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Embodying Literature

Introduction

Walt Disney's movie, *The Pagemaster* (1994) begins on a dark and stormy night, with a young boy stumbling into an immense, gothic-styled library for refuge from the rain. Once inside, he is soon carried away by a tumultuous river of coloured paints, transformed into an animated characterization of himself, and thrust into an animated world of literature, where he battles Captain Hook, flees Moby Dick, and participates in other classic tales of adventure, horror, and fantasy.

Adults might understand the film as a fanciful description of how they feel when reading a lively book. Although they would probably not imagine themselves tagging along with the animated characters like a 4th musketeer, they might very well claim that they enter a fiction through the viewpoint of one or more of the characters, experiencing, imaginatively, mental images of the sights, sounds, smells, and movements that the character would experience. Under this description, the reader would be forming *multi-modal images* that would correspond *directly* to what the literary characters are doing, thinking, and experiencing. When a fictional hero whips out his sword and slashes a rope in half, the reader might form a visual image of the hero's determined face, an auditory image of the sound of the whizzing sword, and a motor image of an extended arm movement. I call such an *imitative* participation, by use of mental images in any modality, a *simulation*.

Hypothesis

I suggest that this *imitative* experiencing of a fiction through the production of multi-modal imagery — a simulation — is not the only way in which readers might engage a literary text. In this paper I explore the hypothesis that readers might use their own bodily processes — those of the somato-viscero-motor system (SVM) for a *non-imitative* activity that I call a reinterpretation and that the

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reinterpretation might make a distinctive contribution to the reading process.¹ As an example of a simulation and a reinterpretation, take the SVM experience of the reader's breathing. A simulation would occur if the text describes a character who is taking deep breaths of air and the reader creates a mental image representing the experience of breathing. In this case, the *reader's mental image of breathing would stand for a property of the literary work — the fictional experience of breathing.*²

By contrast to the simulation, a reinterpretation would occur if the text describes a character who is gazing at long, wispy clouds that extend outward from a horizon and the reader uses his own experience of breathing to stand for the visual sense of looking at a long, continuous expanse of filmy white: *the reader's actual breathing would stand for a property of the literary work — the fictional experience of seeing.* Breathing is not the same as seeing. This should help clarify the following definition.

I hypothesize that a reinterpretation occurs when the reader becomes aware of some component of the SVM system and reinterprets it as a property of the literary work that is not the same as that particular SVM process. The SVM experience is projected into the literary work.

Modelling Reinterpretations

To elaborate upon the definition, I shall begin by taking up a question that bears on the initial plausibility of the reinterpretation hypothesis: Why produce a reinterpretation? One possible reason is that reinterpreting might require less attentional capacity and/or would take less time to produce than a image-simulation. A reinterpretation might only involve a shift in attentional focus to an ongoing, bodily activity and a renaming, a reinterpreting of this bodily process. By contrast, an image-simulation might require the relatively lengthy production of memory images — whether autobiographical memories or semantic knowledge, which involves a number of component operations.

To continue this line of thinking about efficiency, one might consider reinterpretation as a kind of shorthand the reader uses for the *concretizing* and, for what I call, the *vitalization* of a fictional world.³ Whereas concretizing refers to the process of making the fictional world concrete and perceptually specific,

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- [1] In referring to SVM, I am concerned with the *somatosensory* system, which includes our tactile sensations on the body's surface (touch), and, from deeper inside, our *proprioceptive sensations*, those detecting vibration and spatial position, as well as the kinesthetic senses of bodily movement and balance. Additionally, I am concerned with the *visceral functions* of the autonomic nervous system, those involving the regulation of the heart and lungs, the intestines, the blood vessels, the stomach, and the skin, and with the *motor system* as it pertains to the operation of the muscles in all systems throughout the body. These bodily systems have multidimensional, sensory input into the brain.
- [2] Under this definition we might include another kind of simulation, in which the reader might become aware of her own breathing, which would stand for the textual reference to the character's breathing. However, as this kind of experience would be far less commonly produced than that of a multi-modal image, I shall confine my discussion to image-simulations.
- [3] For discussion of concretization, I refer to the writings of Roman Ingarden (1973) and Wolfgang Iser (1976).

vitalization refers to the sense of aliveness or vitality we ascribe to the fictional world as the result of the reader's projection of her own bodily feeling into the literary work. Although the reader might reinterpret an SVM process as something that belongs to the fictional world, I suggest that this projection carries with it the reader's own sense of liveliness that is associated with one's own SVM system. Thus, through reinterpretation the fictional world might achieve a vitality created through the projection of the reader's own body.

Furthermore, a reinterpretation might serve not only to highlight a specific moment in the text but also to maintain the ongoing illusion of the fictional reality by a shorthand system that consists of a quick, occasional reference to something bodily felt. Described in this way, reinterpretation might be illuminated by the provocative hypothesis articulated by O'Regan and Noë (2002): that visual perception functions not as a passive, *continuous* view onto the world but as an active, motor-driven *sampling* of the external world that is interpreted by the subject to constitute a sensory-rich representation of the whole. By analogy with their model, a reinterpretation might function quickly and effectively to replenish the reader's imaginative construction of the fictional world by providing discontinuous moments of (*reinterpreted*) sensory registry that confirm an illusory grasp of a whole, perceptually-rich fictional world.

A final reason that a reader might produce a reinterpretation is that it can work effectively with poetic language that does not depict any kind of realistic object or activity and that it might also be an effective means of registering textual rhythms and other formal features and integrating them back into the literary work with some kind of meaning or emotion. Our belief that we *lose* our bodies in reading may very well reflect the fact that we have reinterpreted them as non-bodily — as part of the verbal reality.

That simulation and reinterpretation can only be roughly distinguished might be illustrated in a fictional account of a character reaching to pet a dog. Thus far I have characterized simulation as a kind of resemblance and reinterpretation as more of an arbitrary or abstract relation. On the one hand, a reader's simulation of a character's reaching gesture might include activations of the reader's muscular systems that stop short of final motor action, and the reader might experience this as a motor image. As Jeannerod points out, motor images can become conscious under circumstances where one's unconscious preparations to perform a motor action are frustrated (1994, p. 190). When the motor action is executed without a hitch, the motor image never rises to the level of consciousness.

However, suppose we consider an earlier stage in this very same step-by-step process of motor activation — not the almost-complete activation but one that consists in only a very low level pattern of muscular activity. Indeed, the pattern and level of activation might be so incomplete that it could constitute the starting point for many different kinds of final motor responses, not just those oriented towards the specific action of reaching. One might ask if this constitutes a simulation. Does it *resemble* the body state of the fictional character, like a simulation, or does it bear an *abstract relation* to the character's body state, like a reinterpretation? This is a long standing conceptual problem with the notion of

iconicity, namely, how to maintain the notion of resemblance if all signifiers can be understood to bear *some* likeness to what they signify. I suggest, therefore, that while we cannot provide a strict definition of a simulation and a reinterpretation, we can use these two concepts as research guides to explore the bodily production of meaning and emotion.

Reading Calvino

At this point, a textual example might flesh out the reinterpretation proposal. My text is an intriguing short story by Italo Calvino, 'The Form of Space' (1968). Note that the *reader* whom I discuss throughout this paper is based largely on my own responses to literary texts and is not intended to apply to everyone. I shall elaborate upon the question of the reader at the close of this paper.

Calvino's story opens with a scientific assertion about gravity and this follows:

To fall in the void as I fell: none of you knows what that means. For you, to fall means to plunge perhaps from the twenty-sixth floor of a skyscraper, or from an airplane which breaks down in flight: to fall headlong, grope in the air a moment, and then the Earth is immediately there, and you get a big bump. But I'm talking about the time when there wasn't any Earth underneath or anything else solid, not even a celestial body in the distance capable of attracting you into its orbit. You simply fell, indefinitely, for an indefinite length of time. I went down into the void, to the absolute bottom conceivable, and once there I saw that the extreme limit must have been much, much father below, very remote, and I went on falling, to reach it. Since there were no reference points, I had no idea whether my fall was fast or slow (p.115).⁴

The narrator's claims pose the reader with a dilemma, for the unfamiliarity of the setting encourages the reader to understand the experience through the use of her own bodily experiences, yet the text explains that such analogies are inadequate — no one knows what it is like to fall in this manner. The reader, caught up by the challenge and aroused, is caught paradoxically trying to use all of her imaginative resources but told they will not do: If she were forming a simulation, the reader would be generating mental imagery of the fall, which might consist of visual or proprioceptive images. If she were forming a reinterpretation, I conjecture that she might become attentive to her own breathing, as I will discuss shortly.

Refining his description of place and time, 'I'm talking about the time when there wasn't any Earth underneath,' the narrator endows the Void with materiality created by the characters' state of falling: 'You simply fell, indefinitely, for an indefinite length of time.' The sentence is constructed to emphasize the notion of a prolonged falling: 'You simply fell' is isolated by a comma. Furthermore, the word *indefinitely*, pocketed in between commas, interrupts the flow of the

[4] Calvino's text continues: 'Now that I think about it, there weren't even any proofs that I was really falling: perhaps I had always remained immobile in the same place, or I was moving in an upward direction; since there was no above or below these were only nominal questions and so I might just as well go on thinking I was falling, as I was naturally led to think.' (p.115).

sentence, creating a pause, which reinforces the idea of a temporally extended falling. Indeed, references to falling continue throughout the narrative, like a background refrain: 'I continued to fall, constantly peering into the depth of space to see if anything heralded an immediate or future change in our condition' (p.117). While the reader attends to the specifics of the narrative as it progresses, she also senses, in the background of her consciousness, a sense of ongoing downward motion. She does not visualize anything moving downward but experiences, what I shall call, inadequately, a faint bodily feeling of falling. Faint, downward, movement.

Admittedly, the vestibular system, devoted to the maintenance of uprightiness, might conceivably be involved in the reader's experience as described, insofar as alterations in its ordinary functioning can produce the sense of imbalances in our postural sense, dizziness, a sense of leaning rather than uprightiness. However, I shall not pursue this potential line of explanation because it is not a particularly apt way of describing the *feel* of the phenomenon, as further description will show, but, more importantly, my purpose is to posit and define the experience as a reinterpretation.

Reinterpreting Calvino

I propose, then, to consider breathing as the likely candidate for a SVM reinterpretation, as the anthropology of breath testifies to its semiotic richness, which reflects its biological importance and its capacity to arouse primitive emotional systems of response. In many cultures breathing is regarded as an activity of high emotional and spiritual significance, where the intake and release of air is thought to have a transformative quality. The ancient Hebrews used the same word for both spirit and wind, the Navajos linked the notions of awareness and air, and the Buddhists conceived of the Chi as an interior, spiritual breath (Abram, 1996). Furthermore, psychodynamic theories like Bioenergetics and the Feldenkrais method all conceive of one's breathing as a conduit for emotion and consciousness (Esrock, 2001).

Take the reader's rhythmic process of inhalation and exhalation. This process affords the subject a SVM awareness of what a neurologist would describe as sensations of muscular movement and light touch (e.g., air moving over mucus membranes). I suggest that these experiences of breathing might be reinterpreted by the reader as being oriented up and down (vertically), although the reader has to ignore or reconceive aspects of the breathing process to accommodate this interpretation. To some extent, the breathing process might be felt to have a verticality due to our physiology. During inhalation the diaphragm contracts and moves *downward*, enlarging the thoracic cavity. Air is drawn in through the nose or mouth and *down* through the throat and into the lungs. In exhalation the process is reversed and the same things move upward, leading to vertically oriented movements. Although the reader's sense of verticality thus has some physiological basis, physiology alone is not determinative. The expansion and contraction of the thoracic cavity are not, strictly speaking, movements involving vertical

direction, for the entire cavity expands outwards and then contracts inwards. Similarly, the movement of air from the back of the throat to the nose involves more of a horizontal than a vertical motion. These physiological components, of which one might become aware, are not strictly vertical. Furthermore, Calvino's text describes downward falling through space, and yet breathing produces an upward motion within the body as well as a downward motion.

For the reader to experience a sense of downwardness that draws upon actual, on-line bodily experience, the reader cannot simply become aware of *everything* that happens during breathing. As noted above, breathing is not entirely vertical, and breathing has up as well as down motion. Rather, the reader *selectively uses* various characteristics of breathing to construct a feeling of downward motion. This selective awareness of bodily experience might be understood as a use of bodily affordances. These are potentialities — bodily experiences that might become conscious to the reader.⁵ In this case, the reader might reinterpret both inhaling and exhaling as a downward motion. Alternatively, she might focus only on the exhalation component to augment her sense of a downward movement. In both cases, the reader would be selectively using her bodily experiences to create a sense of falling. This sense of downwardness might not only occur as specific moments when alluded to by the text but as an on-going, low-level background awareness, which might be created by flashing the spotlight of attention quickly and periodically on the reader's reinterpreted body.

The reader's downward experience is amplified by the superimposition of another reinterpretation, in this case, something that has neither upward nor downward dimensions. It is a pulsing beat, which gives the reader's experience of downward motion a kind of rhythmic pulse.⁶ These are not the kind of beats that are created by verbal metre, for Calvino's text is not constituted along metrical lines. Rather, these faint but steady beats are the reader's own pulse. Beating with a rhythmic frequency, the pulse accents the reader's sense of downwardness, making the falling more concrete, that is, more discernable and more regular, and this corresponds with the character's claims that the falling is barely recognizable but constant.

But it is not only the reader's reinterpretation of breathing and pulse that create her experience of Calvino's world. What the reader also transfers to the fiction through her consciousness of breath and pulse is an accompanying sense of vitality, which arises from the reader's own bodily materiality, the sense that the reader has of her own SVM processes. Thus, when reinterpreting our SVM systems, we bring our own bodily materiality to the fiction, creating the substance of fictional space itself — a falling downwardness — from the reader's body.

[5] At this point I shall not further characterize the kind of consciousness involved in reinterpretation. Terms like subconsciousness, unconsciousness, or implicit consciousness carry with them specific theories of mind and epistemologies whose application to the hypothesis I am not yet in a position to evaluate. For purposes of laying out a research trajectory, I believe it suffices to speak broadly of *consciousness*.

[6] One can feel a pulse that is located at the wrists, the temples, the throat, and other sites within the body.

Modelling Reinterpretation

Although I have previously considered the benefits of reinterpretation, it remains still to explain why the process begins. Simply put, why would readers waste time and mental resources by attending to their bodies if they were really interested in a poem or novel? I suggest that if we think of reading as passive, as is subtly conveyed in the much used phrase *reader response*, the reasons to reinterpret might appear rather thin. However, if we think of the reader as the actor and mover in the larger situation and the text as an object constituted by its affordances, or opportunities, that permit the reader to engage in some kind of desired encounter, then the reasons for reinterpretation will be more comprehensible. Whether our active engagement with the textual world is motivated by the primitive emotions instigating play, exploratory behaviour, or social attachment to the reality of the fiction (Panksepp, 1998) or involves a regression to developmentally primitive state of pleasure seeking, we might conceive of the reader as moved to engage in some kind of motor action that brings about fulfillment of his textually-focused desires for interactions with the textual object. In recent decades psychologists and literary scholars have begun to examine the role that diverse kinds of emotions play in guiding the reading experience at different levels of processing (Kneepens & Zwaan, 1994; Oatley, 1999; Miall and Kuiken, 2002).

This desired interaction, an approach behaviour, would be targeted to some aspect of the fictional world or formal feature of the language. And while this does not demand the reader imagine the fictional world through all of the sensory modalities that one brings to real life, I suggest that the desire to approach the fictional construction would involve, for many readers, a desire for sensory knowledge and experience. This might be understood to constitute broad, overarching motive that might reinforce other, more specific goals and desires that help direct the reader's attention and guide behaviour.

The proposal of reinterpretation might be productively framed within the Global workspace theory of Baars (2002; Baars & Franklin, 2003), according to which the brain is understood as a set of unconscious distributed, specialized networks. These diverse networks include, for example, those responsible for the comprehension of semantics and syntax, as well as those of somatosensory system that detect surface texture and those of the visceral system that recognize exhalation of breath. Although such networks would operate unconsciously or on the fringe of consciousness as discrete and independent systems and subsystems, many of them could be called into action and integrated with one another when they are brought into consciousness through the means of an attentional spotlight. The foci of this selective attention would be determined by specific *motives and emotions* which, in this case, consist of the emotionally directed goals described above, such as play, exploratory behaviour, social attachment, and/or regressive pleasure seeking. These motives and emotions, which shape the actions of the supervening executive function, would change as the

reinterpretation process progresses, feeding backward new motivators and emotions that are used to direct the attentional system.

In reading one has numerous processes operating in parallel beneath the threshold of consciousness, which are brought into consciousness by a limited capacity attentional selection, whose limitations serve as a kind of bottleneck for consciousness, giving it a coherent and sequential shape. There are two possible ways to describe SVM reinterpretation within this model: (a) the reader's attentional spotlight might bring simultaneously into consciousness bodily and textual imagery from systems that would otherwise function independently or (b) the attentional spotlight might shift rapidly between these bodily states and textual features, creating for the reader an impression that both are simultaneously in the spotlight. Once in consciousness, the reinterpreted content would then be broadcast to the entire bodily system, which would, in turn, effect the construction of new motives and emotions that direct subsequent action.

Granting the use of selective attention to bring the reader's body and text into consciousness, a question remains as to how they converge and become *confused* with one another. In other words, how does the body become part of the fiction? In considering this, I would note that people make all kinds of confusions in sensory judgments. We can twist up our own fingers in such a way that we become confused as to how to move the finger at which we are looking. Ramachandran recounts various experiments about such confusions that involve dummy arms connected to human subjects. When positioned in such a way that the human subjects cannot view their own hand and arm but instead view the dummy unit in the same place that theirs should be and their own (hidden) hand is tactilely stimulated at the same time the (perceived) dummy hand is stimulated, the subjects feel as if their own bodily feeling passes into the dummy hand (Ramachandran & Blakeslee, 1998). The argument about why people make such confusions has to do with the brain's strategy for deciding what kinds of different sensory information pertain to the same external object — one's own hand. When diverse modes of sensory stimuli occur in the *same location* and/or in the same *temporal pattern*, the brain tends to link them, interpreting both to refer to the same external object. With the dummy, the brain correlates sight and touch.

In the case of a reinterpretation, the situation might be analogous, though it would not combine, strictly speaking, two different sensory perceptions. With the reinterpretation, the reader would have the bodily experience of the SVM systems and the experience of the fictional object. Nonetheless, the same factors of location and temporality might assist in creating the reinterpretation effect — at least under description (a) of reinterpretation. In this case, both the reader's body and the fictional object might appear concurrently — at the same time — in the integrating spotlight of attention.

Though we might accept the possibility of a correlation between the two components of the reinterpretation, a question still remains as to what guides reinterpretations. With simulations there is a clearly motivated relationship between a bodily response and a textual correlate: the fictional character squeezes an orange and the reader creates a motor image of squeezing an orange.

When the bodily experience is less directly correlated with the textual stimuli, the reason why a reader reinterprets in one way rather than another is not obvious. Why should breathing in and out be selected for reinterpretation as a textual correlate to *falling through space*? One line of argumentation might be hitched to Johnson and Lakoff's thesis that all our linguistic and conceptual categories are based upon universal, primitive bodily systems (e.g., Johnson, 1987; Lakoff, 1987). This would at least locate a bodily architecture within language and conceptual thought, even though it could not answer the question as to why *a particular SVM* process is reinterpreted. In effect, however helpful the thesis about the relation of body and language, the process of reinterpretation is not adequately explained by it nor does it require it as an explanatory premise.

For insight into the particular linkages we make between words and bodily sensations, I refer to the investigations of Ivan Fónagy (1988) and others into why people across the globe tend to endow certain speech sounds with specific metaphorical meanings, which may be visual, tactile, or even moral. Why, for example, is the sound *m* said to be sweeter than the sound *t* and why is *u* (*oo*) darker than *i* (*ee*)? Intending to open up the problem rather than providing definitive solutions, Fónagy suggests that what motivates these metaphors is related primarily to the auditory or physiological ('articulatory, muscular, kinesic') qualities of the sound, to the social functions served by sounds, and to 'preconscious and unconscious fantasies', which are condensed within the sound (p.118).⁷

Similar categories might be applied to the reader's bodily responses. Physiological qualities of SVM responses might be correlated to verbal texts. These would include those discussed by Fónagy, the 'articulatory, muscular, kinesic' qualities of the sound, but extend beyond them to other components of the somato-viscero system, such as pulse and bodily warmth. Many somatic and visceral experiences would be thus *motivated* on the basis of some relationship to the textual correlate. The moving air of breathing would be analogous to the character's own feeling of wind against the body when falling through space; the sharp popping of a plosive consonant would be reinterpreted as a character's bump against the earth.

The motivations might be even more indirect. Some can be explained by reference to Daniel Stern's notion of affective attunement (1985), which occurs when an adult responds to an infant's actions that occur in one sensory modality by initiating a parallel form of behaviour but in a different sensory modality. Used by the infant as a means of forming a concept of the self and the other, attunement involves the 'performance of behaviors that express the quality of feeling of a shared affect state without imitating the exact behavioral expression of the inner state' (p. 142). For example, the infant throws her hands up repeatedly, and the adult repeatedly vocalizes in the same rhythm. What makes the behaviours parallel and thereby communicates a shared affect state to the infant is that the two distinctive sensory modalities share *amodal* qualities, such as intensity, temporal

[7] Fónagy also suggest that these metaphors are based on the social functions of the sounds but devotes little attention to this factor.

beat, rhythm, duration, and shape. By use of amodal qualities, such diverse phenomena as colours, gestures, and sounds can be understood to share common structures.⁸

I suggest that these amodal qualities might be the basis on which a reader reinterprets her body to correspond to some component of a literary text. For example, a reader might become conscious of his bodily pulse, reinterpreting it, without modification, as corresponding to a rainy fictional landscape or to the steady beat of cars passing under a bridge. The pattern of the pulse might become, via amodal translation, an entity or nuance within the fictional world. It might also be possible to produce these amodally motivated reinterpretations by attending selectively to one's SVM sensations. We saw this kind of selective attention at work in the reinterpretation of breathing, as it required that certain physiological aspects of inhalation and exhalation be ignored or reconceived to create a downward direction. Affective attunement to the literary text might demonstrate the emotionally-motivated, active, and productive nature of reinterpretation.

Conclusion: The Reader

In closing, the final question pertains to the application of this proposed notion of reinterpretation: Who reinterprets? Judging from my own interviews with students and colleagues and from the usefulness of body perception questionnaires that measure such features as autonomic nervous system reactivity and other variables (Porges, 1993), I suggest that people have different levels of awareness of SVM processes and different abilities and propensities to use it. Indeed, people use SVM imagery for such activities as sports, music, meditation, and art. Biofeedback therapies also testify to the differences in levels of SVM awareness and our ability to alter our own bodily processes. On this basis, I would describe reinterpretation as kind of procedural knowledge — a performance ability of which we are generally unaware. Just as the ability and disposition to visualize was studied in previous decades (Esrock, 1994), so too, I suggest that individual differences in reinterpretations should be investigated as they pertain to *trained* readers and writers, as well as the more general classification of *competent* readers, which constitute the subjects of most reading experiments.⁹ We may find that competent readers, as a whole, do not reinterpret as much as those who are attuned to the subtleties of literature and/or who are familiar with the text. Though the majority of readers might not use their bodily awareness to enhance the experience of reading, I suggest that further investigation of the reinterpretation hypothesis and of our cultural assumptions about reading strategies might

[8] I use the term *amodal* in two contexts in this article: the current one pertains to non-sensorily specific qualities that can be shared among sensory modalities, while the other characterized models of memory storage and retrieval that are abstract.

[9] That our abilities to reinterpret can be trained and dispositions to do so influenced by our culture is not inconsistent, however, with the claim that such bodily experiences constitute the foundations of our interaction with the world, as is argued in motor theories of perception (Newton, 1996).

lead to a better understanding of literary responsiveness and to more effective educational practices.

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