a delineation between emotions and feelings. In *The Invention of Morel*, the result is a story world that is referential only to the narrator's body. Information is transmitted through a first-person perspective, so the elements of consciousness often converge with narrative discourse in a way that requires substantial unpacking. Ultimately, I wish to paint a picture of the narrator's fictional mind as the meeting point for multiple parallel systems and functions which are competing for dominance in the "final draft" of the experience. The narrative itself is a crystallization of these underlying processes.

Homeostasis, as well as spatial and temporal orientation, are indicative of the protoself. The narrator of *The Invention of Morel* exhibits the protoself through the ways in which he maps his body, on all three levels of mapping (interoceptive, proprioceptive, exteroceptive). Because of the solitude of the novel, and by nature of the narrative taking the shape of a journal, the narrator often draws attention to the extreme physical duress that his body is under. There is a direct relationship between mapping and narrative transmission. The narrator constantly reminds the reader of his physical hardship: "I was sick, in pain, feverish, for a long time; very

busy trying not to die of hunger" (21), "my fatigue almost sickens me" (31), "I think I must be in hell…I am not feeling well…because of something I ate" (54), "fatigue overcomes me and then the water is already there, silently forcing its way into my respiratory passages" (77). The narrator makes visual the effects overwhelming heat generated by two suns and endless mosquitos have on his body. This indicates that his conscious experience is constantly coloured by pain and discomfort.

Homeostatic monitoring is a process which travels the void between the conscious and unconscious. The life regulations processes which maintain our homeostatic range, or "the chemical parameters of a body's interior" occur mostly in the background (Damasio 45). It is only when we deviate from those parameters that we feel discomfort. Disruptions to homeostasis means that "the ironclad rules of life regulation are being disobeyed" and our body is "requesting us to find a reasonable solution for a situation that can no longer be managed by automatic nonconscious devices" (Damasio 45). The narrator's constant reference to the dishevelled state of his own body in this way shows that his homeostatic range has been compromised to the point where he it is recorded in the ledger of his conscious experience. Interpretation of the veracity of the narrator's statements must take into account an evaluation of physical wellness based on cues from the text. Additionally, changes in homeostasis have an impact on the interpretation of the narrator's emotional states, their intensity, duration and changeability linked to the status of the body.

The mapping of the body is complemented by the mapping of the world external to the organism through sensory organs. In this short passage, the narrator describes his experience of hiding from the other people on the island during a violent thunderstorm. He is terrified, hiding under an altar and attempting to glean opportunities for escape. We see the beginnings

of the core self, where he is not only aware of the spatial difference between himself and objects outside of himself, but his interaction with them changes the image of the object and the image of himself. I have emphasized the importance of exteroceptive mapping to the narrator's navigation of the fictional world by emphasizing the sensory cues:

> Even after they had gone I kept on crouching there uncomfortably, frozen, *peering* cautiously between the silk curtains beneath the main altar, concentrating on the *sounds* of the storm, *watching* the dark mountains of the anthills, the undulant paths of large, pale ants, the agitation on the tile floor. I *listened* to the rain pelting against the walls and the roof, the water stirring in the eaves, the rain pouring on the path outside, the thunder. I could *hear* the confused sounds of the storm…I *strained my ears* to isolate the steps or the voices of someone who might be approaching my hiding place (Bioy 24).

The stillness of this moment is deceptive. While the narrator is "frozen" in space, his experience of the moment is comprised of the multiple sensory programs which monitor the situation. Much of the text is comprised of this kind of voyeurism, recording the actions of others in relation to his own body in space and time. He juggles his focus between the state of his own body, including his emotional and physical state, and the actions of Morel's group. His mapping certainly includes a social dimension, but the physical and cognitive processes which lie underneath the surface of his conscious experience and his commentary colour the experience of the moment. When approaching the novel more holistically, core-self pulses are also evident in the action based narrative which lies underneath the predictive statements about the future. He compiles information about his body state (fatigue, sickness), his emotional state

(nervous) and the environment around him. Core self pulses result in an "urge to write" to "perhaps provide an answer" or "help produce the right future" (Bioy 31-32).

Finally, the autobiographical self coordinates the images which result from the patterns of images identified by the core self with memories, to complete an overarching pattern which constitutes the fictional mind. Some of this coordination occurs in the reader's reconstruction of the fictional mind from the verbal utterances available in the text. For example, while it is never explicitly stated, the reader is able to piece together that the narrator was a political criminal wrongfully (in his mind) accused for treason and sentenced to jail. He states that he "was accused of duplicity" and "condemned…unjustly" (Bioy 12). The narrator describes his jailbreak, and his journey to the island, a near-death experience: "I lost my bearings; I had no hat and I was ill, haunted by hallucinations" (Bioy 13). These elements of memorial recall are crucial to the reader's composition of the narrator as a continuing consciousness as they help to contextualize the narrator's obsessively cautious voyeuristic tendencies and his continuous fear of returning to Jail. But these aspects of the narrative are also a part of the coherent behavioural patterns compiled by the autobiographical self, the information processing overseer and the author of conscious experience. For example, the narrator recalls a time before meeting Faustine and determines that a future without her is an impossibility. He writes "everything I do now is leading me to one of three possible futures: to the woman, to solitude (or the living death in which I spent the past few years, an impossibility now that I have seen the woman, or to a horrible sentence" (Bioy 31-32). The autobiographical self brings this short narrative of prediction together into a single stream of thought resultant from the processes of a single mind. The autobiographical self is the shape and texture of the passage which points to the author of the experience, the narrator. Rather than evaluating the narrator's speech here as a direct

thought report, we see it as straddling multiple sources of information which are coordinated by the autobiographical self into a coherent relation of mental states and actions.

The second relevant convergence between Damasio's neurobiological model and the fictional mind is the relationship between experiential framing and emotional states. In Damasio's model, mental images, including memories and emotional states, are preceded by the brain. While "some neural patterns are simultaneously mental images," (like primordial feelings) other neural patterns require subjectivity in order for them to be privately known (like more complex emotional states) (Damasio 16). What Damasio points to here is that cognitive mapping, while fundamental to the emergence of the self, is a largely unconscious, or "offline," process. Only when there is a disruption that threatens survival (as is the case in *The Invention of Morel*) does it come to the forefront of consciousness. This gestures to the "gappiness" consciousness. Narrative gaps are "openings that at the same time do and do not contain story material" (Abbott "Shadow Stories" 104). Filling in the gaps is an active part of the narrative, and their interpretation is highly dependent on context. This becomes more evident when attempting to interpret emotional states under the larger structure of the fictional mind.

Damasio argues that emotions and feelings, though generally used interchangeably, are different in their relation to cognitive function. "Emotions," for Damasio, "are complex, largely automated programs of actions concocted by evolution" (116). Feelings, on the other hand, are "composite perceptions of what happens in our body and mind when we are emoting" (Damasio 117). Emotions are the physical process, where feelings are the image that is mapped, recalled and shaped into experience. A good example from *The Invention of Morel* is when the narrator expresses his nervousness. He is, understandably, in a constant state of anxiety and the emotional response occurs in both his mind and his body. When he writes "my fatigue almost

sickens me…. It must be my nerves that make me feel this urge to write", his viscera are engaged, indicating a bodily response attached to his "nerves" and also reflective of his overall fatigue. But he also speaks of his nervousness as integral to his current state of interaction when he says "perhaps it is my nerves that give me this urge to write". The nerves which he perceives and personifies are the feeling of nervousness, "the images of the action rather than the actions themselves" (Damasio 117). Here his "nerves", which I interpret as fear, implicate the body in a way that a more complex emotion, like, for example, the jealousy he feels towards Morel. Jealousy is a social emotion as it is a phenomenon which requires a social setting. Social emotions, like primordial feelings, "require an emotionally competent stimulus…depend on specific triggering sites" and are "perceived by the subject in the form of feelings" (Damasio 133). But primordial feelings enjoy a more direct relationship with the corresponding emotional program than social emotions do. Primordial feelings "provide a direct experience of one's own living body, wordless, unadorned, and connected to nothing but sheer existence" (Damasio 22). The difference becomes important when we conceive of the fictional mind as a social mind (Chapter 6). Attribution of mental states is often based on physical indications of emotional response, whereas the feeling of an emotion is something that is enmeshed with the description of a given situation.

In conclusion, if we approach consciousness itself as a representation of experience which takes a narrative form, it shares its metaphysical status, in Dennett's approach to consciousness, with fictional minds. By identifying and defining several components of consciousness as they appear in text, we can better understand how the properties the fictional mind. Narrative discourse is linked to a fictional consciousness when view through an intentional stance. Fictional consciousness is also a narrative of selfhood, a narrative that is incomplete. Its gaps

point to unconscious processing, like homeostasis and the cognitive mapping, which smoulders under the surface of the experiential narrative. However, this perspective does not "relieve us of our responsibility to understand how conflicts produced by our inherited human brains are modulated and managed within their cultural contexts" (Spolsky "Darwin and Derrida" 47). Cognitive studies and cultural studies are non-contradictory and force each other to be gradient and unstable. As Ellen Spolsky reminds us, evolutionary arguments prove that representational systems are necessary as we need reliable information about our world in order to adapt and survive. Deconstructionist arguments prove that those systems are not watertight, they are unstable, just "good enough" for day to day living (Spolsky "Darwin and Derrida" 52).

Cognitive narratologists remind us that textual worlds are mediated by actual minds which frame interpretations of the structural components of narrative. This dialogic process between authored text and reader is the continuing-consciousness frame "the means by which we are able to construct fictional minds" (Palmer *Fictional Minds* 183). In the next section, I argue that embedded narrative "is the result of that construction" (Palmer *Fictional Minds* 183). Embedded narratives are comprised of many concurrent mental activities, providing, whether through thought report or internal monologue, "a complete picture of an aspectual, subjectively experienced storyworld" (Palmer *Fictional Minds* 184).

Chapter 5: Embedded Narratives

Marie Laure-Ryan points out that there is element of tellability, "the aesthetic potential of a story outline," which depends upon with the performance, presentation and potential realization of the narrative (Ryan *Possible Worlds* 148). In the case of *The Invention of Morel*,

the narrator is the performer, the link between the reader and the story world, as well as being the subject of the story, the experiencer. He takes on a dual role of observer (reporter) and experiencer (recorder). I suggest that the fictional mind is a site where story, discourse and presentation converge as it suggests a link between fictional thought and fictional action if we note and analyze both physical and mental events, "characters' reasons for action as well as the actions themselves" (Palmer *Fictional Minds* 76). To follow the advice of Frederic Jameson, I focus on the space where "representation productively intersects with…presentation" (Jameson 13).

Stories contain both internal and external narratives. They are not discrete, as they often overlap and causally interact. Functionally, external narratives "reside in relationship between text and context" while internal narratives "legitimize a story from within" (Ryan *Possible Worlds* 151-153). Internal narratives can be either dynamic, violating a previous expectation (irony, surprise, humour) and manipulating reader expectations, or static, narrative devices which chart the boundaries of textual discourse. Working under the assumption that both narrative action and "conflicts arise from incompatibilities between the [fictional world] and the private worlds of characters", Ryan advocates for "a diversification of possible worlds in the narrative universe" which take the form of what she calls embedded narratives (Ryan *Possible Worlds* 156). For many narratologists, embedded narratives are stories that are told by the characters, synonymous with frame narrative. For Ryan, they are "a mental representation involving a temporal dimension and presenting therefore the same semantic structure as the story of which it is a part" ("Cognitive Maps" 274). Embedded narratives can be modal sub-worlds, like dreams or memory flashbacks, but they can also remain completely potential and virtual, for example, expressed or implied desires and beliefs. These virtual

possible worlds "reflect events of the factual domain" of the fictional world, while others "delineate unactualized possibilities" (Ryan *Possible Worlds* 156). Plot devices like broken promises, mistaken interpretations and deception take on a role of narrative generation by initiating potential story lines.

Alan Palmer pushes the embedded narrative one step farther by arguing that fictional minds are comprised of embedded narratives. In his definition of the term, embedded narrative includes "the whole of the character's various perceptual and conceptual viewpoints, ideological worldviews, and plans for the future considered as an individual narrative that is embedded in the whole fictional text" (*Fictional Minds* 15). Internal, mental events are themselves narratives which combine into a larger-scale, holistic sketch of a given character and their disposition. Actions are narratively generative, but so are emotions, memories and predictions for the future. Memory, for example, is both functional and dynamic as it conveys a sense "of the causal process or relationship that exists between memories of the past, behavior in the present, and plans for the future" (Palmer *Fictional Minds* 110). Memory, as an object which is cognitively mapped within the conscious mind, is a key aspect of narrative generation as it interacts with other internal, embedded narratives. Memories can cause conflict, like memories of trauma or when their verisimilitude is questioned, but they can also offer explanation. Similarly, when memories are absent, it creates a gap which the reader attempts to fill through a process of ascription, deciphering clues and making guesses. When fictional mental functioning has its own narrative trajectory, the fictional mind is given "significance within that structure" as more than just unconscious scaffolding (Palmer *Fictional Minds* 186). The fictional mind contains a self narrative, an overarching narrative which helps (or thwarts) the construction of stable fictional entities. This happens on an individual level, but it also, as

I explore later in this thesis, can be applied to a larger, social network. Embedded narratives of one character can come into conflict with another. Ryan gives the example of the story of Cinderella. Cinderella's wish to go to the ball is in active conflict with her stepmother's wish to deny her the experience. As Alan Palmer reminds us, a story "is primarily seen not as the representation of an objective storyworld, but as the interconnection of all the subjective embedded narratives of all the characters who inhabit that fictional world" (*Fictional Minds* 141).

The plot of *The Invention of Morel* takes place almost entirely in the form of embedded narrative. Much of the novella is concerned not with plot, but with the representations of the narrator's internal beliefs, through which the reader's experience of the fictional world is mediated. Every action is accompanied by a direct line into the mental repercussions of that action on the narrator. As the narrator records his adventure, he is constantly revising his explanations and guessing at possible futures. At the end of the novel, he sets out to complete his diary "by correcting mistakes and explaining things I did not understand before" (Bioy 95). He then addresses each moment of uncertainty and explains each detail given his updated perspective. The narrator replays moments over and over again. He follows specific characters to track their movements and make guesses at the reasoning behind their actions. He revisits particular scenes to prove or disprove his assumptions about particular relationships. Ultimately the border between spectator and actor break down. As he attempts to account for Morel's behaviour and explain why he would knowingly doom his friends to death, the line between Morel's mind and the narrator's begins to blur significantly. He writes:

> Perhaps the hell I ascribe to Morel is really my own. I am the one who is in love
>
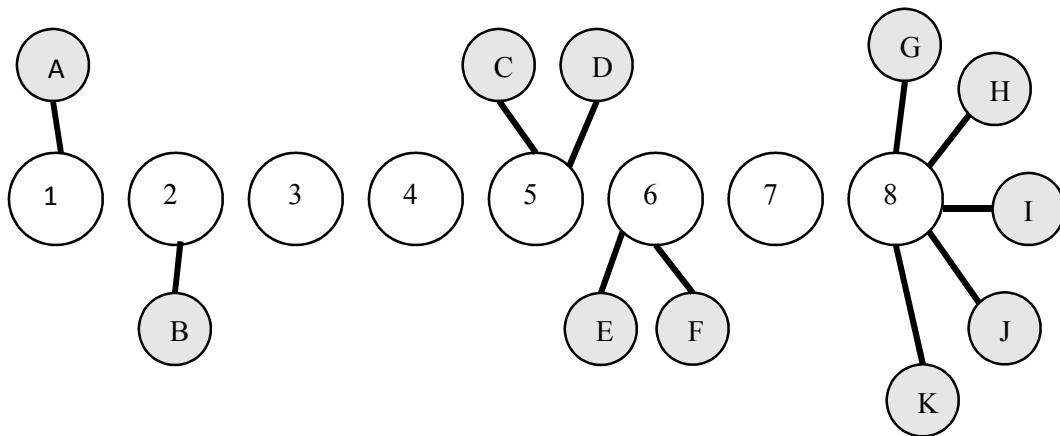> with Faustine, who is capable of murder and suicide; I who am the monster…But I

am raving, I am a fool… He loved the inaccessible Faustine. That is why he killed

her, killed himself and all his friends, and invented immortality. Faustine's beauty

deserves that madness, that tribute, that crime. When I denied that, I was too jealous

or too stubborn to admit that I loved her (Bioy 99-100).

The narrator projects his own emotional attachment to Faustine onto Morel, oscillating between self-awareness and displacement of reality. The reader is given no access to Morel's thoughts or actions. All of the information we have about Morel is conveyed by the narrator, whose natural jealousy of any man who approached Faustine significantly colours his analysis. Morel's love, his motivations, are extensions of the narrator's fictional mind.

Mental predictions are especially noticeable in the romantic plot between the narrator and Faustine as they are more pronounced and include world-building elements. Each action that the narrator takes in courting Faustine takes on a potential, virtual world. First, viewing Faustine and following her movements becomes a source of hope to the narrator, hope that he does not need to endure exile alone, but can love and be loved. Immediately, Faustine becomes the narrator's emotional focal point. All of the other people on the island are defined in proximity to her. It is to approach and court Faustine that he breaks his cycle of voyeurism, despite his paranoia of being found and pursued by the police. He projects the following outcome:

I went down to see her. This was my plan: I would wait for her by the rocks, and

when she arrived I would be watching the sunset. That would change her surprise,

her probable suspicion, to curiosity. Our common devotion to the setting sun would

make a favorable impression on her. She would ask my name, we would become

friends (Bioy 25).

This is an excellent example of an embedded narrative which contains a story-like construct including spatial and temporal orientation resulting in a potential, virtual world. This is a possible future, one projected entirely through an expressed desire. In the time between the narrator's first interaction with Faustine and his discovery of Morel's invention, the narration is peppered with these mental events. In the figure below, I've created a map which follows actual events, and the corresponding mental (virtual) events which are embedded narratives.
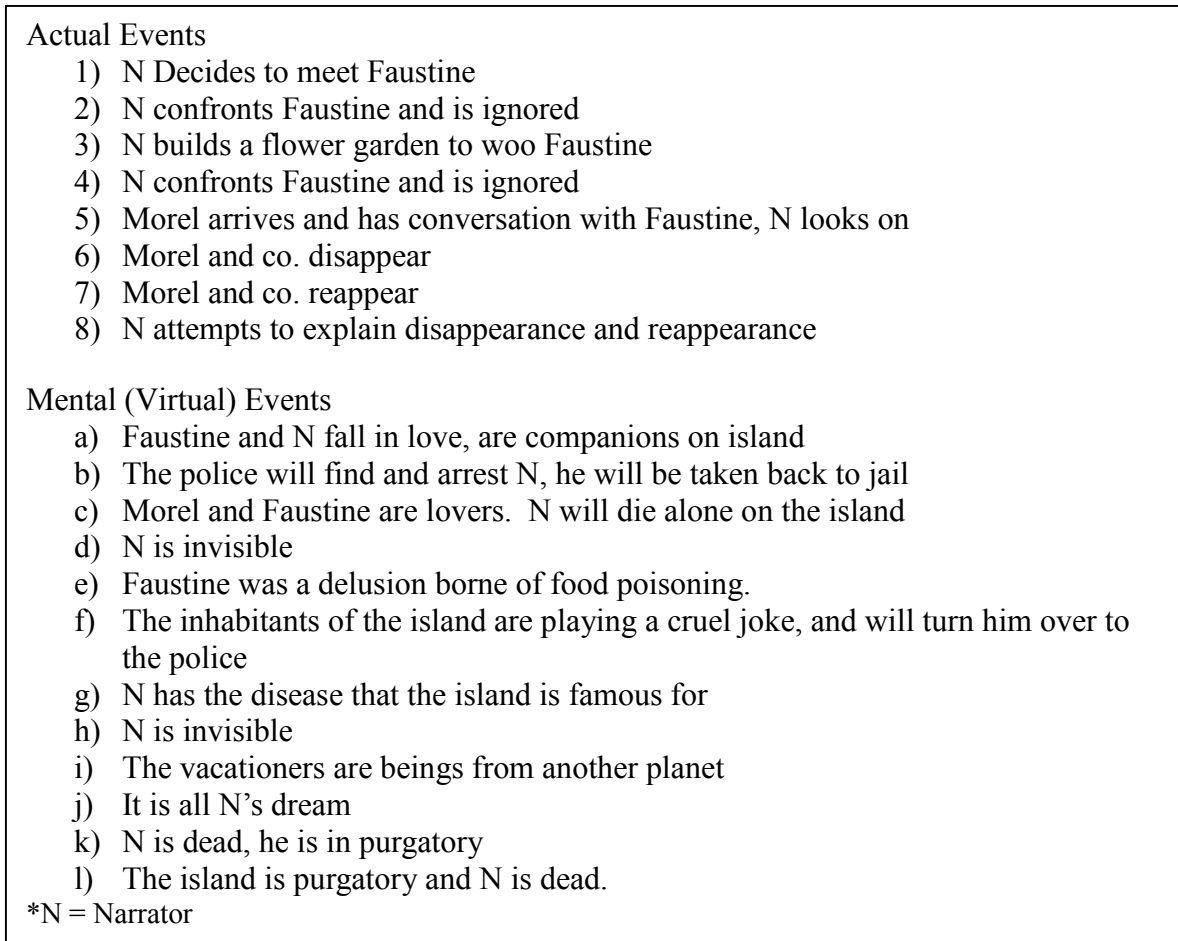
Actual Events
1) N Decides to meet Faustine
2) N confronts Faustine and is ignored
3) N builds a flower garden to woo Faustine
4) N confronts Faustine and is ignored
5) Morel arrives and has conversation with Faustine, N looks on
6) Morel and co. disappear
7) Morel and co. reappear
8) N attempts to explain disappearance and reappearance

Mental (Virtual) Events
a) Faustine and N fall in love, are companions on island
b) The police will find and arrest N, he will be taken back to jail
c) Morel and Faustine are lovers. N will die alone on the island
d) N is invisible
e) Faustine was a delusion borne of food poisoning.
f) The inhabitants of the island are playing a cruel joke, and will turn him over to the police
g) N has the disease that the island is famous for
h) N is invisible
i) The vacationers are beings from another planet
j) It is all N's dream
k) N is dead, he is in purgatory
l) The island is purgatory and N is dead.
*N = Narrator

Fig 5: Plot Map with embedded narratives for "The Invention of Morel"

Because the actual events are only referential to the narrator's experience, there are no conflicting virtual events. Each virtual event is directly linked to the narrator's fictional mind, including the emotional state of the narrator at any given time. There are no competing beliefs or desires emerging from other characters which are in conflict with the narrator's mental projections, because the other characters do not have adaptive mental events. Therefore, the embedded narratives are largely a result of conflict between the narrator's ideal vision of the future and his negative (suspicious, paranoid) visions of the future. "I have found" says the narrator, "that I usually imagine that things are going to turn out badly…it is not accidental; but it is annoying...Perhaps I can forget my beard, my age, and the police who have pursued me for

so long… But I must not be too optimistic" (Bioy 29-30). This war occurs in the mental landscape, but environmental factors, like disruptions to homeostasis, destructive nature events, and the mental repercussions of isolation, factor into the intensity and mood (optimism or despair) of these potentialities. All of this is mediated through the narrator's perception (disoriented by malnutrition, fatigue and disease) and peripatetic moments in regards to the secret of the islanders' appearance and disappearance. This narrative structure gives the novel its semantic texture, and allows the reader to understand the reason behind the behaviours and actions of the narrator. The only other dynamic force which challenges the narrator in the fictional world is the intentionless, inanimate force of nature, which takes the shape of flooding, humidity, unbearable heat and geographic isolation. As Doležel notes, because nature is intentionless, "the encounter is asymmetrical" and in the face of such a destructive, unstoppable force, a person can only take protective action (Doležel *Heterocosmica* 59). Nature events take a toll on the narrator, but do not generate embedded narratives borne of virtual events on their own.

Faustine acts as a representative of the imagistic domain. She is unnervingly detached from reality, constantly staring into the distance. She becomes the focal point of mental imaging and becomes a mirror in which the narrator reflects his own emotional states. The result is an abjection which emerges from a hatred of himself, manifesting in a disgust for his own body. He is at the same time drawn to Faustine and repulsed by her, a cycle which endures throughout the novel and is parallel to a similar cycle of repulsion and admiration that he feels for himself. The stability of his character, including his emotional consistency, becomes fragmented in the face of Faustine's "rejections". When he feels that she may be returning his affection, he is rapturous, hopeful and optimistic but when she ignores him, he is mortified, full

of contempt for fellow man and disgusted with himself and the objects of his gaze. When he realizes she is a projected image, the narrator begins to dream of meeting Faustine in the future, somewhere off the island. When he realizes that Faustine is dead, his first concern is that he has never actually existed for Faustine. She "lives only in this image, for which I do not exist". The inverse, that Faustine never existed for the narrator, is never approached. In the mind of the narrator, Faustine is a real person whom he loves. He has attributed to Faustine a full emotional range and personality with no reference to the original form. Faustine's fictional mind is comprised entirely of the narrator's mental events.

The relationship between Faustine and the narrator is enduringly potential, never actually realized in the story world but left open to the possibility, in the mind of the narrator at least, that at a future time these two who never inhabited the same space will be able to interact. The narrator dies believing that someone in the future will "[invent] a machine that can assemble disjoined presences," an act which will "let [him] enter the heaven of her consciousness" (Bioy 103). It is only by casting off his own body, his ability to interact with environmental stimuli, his ability to dream, and to create new attitudes, beliefs and desires, that he can be with Faustine. Morel himself describes the island as an eternal paradise, which is in sharp contrast to the narrator's experience of the island. This is because the images are disembodied. Consciousness becomes a recorded image to be replayed over and over, a Cartesian theatre of sorts for anyone who may be watching. It no longer is a result of sensory and emotional stimuli jockeying for prominence in a mind capable of subjective experience. For Morel, this distance between the body and consciousness culminates in immortality:

> This island, and its buildings, is our private paradise. Even if we left tomorrow, we would be here eternally, repeating consecutively the moments of this week,

powerless to escape from the consciousness we had in each one of them – the

thoughts and feelings that the machine captured. We will be able to live a life that

is always new, because in each moment of the projection we shall have no

memories other than those we had in the corresponding moment of the eternal

record (Bioy 76)

The images are caught in a self-contained, repeating narrative. Generally in a story, it is "mental events, processes, and states that distinguish actions from mere doings" as they provide the "reasons, motives, intentions, purposes…behind the action" (Palmer *Fictional Minds* 122). The above quote is the most direct summation of Morel's motivations. They are reported to the reader verbatim, quoted directly from the paper on which his speech was written (so as to assuage any doubts about the veracity of the narrator's recording). Immortality is possible in the recording and reproduction of the body. The consciousness which was in the body when it was recorded remains in the recording. However, Morel's speech points to a gap. The gap is temporal; his words are intended for a different audience at a different time. But there is also a gap in the discourse. Are we invited to critique Morel's conception of immortality, as the narrator does initially, or are we to see beauty in its simplicity? While there are two distinct fictional worlds present in the text, the narrator's adventure and the projection, there is only one fictional mind whose embedded narratives texture all perspective. The projected world is engulfed by narration. It becomes accessible only through the narrator's action and thought. Just as mirrors are a prominent motif throughout the novel, so are they an excellent metaphor for the narrator's experience of the projection. His ultimate fate is to lose his body and take up eternity in a reflection of his own consciousness.

Chapter 6: Facing Outwards: Mind-Reading, Sociality and Intersubjectivity

The previous chapters focused on how fictional minds are composed of multiple parallel internal narratives which result in possible, unactualized and virtual actions and worlds. These embedded narratives, and the gaps in between them, are followed by the reader, who uses a continuing consciousness frame to follow and compose a holistic, narrativized fictional mind. As a representation of consciousness, I've shown the fictional mind of the narrator in *The Invention of Morel* to be an embodied one, and discussed his narration as reliant upon his monitoring of both his internal and external milieu. Let us for this final chapter face outwards and discuss the fictional mind as a socially oriented and intensely context-dependent cartographer. Novels are full of socially performed and distributed mental activity. Thought that is "social, public, and observable" is copiously available, including, for example, the attribution of a certain emotional state based on a gesture or tone of voice (Palmer *Fictional Minds* 130). This chapter examines externalist perspectives on the social mind as a stepping stone to understanding the bi-directional relationship between brain-architecture and cultural production.

Throughout this thesis, I have referred to the fictional mind not simply as something which represents interiority, but is also a result of and an impact on its fictional environment. As David Herman notes, the fictional mind, as a representation of consciousness, is "inextricably embedded in contexts for action and interaction, and arise from the interplay between intelligent agents and the broader and social material environments they must negotiate" ("Introduction" 9). In tackling the topic at hand, I have stumbled across many frameworks and approaches which differentiate between interiority and exteriority. Take, for

example, Manfred Jahn's invocation of the internal (or embedded) narrative as "located within and framed by an external narrative" ("Awake!" 198). The external action of the story frames the multiple narratives which emerge from the mental activities of the fictional mind. The interior/exterior divide is, no doubt, a response to the subjective experience of consciousness as discussed in Chapter 3. In most instances, scholars are careful to note the dangers of completely dissociating the two. Even Jahn notes that "external and internal stories…are highly indeterminate when viewed in isolation and prone to shift status erratically as soon as contextual factors come into play" ("Awake!" 200). Just as internal and external factors are doubtlessly causally interactive in terms of the information processing capabilities of any organism, deeming narratives as internal or external is deeply context dependent. And even then, the distinction is often a blurry one.

Let us shift focus from the internal to external narratives which surround the fictional mind as a socially and physically situated phenomenon. I do not think that this shift in focus in any way gestures to a divide between interior and exterior, or by extension, between mind and body. Rather, even when we are applying externalist frameworks, we must pause to look at the fictional mind holistically. By this I mean that by looking at a fictional mind as not just a representation of consciousness but as a process within a larger organism adding specific mental capabilities (e.g. the self, memory, social navigation, behavioural patterns), the internal, subjective experience of consciousness provided within a given narrative is inextricably bound with the external expression. Rather than being discrete in terms of their reciprocal influence, they converge within a continuum which acts as a blank canvas for the self's cartographic quest. In terms of literary relevance, if conscious experience is a result of multiple, parallel and competing physical processes which culminate in an autobiographical self and we can illustrate

a mirrored functionality in a given fictional representation of consciousness, then we can see said processes as constantly shifting based on a range of simultaneous internal and external stimuli. The object of study is not the interiority or exteriority of a given character but the fictional mind as the nexus between the two.

That being said, the divide between internal and external approaches is important because they are duplicated in narrative perspective. Fictional subjectivity can be approached from either a first-person (self) or third-person (others) perspective. An excellent example of how this impacts literary analysis can be seen in the difference between aspectuality and focalization. Focalization, a narratology term coined by Genette, is reformulation of the concept of point of view, or perspective. It occurs when "the reader is presented with the aspect of the storyworld that is being experienced by the focalizer at that moment" (Palmer *Social Minds* 40). In other words, focalization is the degree to which restrictions are placed on the reader's access to information. A focalizer, who can arguably be either a character or a narrator, restricts, to varying degrees, the information available to the reader. Gennette's notion of focalization itself has evolved to include a divide between internal (imperceptible objects, like thoughts and feelings) and external focalization (perceptible objects, like actions) (Bal *Narratology* 1997). Focalization can be seen as a counterpoint to aspectuality, a term which draws attention to the fact that the storyworld is "experienced under some aspects and not by other characters who inhabit [it]" (Palmer *Social Minds* 40). Aspectuality allows the reader to reach beyond the internal and external of a given focalizer to search for ways of accessing fictional subjectivities not available through direct narrative perspective[12]. Analysis concerned

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[12] A great example of aspectual criticism can be found in John Knapp's *Striking at the Joints: Contemporary Psychology and Literary Criticism.* He famously reimagines D.H. Lawrence's *Sons and Lovers* from the

with aspectuality attempts to integrate a larger social landscape present in the fictional world by taking into account what is textually available in terms of marginal fictional minds and socially distributed minds (the attitudes, norms and ideals of a larger group or community). These external, unfocalized minds, in turn, may prove to have analytic impact on our readings of focalized narrators and characters.

While it may seem paradoxical, I am arguing that the internal/external divide is at the same time a useful critical tool and a red herring. It is true that we can understand internal mental states based on external manifestations. Take, for example, body language and facial expressions. And it is equally true that there are significant hurdles in expressing, whether through verbal or non-verbal language, the experience of consciousness. How does one express the true experience of pain or pleasure? In narrative we are able to radically reimagine the relationship between the interior and exterior by the ways in which characters are developed and accessed. In order to give this argument shape, I utilize the work of several cognitive narratologists, including David Herman's explanation of action-loops, Lisa Zunshine's work on metarepresentation and mind-reading and Alan Palmer's work on the social mind. My analysis is further supported by intersubjectivity, the cognitive science approach which posits that the mind is shaped by its engagement with other minds. This shift in focus allows us to look more closely at the narrator of *The Invention of Morel* on a level that takes into account the minds which surround him. He is at the same time narrator and character, focalizer and focalized. The emphasis that Bioy places on the body throughout the narrative, especially in terms of the survival implications of his homeostatic monitoring, can be read in tandem with

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perspective of Paul's father, an unfocalized character. This is an "against the grain" reading, but Knapp is convincing in his psychological framing of the "emotional landscape of the storyworld" (Palmer 41).

the constant social awareness and reactionary activity of the narrator. As he navigates the impossible landscape, the reader is given access, via the perspective of the novel, to the internal mental states and physical wellness of the narrator. But the reader is also given access to the social component of the narrator's mind. He scans the physical (nature events) and social (the projected images) landscape in a way that changes his behaviours and levels of engagement. In this chapter, I extend the commentary in previous sections on internal representations of consciousness into the sphere of the social and cultural, arguing that the processes which enable the self (Damasio) are the same processes which hold sway over the effects and exhibitions of external navigation.

When I refer to internalist and externalist perspectives on the fictional mind, I am specifically invoking Alan Palmer's definitions of these terms. In his work on what he calls "the social mind," Palmer argues that there has been a historical divide between internalist and externalist perspectives in terms of critical perspectives on fictional representations of consciousness. The dominant approach in terms of literary criticism has been an internalist perspective, one which "stresses those aspects that are inner, introspective, private, solitary, individual, psychological, mysterious, and detached" (Palmer *Social Minds* 39). The interior monologue, the direct attribution of first-person thought and stream of consciousness are all traditionally approached as if internal, private self-attribution. Palmer's book *Social Minds*, seeks to explore an externalist perspective, which he argues has been heretofore undervalued. An externalist perspective is one that places weight on the aspects of the mind "that are outer, active, public, social, behavioural, evident, embodied and engaged" (Palmer *Social Minds* 40). Palmer is quick to note that these approaches to the fictional mind are not an either/or dichotomy, but are a continuum, much like the relationship between focalization and

aspectuality. A fictional mind comprised of its multiple embedded narratives, does not exist in a silo, even in a first-person text where the story and discourse is predominately mediated through a single narrative perspective.

Both internalist and externalist perspectives come into play when unpacking *The Invention of Morel*. From an internalist perspective, the fictional mind of the narrator, the whole of his thoughts, emotions, dreams and motivations, is the focal point of the novel. However, when we turn towards an externalist perspective, we are able to see his fictional mind in active, social engagement with the "minds" of Morel's imagistic reproductions. Take, for example, the following passage from early in the novel. The narrator has not yet learned about the machine behind the sudden appearance of the people on the hill, but he has fallen in love with Faustine and has been attempting to make contact with her to declare his love:

> When the woman came down to the rocks, I was watching the sunset. She stood there for a moment without moving, looking for a place to spread out her blanket. Then she walked toward me. If I had put out my hand, I would have touched her. This possibility horrified me (as if I had almost touched a ghost). There was something frightening in her complete detachment. But when she sat down at my side it seemed she was defying me, trying to show that she no longer ignored my presence.
>
> She took a book out of her basket and sat there reading. I tried to control my nerves.
>
> Then, as she stopped reading and looked up, I thought, "she is going to ask me a question." But the implacable silence continued. I understood the serious

implications of not interrupting it; but still, without any obstinacy, for no reason, I remained silent" (Bioy 29).

This passage is deceptively simple when viewed from an internalist perspective. We are given direct access to the narrator's thoughts and emotions. He is nervous in her presence, frightened by her ghost-like demeanor and her detachment. He expresses his understanding of his own actions in context of their larger relationship. The moment plays out as a still but mentally charged meeting, highly focalized through the narrator's experience of the event. However, this passage is also ripe with clues as to external stimuli and social relevance. We are invited to ask how the narrator understands "the implications of not interrupting" the moment, and how he came to that conclusion. His habitual voyeurism can also be read through the lens of the cognitive frame of mind-reading.

Mind reading, explains Lisa Zunshine, is "our ability to explain people's behavior in terms of their thoughts, feelings, beliefs and desires" (Zunshine 6). We have the ability to "ascribe to a person a certain mental state on the basis of her observable action," for example a gesture, body language, and tone of voice, particular wording or facial expression (Zunshine 6). Mental attributions of this kind can also be misattributions, based on faulty evidence, misunderstanding, tricks of the mind and even willful deception on the part of the narrator. Zunshine uses the example of Nabokov's *Lolita* as an example of a narrator who tries to frame his own delusional version of the world as having credence by manipulating our mind-reading ability. Pointing out instances where narrative is shaped by mind-reading points out that even in texts which provide direct access to a character's mind, "the reader's experience…does not depend solely on that device" (Palmer *Fictional Minds* 11). The fictional mind is made available to the reader in visible and non-visible, as well as verbal and non-verbal, capacities.

How is the narrator mind-reading in the passage above? Put simply, he interprets certain actions to contain meaning. He says that it "seemed she was defying me, trying to show that she no longer ignored my presence" when she sits next to him. When she stops reading and looks up, he thinks "she is going to ask me a question". He is ascribing motives and intentions to Faustine's actions.   However, the behaviourist stance that he has taken, one of pure observation, results, in this case, on misattribution. First, the text has already demonstrated at this point that the narrator's mind is not completely clear. His homeostatic range has been compromised on the basis of persistent fatigue, hallucination from potentially poisonous edibles, and physical discomfort in the form of constant dampness and insect bites. On top of this, he does not have sufficient information about the rules of the fictional world. A crucial component, knowledge about Morel's invention, is missing. He is attempting to use cultural and social rules from a world outside of the one of isolation and solitude he has found himself. Immediately after this passage, the narrator remains optimistic about their relationship, asking "what does a man usually do on these occasions? He sends flowers of course" (Bioy 30). He is basing the ascription of his own mental states and motivations for action on his imperfect mind-reading. All of his emotions in relation to Faustine, his love, his fear, his anxiety, they are all concretized through the same process of mind-reading. His prediction, that flowers would be successful, is doomed, of course, to fail.

The above passage is also indicative of the narrator's occupation of the role of scripter. He ostensibly writes personas for each of the image-people whom he observes. Rabinowitz extends Zunshine's definition of mind-reading to include a reciprocal action of "mind writing…a legible, nearly material expression of inner thoughts" (88). There is a constant exchange between mind-reading and mind-writing, complicated by emotional valence, depth

(number of steps involved), reciprocity (exchange between minds), multiplicity (how many minds are involved), angle, occlusion (opacity, transparency), modality (attitude in which cognitive exchange is made), and consistency (Rabinowitz 88-91). In the case of *The Invention of Morel*, the emotional valence fluctuates rapidly based on the state of mind of the narrator at any given moment. His mind-writing is inconsistent and opaque. He is at times positive, optimistic and productive, and at times depressed and defeatist. His attraction or aversion to the other people on the island oscillates between poles from beginning to end and has an effect on how they are portrayed in his journal. There is a link here with modality. Faustine is mind-written out of love and admiration, where Morel is painted with jealousy. Additionally, although the island is populated with many "people", there is no direct exchange between minds. The narrator learns information from watching the recordings and adapts his behavior based on information processing, but it is not an exchange. Faustine never talks to the narrator. He is never able to truly know her. He is in love with his own version of Faustine.

Mind-writing underscores the importance of the fictional mind to the reader's experience of the text. The reader depends on mind-reading to track and ascribe meaning to textual exchange. In this passage, but also throughout the rest of the novel, the narrator's perspective on the comings and goings of the image-people is predominately based on attribution and mind-reading functionality. As Palmer reminds us "we comprehend narrative by working out and remembering which character perceives, thinks, wants, and feels what, and how the different characters are likely to reason and respond to the circumstances of the storyworld in which they find themselves" (*Social Minds* 21). In *The Invention of Morel,* the minds of Morel's reproductions are written, to use Rabinowitz's terminology, by the narrator. This is not only an example of how the fictional mind extends into its fictional environment, it is also an

example of how blurry the line here is between internal and external narratives. The living, pre-recording Faustine is completely unavailable to us. Her cold detachment, her gypsy-like beauty and her flirtations with the men that surround her are twice removed, once by spatiotemporal separation and again through the narrator's obsessive disposition. This is true of all of the images. The narrator's mind is programmed to mind-read, and it is how he navigates the situations he finds himself in. But it is also a narratively loaded cognitive frame in that we are left with characters who are completely virtual. They are constructed mentally within the narrator's mind based on context dependent clues.

This leads into the establishment of a fictional mind as embodied and context dependent, situated in a fictional world which constitutes its environment. Nancy Easterlin extends the definition of environment beyond the purely physical to include "social groups…as well as individual character and experience" in its definition (260). "Narrativity," Easterlin states, "arises from the perception of chronologically related causes and effects…binding the individual to the social group and to the physical environment through a causal sequence of events [and] narrative thinking" (263). The cartographic processes embedded in the fictional mind are caught up in a constant process of wayfinding on both physical and social levels. Narratives reveal inner character and experience, but are also contingent on social interaction. The cognitive science term "intersubjectivity" frames the mind as "equipped with *needs* for dialogic, intermental engagement with other similar minds" (emphasis added, Trevarthen). An intersubjective approach to the fictional mind means taking into account, and differentiating between, physical and social spheres of influence; the language made available through text "emerges partly from the human subject, and partly from its surrounding culture, so culture still

has a role in constructing the subject but the brain also has a role in forming culture" (Crane 18).

One way to conceptualize this situatedness is found in Andy Clark's definition of action-loops. Rather than regarding fictional consciousness, and consciousness in general, as a separate interior space, texts which narrativize the mind, offering representations of consciousness, "allow the mind to be imagined as kind of a distributional flow, interwoven with, rather than separated from, situations, events, and processes in the world" (Herman "Reminding Modernism" 254). Reading a fictional mind doesn't mean identifying separately the minds and the environments, and then connecting them together. Instead, it means understanding the fictional world-as-experienced, understanding semantics of both story and world construction as linked together through the experiential narratives embedded in the fictional mind.

David Herman explains the literary relevance of action-loops well, explaining that they are not just important to behaviours in a certain moment, but, like in Alan Palmer's continuing consciousness frame, are linked together in the mind of the reader to explain behaviours as they manifest throughout the whole of the text:

> [text] situates [characters'] perceptions and inferences in an action-loop that criss-crosses between these characters and their environment; what they take to be happening emerges from their understanding of the requirements not only for navigating…material and social spaces…but also for performing subsequent acts of telling, critiquing, and disputing. Those acts provide a raison d'être and orienting frame for more localized feats of sense-making" (Herman "Reminding Modernism" 262)

The narrator in *The Invention of Morel* certainly changes his navigation of material and social spaces as he comes to understand the island and its ghost-like inhabitants. On a material level, he learns and adapts to an isolated life surrounded by a very dangerous set of environmental circumstances. He learns to feed himself, avoid flash floods, and utilize existing man-made tools and structures (including Morel's machine) to varying degrees of success. He also adapts socially. He is at first suspicious and puzzled by the sudden arrival of Morel's party. But he risks his safety to confess his love for Faustine, a woman whose indifference he both curses and praises. Upon his realization that the population of the island is entirely composed of projected images, he adapts by obsessively monitoring their movements and even interacting with their repetitious play-back. He sleeps "on a mat on the floor, beside [Faustine'] bed" and projects onto her image an idyllic future in which they meet and fall in love (Bioy 79). "If I should find Faustine," writes the narrator, "how she would laugh when I told her about the many times I have talked to her image with tenderness and desperation" (Bioy 85). Those same unconscious enemies whom the narrator curses at the beginning of the book are eventually described as "a stroke of luck" (Bioy 85). He imagines that the projections are happy in their "rotating eternity…free from bad news and disease, they live forever as if each thing were happening for the first time" (Bioy 85). In so doing, the narrator ascribes them a collective mind, but as the replicants are without fictional minds of their own, all of the intentional states are in relation to the narrator's perspective. By this token, the fictional world of *The Invention of Morel* has an aspectuality that is displaced in both space and time. The reader can only experience the fictional world "from a particular perceptual and cognitive aspect at any one time" and for the duration of the narrative, that perspectival frame is the narrator's (Palmer *Social Minds* 56). The fictional world would have been experienced differently by the original

Faustine and Morel, and it is interesting to try to fill in that aspect by the details about their comings and goings provided by the narrator. What we are left with, is a fictional world distorted both materially and socially by the stoppage of time through endless repetition. The narrative simulates the effect of a mirror reflecting a mirror. The island's inhabitants are immortal, but unchanging no matter how many layers are peeled away. The images themselves are fictions, constructed as allegories. The narrator builds their identities based on observations and attributions in a precarious set of circumstances, taking on archetypal qualities and projections of various mental dimensions of the narrator. As a result, the cast of images are very general, flat and unrealistic. As readers, we must ask if the author is not gesturing to this process of attribution as somehow inherent in the act of reading fiction more generally. Is there a cognitive tendency in readers to similarly project their own identities and beliefs onto characters when negotiating a fictional world?

There is a link between action-loops and the cognitive science approach to the mind of intersubjectivity, an approach which challenges traditional Cartesian geographies of the mind. An intersubjective first approach is one "in which mental activity – including conscious awareness, motives and intentions, cognitions and emotions – is transferred between minds" (Trevarthen). This can be seen in contrast to the subjective first approach which "assumes that human minds are inherently separate in their purposes and experiences...they construct an awareness of the self in society but remain single subjectivities" (Trevarthen). Society, in the subjective first model is "intelligent and civilized cooperation as an artificial acquisition" (Trevarthen). But when the mind is approached as intersubjective, it is "equipped with needs for dialogic, intermental engagement with other similar minds" (MIETCS Trevarthen). By taking an intersubjective approach, I am asserting that the fictional minds require interaction

with other minds in the novel in order to be fully realized. Human cooperation is not artificial, but a function embedded in cognitive architectures. This translates directly to fictional worlds. Characters are not transplanted into a fictional world, they are a part of it. The narrativity arises from the characters' experience of the fictional world, mediated through different levels of narrative transmission and emphasis on varying cognitive frames. Interrelations between different types of thought, symbolic ideologies and dispositions give a new dimension to the fictional mind by the nature of their interaction. As such, the inner life of the characters on the page can be evaluated as fictional minds capable of sociocultural interaction and in the process of experiencing the fictional world in which they are situated.

To conclude this chapter, I'd like to briefly gesture to the connection between the evolution of the socially situated mind and the creation of culture and, in turn, objects of culture. The context-dependency of the mind, its actions based on a feedback loop between mental architecture and environmental factors, is the driving force behind larger patterns of behavior which result in cultural paradigms. Culture is a "biological revolution" (Damasio 306). Language allowed knowledge to be transferred, and so the autobiographical self had access to larger and larger pools of shared, recorded "memories". More data meant the need for more complex processes for organizing that data, requiring the mechanisms in charge of coordinating and reconstructing memory to adapt. From this emerges the "brain's ability to produce not only mental representations that imitate reality...mimetically but also representations that symbolize actions and objects and individuals (Damasio 307). Inquiry, reflection and response become collectively knowable and increasingly expressed through myth, religion and eventually more material structures of governance. The building blocks of culture are the individual organisms

which house the complex process of consciousness. In short, the evolution of the self corresponds to different stages of cultural development.

Damasio's approach to consciousness also contains multiple references to environmental adaptation through its alignment with evolutionary biology. He maintains that the modern state of human consciousness is a result of long-term survival adaptation to a given environment. John Tooby and Leda Cosmides take a similar evolutionary approach, applying evolutionary psychology to the history of culture. Culture is "the manufactured product of evolved psychological mechanisms situated in individuals living in groups" (Tooby and Cosmides 24). The analysis of culture, and in turn the analysis of cultural productions, is enhanced when considered within a larger evolutionary trajectory. If the evolution of psychological mechanisms of the human nervous system gave rise to the creation of culture (social interaction beyond mutual survival cooperation), then how do those underlying psychological mechanisms continue to shape culture? Culture becomes an adaptive ecosystem made of multiple, functional organisms containing conscious minds and is navigated parallel to the physical environment; again, cultural productions and bodily experience leave reciprocal impressions.

As evolutionary psychologists, John Tooby and Leda Cosmides identify a causal interaction between evolution and culture. Understanding the evolution of psychological mechanisms in the individual is the key to identifying and interpreting cultural patterns. Our richly complex individual experiences, including our "developmental programs, as well as the physiological and psychological mechanisms that they reliably construct," rely upon a shared "cognitive architecture, embodied in a physiological system" (Tooby and Cosmides 20-21). This physiological system, in turn, interacts with both "the social and non-social world which surrounds it" (Tooby and Cosmides 21). Cognitive architecture gives rise to psychological

mechanisms which are content-specific adaptations "evolved to solve long-enduring adaptive problems" (Tooby and Cosmides 49). Culture is one such production:

> "Culture is the manufactured product of evolved psychological mechanisms situated in individuals living in groups. Culture and human social behaviour is complexly variable, but not because the human mind is a social product, a blank slate, or an externally programmed general-purpose computer, lacking a richly defined and evolved structure. Instead, human culture and social behaviour is richly variable because it is generated by an incredibly intricate, contingent set of functional programs that use and process information from the world, including information that is provided both intentionally and unintentionally by other human beings" (Tooby and Cosmides 24).

Culture is not limited by cognitive architecture, but rather it is richly complex because of cognitive architecture. In turn, the social system is not like a person, "self ordering due to its own functionally integrated mechanisms", but more like an ecosystem "whose relationships are structured by feedback processes driven by the dynamic properties of its component parts" (Tooby and Cosmides 47). If society's component parts are individual conscious minds, then society is structured by the processes of self which are continually in play on the individual level.

The connection between individual mind and cultural production is evidenced in literary production. Such productions are results of authorial minds, but are also constructed inside of larger social and historical contexts. The novel, a form of cultural production, portrays bounded, fictional worlds populated with characters and situated in constructed cosmologies of space and time. Literature an expression of consciousness, a snapshot which acts as "evidence of the

imagination working at its highest pitch" which simultaneously reflects certain patterns and conventions relevant to its sociocultural context (Richardson 2). Character is more than a "conglomeration of features" (Palmer 42). They are non-actual persons constructed through textual utterance, "directed, teleological set[s] based on cultural models" (Palmer *Fictional Minds* 42). Cultural norms guide our formal expectations of characters, but viewing character through a cognitive lens sheds light on how readers are enabled to "compose situations and attribute intelligible roles" (Palmer *Fictional Minds* 42). In turn, fictional experiments push the perceived limits of consciousness and interactions between fictional minds.

Chapter 7: Conclusion: Where Do We Go From Here?

In this thesis, I have deliberately employed cognitive terminology and frameworks from across disciplines in order to argue that fiction contains characters to whom we can attribute fictional minds. In approaching text from this cognitivist perspective, it is important to pause for a moment ask how this hermeneutic adds value over and above traditional literary criticism. This is, in some ways, a semantic argument. How does, for example, Fludernik's use of cognitive frames add value to Genette's levels of narrative focalization? Alternatively, how does identifying gaps and inconsistencies in narrative as indications of unconscious processing stand up to Doležel's notion of "zero-texture", where gaps in the storyworld are akin to absolute absences? It seems to me that the best way to conclude is to make an argument for how and why approaching a text like *The Invention of Morel* using a cognitive framework is value-added approach.

I've shown in this thesis that in attributing fictional minds (and fictional mental functioning) to fictional characters effects the reader's experience and ability to make sense of

fictional worlds. First, as is suggested by cognitive narratologists such as Margolin, Palmer, and Fludernik, identifying the convergences between narrative structures and cognitive frames adds a layer of potential story elements to take into consideration. The text is not simply a series of events (story) embedded in context (discourse) but an invitation to imaginatively share the mental space of fictional characters. This implicates both author and reader. How does text evoke specific cognitive frames in the reader and how does a reader use those cognitive frames to make sense of the text? The interplay between the actual and the fictional is given shape when perspectival paradigms come into a dialogue with cognitive frames about how mental activity is represented in text. Text inherits the stylistic conventions of its author (and genre, and time period and cultural context) but it is also a speech act which emerges from a cognitive architecture and whose topic is experientiality.

The second contribution of the cognitive approach I've taken in this paper is a discussion on the parallels between actual consciousness and fiction itself. Theorists like Dennett, Spolsky and Coelsch-Foisner propose opening up autonomous models of consciousness to include a narrative dimension. Conscious experience, comprised of multiple, parallel conscious (and unconscious) streams of experiential data, is just the version of events that we experience. By extension, our "self" takes on a narrative quality, immersed in memory and linked to the physical processes which enable conscious experience. Fictional minds are, as I have argued, are similarly structure, comprised of multiple, parallel narratives (embedded narratives). In *The Invention of Morel,* the narrator is jointly the teller and the experiencer, so the events of the story become jumbled with the character profile of the "self" who is experiencing those events. To use a cognitive science term, the narrator is constantly processing information, fuelling his cognitive maps and engaging his sensory organs as he navigates (and attempts to

make sense of) his fictional environment. This cognitive terminology gives a shape and a name to long held assumptions espoused by literary theorists about the interactivity between fictional minds and their fictional worlds.

For example, I could argue that the survival aspects of *The Invention of Morel* cause us to call the narrator's version of events into question. He is unreliable because of the abrupt lapses in narration which pepper the text, and the constant reference to his own physical and mental duress. Why resist this urge to 'cry unreliability' and place it within a cognitive perspective? First, by identifying that these are moments of homeostatic rupture, I am gesturing to the narrator as an embodied fictional mind. I want to emphasize the context dependency of the narrative through the use of a largely unconscious process becoming a component of the narrator's conscious experience. Second, instead of deeming the narrator unreliable, I wish to emphasize the ways in which the narrative must be read contextually in relation to the conditions of the narrator's mind, his biases and his frameworks of knowledge. The gaps in consciousness, and the fluidity with which conscious experience changes and adapts, is a mediating factor in the text. The narrator is caught up in the story of his selfhood and it permeates every layer narrative discourse. The narrative is shaped in direct response to changes in his environment, so I read the gaps and inconsistencies in the narrative not as moments of stillness, but as moments filled with an intense flurry of mental activity. The narrator reflects on these moments and then concretizes the experience after the fact as a journal entry. There is an embedded narrative here in the moment of the implied mental activity which is not conveyed in the text: the mental states which accompanied the experience, and then the reflection that occurs before the moment of composing and telling. The journal is meant for an

audience, "to leave a record of the adverse miracle" so narrative pauses can be read as moments of mental reorientation (Bioy 9). Here is an example of one such moment:

I tried to protect myself from its devastation. This afternoon—

I am afraid. But more than that I am angry at myself… (Bioy 25)

The dash and the page break that follows shows a complete stop and then a restarting of the narrative. When the narrator returns, he explains what occurred (he believes he was seen by Faustine and fears that he will be found and imprisoned) but he orients the story by first expressing his fear and his anger. The gap narrative of reflection and reorientation is assumed because the starting point for interpreting fictional work is the actual world. The attribution of this type of mental activity is supported by research, like that of Fludernik and Ryan, about the relationship between linguistic structure, intentionality, narrativity and cognitive architectures.

The final contribution which a cognitive framework brings to this exploration is in its solidification of the direct relationship between the fictional mind and the fictional environment. Cognitive mapping includes not only the mapping of the body, but also orients the reader to a spatial and social awareness of the fictional world in which the fictional mind is situated. Embedded narratives, their emotional valence and their frequency, are tightly linked to changes in external stimuli. Internalist and externalist perspectives on approaching the fictional mind, as I hope this thesis has shown, are not mutually exclusive but complementary. Attributing fictional characters' "minds" which are situated in fictional cosmologies allows the reader to interpret both instances of direct access to inner speech and external manifestations of cognitive functions as relational to a single continuing consciousness. Whether characters' thoughts are directly available, reported, or a combination of the two, understanding the ways

in which fictional mental functioning is present in text adds depth to the fictional worlds with which they are enmeshed. Lubomir Doležel writes that "from the viewpoint of the reader, the fictional text can be characterized as a set of instructions according to which the fictional world is to be recovered and reassembled" ("Mimesis and Possible Worlds" 489). Some of these instructions, I have argued, are embedded in fictional mental functioning.

Looking forward, this research could lead down a couple of interesting paths. One is to look more closely at the relationship between embodiment and fictional minds in a way that goes beyond emphasizing the role that environment has to play in understanding fictional mental functioning. Bodies, for some, are "signifiers, metaphors or allegorical emblems" while others view the body as a "site of intervention or inscriptive surface" (Canning 500). From Grosz' corporeal feminism to Scarry's bodies in pain, reading the body in text and as text has complicated our understanding of the ways in which literature impacts political and cultural spheres. I think that there is a conversation to be had between post-classical narratology and embodiment theory which could produce interesting revisions to existing assumptions about narrative forms. SF in particular has some radical formulations of the body in text which extends to question the ethics of body modification, as in Greg Bear's *Queen of Angels*, and the body politics of non-human persons, as in Bacigalupi's "The Wind-Up Girl".

The second interesting pathway which is a natural extension of this type of research is cognitive poetics, a discipline which connects the study of the mind and the study of literature. Its access points are "the processing of words or activation of knowledge schemas from memory" as well as "associations, images, feelings, emotions and social attitudes" (Steen and Gavins 2). Literature becomes evidence of the cognitive capacities for imaginative creation, "a specific form of everyday human experience… grounded in our general cognitive capacities

for making sense of the world" (Steen and Gavins 1). Cognitive poetics emerges from two main critical frameworks: cognitive linguistics and cognitive science. Text is accessed as "a symbolic, semiotic system…governed by conventions of significations" (Steen and Gavins 8). In this way, the field of exploration for cognitive poetics includes "relating structures of the…literary text to their presumed or observed psychological effects on the recipient, including the reader" (Steen and Gavins 1).

Text world theory, a sub-discipline of cognitive poetics, navigates both "how knowledge is organized in conceptual structures" and "how readers…keep track of discourse events" (Giovanelli 4). There is a particular emphasis placed on world-construction, "movements towards and from remote conceptual spaces set up through temporal and spatial shifts, modalised constructions, [and] direct speech" (Giovanelli 4-5). A simple text world contains both "deictic properties and function advancing propositions" (Werth *Text Worlds* 204). However, text worlds also contain discourse worlds, the situational context of a given speech act, and sub-worlds, "more complex structures formed from modalised constructions…shifts in time and space, thought and speech processes and hypothetical and imaginary situations" (Giovanelli 23). I am particularly interested in narratives that have characters who travel between sub-worlds which are extensions of mental activity, such as dream worlds, nightmares, states of desire and drug induced states. Examples include the filmic narratives of Ingmar Bergman, particularly the film *Wild Strawberries*, which sit on the border between waking and dreaming. The paranoid labyrinths of Philip K. Dick's novels or the many dream worlds of Ursula le Guin's *The Lathe of Heaven* are also examples of texts which contain fictional worlds with narratives bound up in multiple realities and/or altered states of consciousness.

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