

**IMAGERY, AFFECT, AND THE EMBODIED MIND: IMPLICATIONS FOR
READING AND RESPONDING TO LITERATURE**

A Dissertation

by

KAREN A. KRASNY

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

December 2004

Major Subject: Curriculum & Instruction

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ABSTRACT

Imagery, Affect and the Embodied Mind: Implications for Reading and Responding to
Literature. (December 2004)

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Since Plato first banished poets from his Republic, the relationship between the aesthetic and moral value of literature has been subject to philosophical, critical, and pedagogical debate. In this philosophical investigation, I sought to explain how the evocation of the senses during literary transactions shapes the phenomenal experience of the reader. Recent developments in neuroscience (Damasio, 1999, 2003; Edelman, 1992) provide strong evidence in support of embodied theories of cognition in which imagery and affect play a central role. The purposes of this philosophical investigation were to describe the structure and function of imagery and affect in the cognitive act of reading, to provide a detailed account of how we exercise our capacity for imaginative thought in order to achieve literal, inferential, and critical comprehension, and to explore the implications of an embodied mind for reading and responding to literary texts. The investigation yielded a critical review of contemporary theories of reading (Kintsch, 1998; Rumelhart, 1977; Sadoski & Paivio, 2001) to examine their ability to explain the phenomena associated with the literary experience. Dual coding theory (Sadoski & Paivio, 2001) which maintains an empirical and embodied view of the mind was shown to have considerable theoretical advantages over rationalist computational theories of

cognition in explaining phenomena associated with reading and responding to literary texts. A neurobiological account of consciousness provides support for the idea that literature can engage readers imaginatively in the process moral deliberation (Dewey, 1932/1985). In addition, I concluded that considerable evidence exists to suggest that somatic and visceral changes experienced as a result of undergoing the text can potentially incite individual and social change.

For Peter and our sons, Jonathan and Robert

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I grew up in a small house littered from one end to the other with books and music. I have an overwhelming sense of comfort in spaces that define someone's passion and have never seen them as excesses. I am grateful to those who have let me dwell in their spaces, made me feel at home, and shared their passions so that I might pursue mine. Patrick Slattery's steadfast commitment to seeing me through the completion of this dissertation began four years ago as I began a master's program at the University of Manitoba. He has stood by me at every step giving selflessly of his time to be both constant guide and devoted friend. He is responsible for awakening in me a passion for philosophy and confirming my belief that teaching is an intentional act about which we should *feel* deeply. It has been one of my life's greatest pleasures to watch how Patrick's intelligent and passionate dedication to social justice has served as an inspiration to so many. Mark Sadoski has enabled me to study the phenomenology of reading with rigor and depth. I am grateful for his careful reading of this text and his critical suggestions. To him, I owe much of my historical and philosophical understanding of the reading field. I would also like to acknowledge Cathleen Loving and Melanie Hawthorne for their constant encouragement and for including me in critical conversations about theory and practice related to their respective fields of scientific inquiry and comparative literature. I also wish to thank Pam Matthews for her thoughtful review of my proposal.

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CHAPTER I

INTRODUCTION: THE RELATIONSHIP BETWEEN THE AESTHETIC AND MORAL VALUE OF LITERATURE

If I am to believe literature—the best and the worst too—no voice can compete with the voice of the senses. What is one to believe?

-Colette, *The Vagabond*

Since Plato first banished poets from his Republic, the relationship between the aesthetic and moral value of literature has been subject to philosophical, critical, and pedagogical debate. Was Plato correct in assuming that the literary experience could evoke the persuasive power of the senses and alter the moral values of individuals and society? What exactly is the structure and function of imagery and affect in literary response? In this investigation, I look for answers to these centuries-old questions in light of what we are presently learning about imagery and affect as manifestations of an embodied mind and the biological basis for moral and ethical conduct.

During the sixteenth century, Sidney championed poetry on the grounds that it reflected the human potential for allegorical imagination (Bogdan, 1992). The idea of poetry as allegory implied that author and reader share a mutual understanding of poetry as a verbal representation of reality. Contrary to Plato's recognition that poetry can both reinforce and subvert prevailing moral values, Sidney upheld the Renaissance belief that virtue is the ultimate end of all knowledge. Accordingly, Sidney claimed that poetry naturally rallied human emotion and imagination in the pursuit of good. Two centuries later, Shelley in *Defence of Poetry* (1821/1965) rejected the justification of poetry as

This dissertation follows the style and format of *Reading Research Quarterly*.

allegory in favor of poetry's capacity to engage the metaphorical imagination (Bogdan, 1992). In his view, poetry cannot mirror reality and this is precisely why it is of moral value. Anticipating the meliorism in Dewey's aesthetics and the claim made by contemporary educational philosopher Maxine Greene (1978) that the arts have the power to transform through "wide-awakeness" (p. 43), Shelley (1821/1965) writes that poetry "awakens and enlarges the mind itself by rendering the receptacle of a thousand unapprehended combinations of thought" (pp. 39-40). Although Shelley saw Plato's prototype as "the Poet's idealized beloved" (O'Connor, 2002, p. xxii), he justifies poetry on the same basis that Plato grew wary of it—the recognition that poetry could *both* reinforce social values and incite social change. Regardless of the ideological viewpoint held by philosopher, critic, or pedagogue, any discussion of the moral value of literature appears to be foregrounded in the human capacity to imagine.

Imagery, Affect, and the Embodied Mind

Sadoski (1992) defines imagination as the "normal, essentially human, mindful activity that we engage in from moment to moment" as "we manipulate parts of existing images into new combinations and/or when we enrich images with affective associations" (p. 266). Similarly, Dewey (1934/1987) describes imagination as "the gateway through which these meanings [derived from past experience] can find their way into a present interaction or rather...the conscious adjustment of the new and the old..." (p. 276). A traditional Romantic view of imagination as 'flights of fancy' ensured that imagination has been seen as purely subjective and therefore having little or no direct relevance to the human capacity for reason (Fesmire, 1999). Yet as Dewey (1916/1980) contends, "The imagination is as much a normal and integral part of human activity as is muscular

movement” (p. 245). According to Dewey (1934/1987) “all *conscious* experience has of necessity some degree of imaginative quality” (p. 276). Arguably, from a pragmatist perspective, the most important function of imagination is that it allows us to internalize a situation according to past experiences and act in the present in anticipation of future possibilities.

Experience in Dewey’s (1934/1987) view is also emotional and emotions are not private but “are attached to events and objects in their movement” (p. 48). He claims that emotions are qualities of an experience and are not separate from the experience itself. They emerge in the relationship between organism and object as in the intimate relationship between reader and text. As Dewey (1934/1987) explains:

The intimate nature of emotion is manifested in the experience of one watching a play on a stage or reading a novel. It attends the development of a plot; and a plot requires a stage, a space wherein to develop and time in which to unfold.

Experience is emotional but there are no separate things called emotions in it.”
(p. 48)

Recent developments in cognitive science provide us with a neurobiological account of an embodied mind that supports the intentionality in Dewey’s emotionally wrought experience. Damasio (1999, 2003) describes how emotions play out in the theatre of the body as reactions to momentary structural changes. The brain constructs maps of these changes to record sensory images that are necessary to human survival. At the most basic level, emotions serve a regulatory function to maintain the health of the organism. One touches a hot iron by accident and one quickly jerks away one’s hand to avoid pain. In situations demanding a more complex appraisal, emotions include drives

and motivations that give rise to feelings and the formation of images. Damasio (2003) makes a functional distinction between emotions and feelings but qualifies this distinction by asserting that emotions and feelings are so intimately related in the continuous process of affect that we tend to think of them as a single mental event. In Damasio's account of body and emotion, feelings are hidden images, the mental representation of emotional responses that become the experiential source of our imagination.

Mental imagery is the cornerstone of Paivio's (1986, 1991) dual coding theory. Overwhelming neurobiological evidence supports the contention in dual coding theory that the brain maintains functionally independent verbal- and nonverbal-representational and processing systems. In other words, different parts of the brain are specialized for processing stimulus information verbally and nonverbally. Whereas, Damasio (2003) posits that feelings are mental images of emotions, dual coding theory maintains that the nonverbal cognitive reactions of imagery and affect are correlated, that is to say that they are related but nevertheless, two distinctly separate phenomena. According to Paivio (1986, 1991), affective and emotional reactions would be expected to accompany other nonverbal cognitive reactions such as imagery. What emotions are theorized to be is controversial in psychology. Defining the biological relationship between affect and cognition is central to establishing a theory of reader response based on the embodiment of the mind and to understanding how the arousal of images and emotions during the act of reading might contribute to complex systems of ethical behaviors. In this regard, understanding the structure and function of imagery and affect in psychological and philosophical conceptualizations of the mind allows us to explore in greater detail the

extent to which literature might prove a “gateway” to imagination. In Deweyan terms, we may come to understand how literature provides us with “a stage, a space wherein to develop and time in which to unfold” (Dewey, 1934/1987, p. 48) in order to integrate life’s drama and envision enriched possibilities.

To Dewey, thinking *is* imagining and imagination is the source of moral conduct. In *Defence of Poetry*, Percy Bysshe Shelley (1821/1965) writes, “A man¹ to be greatly good, must imagine intensely and comprehensively; he must put himself in the place of another and of many others; the pains and pleasures of his species must become his own. The great instrument of moral good is the imagination...” (p. 40). In his discussion of novelistic discourse, Bakhtin (1981) details the ability of readers and writers to imaginatively project themselves into the role of the other to establish the acts of reading and writing as intersubjective collaborations. The interlocutory relationship among readers, writers, and texts underlies the current social epistemic movement in language and literacy scholarship (Bizzell, 1986; Clark, 1990; LeFevre, 1987). In other words, as writers compose, they are able to assume the role of an imagined audience, and conversely, during the act of reading, readers are imaginatively engaged in writing their own subtext. Reading in this sense becomes an act of aesthetic intersubjectivity that depends on “the cognitive processes by which images, feelings, and motives are converted to language by an author and back into images, feelings, and motives by...readers” (Sadoski, 1992, p. 273). In sum, imagination establishes the literary text as both the object of the reader’s emotional intentionality and the formal structure to convey the writer’s expressive content.

¹ When citing the works of others, I will maintain the gender bias language used in the original.

Neural modeling (Damasio, 1999, 2003; Edelman, 1992; Narayanan, N., 1993, Narayanan, S., 1997) and theories of cognition (Barsalou, 1999; Johnson, 1993; Kosslyn, 1980, 1994; Lakoff & Johnson, 1999; Paivio, 1971, 1986, 1991) that emphasize embodied experience as the basis for knowledge and reason are useful in explaining the pervasive presence of imagination in both thought and language. Cognition is central to all forms of human activity and therefore it can be argued that any theory of reading not grounded in a general theory of cognition will eventually perish. Advances in neuroscience that help elucidate the cognitive role of images and emotions suggest that the separations of emotional and critical responses to literature implicit in Frye's (1963) educated imagination and the polarity defining Rosenblatt's (1978) aesthetic and efferent continuum are no longer tenable. It is my intention to establish imagination as the critical point at which various perspectives from philosophy, cognitive science, literary theory, and reader response converge to mend the Cartesian split between the cognitive and the affective domains of reading. The act of reading literary texts amounts to nothing less than "what happens when varied materials of sense quality, emotion, and meaning come together in a union that marks a new birth in the world" (Dewey, 1934/1987, p. 272).

Statement of the Problem

Eagleton (1990) claims, "Aesthetics is born as a discourse of the body" (p. 13). Presently, we are witnessing a renewed interest in the empirical and physiological basis for rational thought (Damasio, 1994, 1999, 2003; Johnson, 1993; Lakoff & Johnson, 1999; Nussbaum, 2001; Paivio, 1971, 1986, 1991). Within the field of reading, this has resulted in the challenge to explore how human perception and sensation provide the experiential stuff used to imaginatively respond to and make meaning from literary texts

(Bogdan, 1992; Eagleton, 1990; Nussbaum, 2001; Sadoski & Paivio, 2001; Turner, 1996). From such a perspective, the dichotomies of mind and body and of self and world so entrenched in Western philosophical thought are seen as limitations toward developing a more comprehensive understanding of the mental processes used in transactions with literary texts. A renewed emphasis on perceptual experience foregrounds the possibility that language evolved in the service of mental imagery. How does imagination function in ways to organize and make meaning of external stimuli as humans interact within their environment and as members of a society? Consequently, what role does this imaginative capacity to reconfigure and transform biophysical events play as humans interact with literary texts?

The dominance of behaviorist psychology during the first half of the twentieth century served to devalue mental imagery as a legitimate research pursuit. In 1913, Watson launched the behaviorist movement in American psychology with a “manifesto” that refuted the existence of mental imagery and advanced what continues to be referred to as the ‘imageless thought controversy.’ He denounced mental imagery as being unscientific and somewhat akin to “medieval” notions of immortality grounded in religious beliefs bordering on “old wives tales” (Watson, 1930). While most behaviorists were not as vehement in their denial of the existence of mental imagery, the prevalence of the behaviorist view may have contributed to the inherent assumption in several interactive theories of reading comprehension (Kintsch, 1988, 1998; Rumelhart, 1977; van Dijk and Kintsch, 1983) that abstract propositional representations are antecedent to the formation of images, if in fact the formation of images is accounted for at all. Furthermore, in a recently published volume of research featuring theoretical models and

empirical studies of the construction of mental representations during reading (van Oostendorp & Goldman, 1999), the words *image*, *imagery*, and *imagination* are conspicuously missing from the subject index.

Since the Western emergence of Vygotsky's (1962, 1978) writings, the idea that thought is covert speech has sustained the influence of social constructivist theory on reading instruction throughout the final decades of the twentieth century (Clay & Cazden, 1990; Goodman & Goodman, 1990; Moll, 1990). At first glance, Vygotsky's (1978) contention that everything within the individual's conceptual horizon appears first on the inter-psychological plane before it appears on the intra-psychological plane appears to be fairly consistent with the conceptualization of thought as the imaginative reconfiguration of our former perceptual experience. However, the notion that mental representations fundamental to thought are restricted to inner speech (a claim that is not entirely inconsistent with behaviorism) may have directly or indirectly served to minimize attention paid to the critical role of imagination and the formation of nonverbal mental imagery in reading research.

Significance of the Study

Informed by recent theories of embodied cognition, this study is intended to respond to the question of whether imagery and affect evoked during the act of reading can shape the moral and ethical conduct of readers. Advances in neuroscience and the new field of consciousness studies have made it possible to posit a relationship between the inner psychological processes of making meaning from literary texts and the phenomenal experience of the reader. The significance of the study lies in its potential to extend the implications of the psychological link between images and emotions to

reading and responding to literary texts. I argue that any attempt to gain a comprehensive understanding of reader's responses to literature might begin with an examination of the cognitive structure of emotions and images to advance a theory of reader response founded on the embodied mind. An integration of recent developments in cognitive science and a historical and philosophical review of the role of imagination can provide us with new insights into how readers enter into the intersubjective and collaborative production of meaning from literary texts and a chance to reevaluate several prevailing theoretical models of reading and reader response.

Research Questions

The purpose of my research is to respond to the following questions:

1. What is the central role of imagery and affect in the cognitive act of reading literary texts.
2. How do we exercise our capacity for imaginative thought to achieve literal, inferential, and critical comprehension.
3. In philosophical and psychological terms, what are the implications of the embodied mind for reading and responding to literary texts.

Method

I have adopted a philosophical approach to studying the structure and function of imagery and affect in order to elaborate upon the implications of embodied cognition for reading and responding to literary texts. This method of synthesizing ideas from a variety of theoretical perspectives to yield fresh insights has been used to investigate and revise our understanding of a wide range of educational phenomena. For example, recent educational dissertations relying on this mode of inquiry include studying the possibility

of an eschatological curriculum (Slattery, 1989), teaching and writing as body discourse (Fisanick, 2003), and the implications of studying evil in the novel for moral education (Fishbeyn, 2003). My investigation demands a constructive integration of the philosophical (Aristotle, 1968; Bakhtin, 1981; Bronowski, 1978; Buber, 1947, 1970; Dewey, 1932/1985; 1934/1987; Langer, 1942; Mead, 1934; Merleau-Ponty, 1962; Nussbaum, 2001; Plato, 1961/1980; Sartre, 1940/2004), literary (Bakhtin, 1981; Bogdan, 1992; Coleridge, 1954; Frye, 1963; Eagleton, 1990; Iser, 1978, 1980, 2000; Lodge, 2003; Rosenblatt, 1978; Shelley, 1821/1965), psychological (Damasio, 1999, 2003; Edelman, 1992; James, 1890/1981; Kosslyn, 1980, 1994; Paivio, 1971, 1986, 1991) and psycholinguistic (Johnson, 1993; Lakoff & Johnson, 1999; Turner, 1996) conceptualizations of imagination. In addition, I will be drawing on empirical studies in reading (Gambrell, 1982; Hidi & Baird, 1988; Krasny & Sadoski, 2004; Pressley, 1976; Sadoski, 1983; Sadoski, Goetz, & Kangiser, 1988; Sadoski & Quast, 1990) to support my theoretical arguments. Sadoski and Paivio's (2001) dual coding theory of reading and writing underlines the fundamental premise in my work that mental representations used in reading and writing are stored in our memory as a result of direct sensory experience. In order to illustrate how dual coding theory might account for a wider range of text processing phenomena used in reading literary texts, I will review and compare it to other models of reading (Rumelhart, 1977; Kintsch, 1988, 1998) which invoke both bottom-up and top-down processes of reading.

By way of illustrative examples, I hope to avoid the trap of making this account of reading transparent to theory yet opaque to the world of readers. I have adopted a pragmatist orientation to explore the stated purposes of the investigation by presenting

readers as active agents in the creative interplay among a number of interrelated acts. The aim is not to present an all-encompassing theory of reading but to capture much of what it is that readers actually do in transaction with literary texts and to examine how the social situatedness and the experiential uniqueness of the reader might make manifest certain behaviors. This investigation also entails an accounting of how the activation of verbal or nonverbal representations during reading can evoke affective reactions and conversely, how emotions are connected to the concrete picturing of objects and events (Damasio, 1994, 1999, 2003; Edelman, 1992; Krasny & Sadoski, 2004; Nussbaum, 2001; Paivio, 1971, 1986, 1991; Sadoski, Goetz, & Kangiser, 1988).

Scope of the Study

Central to the thesis being presented is the idea that imagination inheres in every aspect of the reading process and our ability to access both verbal and nonverbal images during reading is what allows us to render literary texts conceptually coherent. I have chosen to explicate the role of imagery and affect as they apply to each of a number of interrelated acts. Understanding reading as an *act of cognition* demands a theory that explains the psychological processes of making meaning from external stimuli. Mental imagery is fundamental to dual coding theory's capacity to account for the back and forth movement between representational, referential, and associative thought processes that enable readers to use graphic information and information from the reader's memory for the spreading activation of bottom-up and top-down processing (Sadoski & Paivio, 2001). In schema-based models of comprehension (Kintsch, 1988, 1998; Kintsch & van Dijk, 1983; Rumelhart, 1977) the construction of mental representations depends upon associative networks of abstract propositions. Comprehension is largely the result of a

series of constraints on meaning and can be arrived at computationally. In this study, I briefly describe and compare several prevailing theoretical models of reading to determine the extent to which each is consistent with the emerging evidence in neuroscience supporting embodied cognition.

The Latin verb *ruminare*—to ruminate foregrounds the idea of reading as *an embodied act*. The medieval practice of ruminative reading was based on mental imagery as text was “reheard, reseen, refelt, and reexperienced (Sadoski & Paivio, 2001, p. 19). Reading was regarded as a corporeal act—a “murmuring meditation” (p. 19) to incorporate the text into the reader’s senses. The Anglo Saxon *rædan* and the German *rathen* further capture the perceptual and empirical dimensions of reading as the act of uttering aloud or reciting inaudibly, of taking in the sense of words, and of learning by observation. In postmodernist terms, ruminative reading is described as a phenomenological and bodily experience (Grumet, 1988) allowing readers the opportunity to “explore the nooks and crannies of their psyche and look forward to the journey within” (Slattery, 1995, p. 165). The written page becomes a source of consciousness. Consciousness for Merleau-Ponty (1962) is located in the body that keeps “the visual spectacle constantly alive, it breathes life into it and sustains it inwardly, and with it forms a system” (p. 203). Turner (1996) argues that narrative imagining is nothing less than the embodiment of our evolutionary past—a “genetic endowment” (p. 25) fundamental to the recognition and execution of small spatial stories necessary for structuring perceptual and conceptual categories and the projected animation of objects and events with a disposition toward survival and a developing human mind. In order to explain the structure and function of imagery and affect, it is necessary to briefly outline

the biological evolution of human consciousness thus “[p]utting the mind back into nature” (Edelman, 1992, p. 9).

Neuroscience provides considerable support for the idea that reading is an *act of emotional intentionality*. Traditionally, the study of consciousness was a primary occupation of philosophy and psychoanalysis. Deemed too elusive for empirical study, psychology focused its energies on that which could be measured and observed as input and output. Spurred by such scientific developments as the discovery in quantum physics that an event is inseparable from its observation, understanding the specific nature of our subjective inner life began to gain importance within the field of cognitive science. Damasio (1999, 2003) describes a neurobiology of rationality in which the brain maintains a representation of what is going on in the body. He contends that the brain creates associations between body states and emotions and that the brain uses these associations to make decisions.

Nussbaum (2001) claims, “[e]motions shape the landscape of our mental and social lives” (p. 1). Relying on the work of Damasio (1994) and others (Lazarus, 1991; Oatley, 1992; Ortony, Clore & Collins, 1988), Nussbaum supports her argument that emotions provide us with a sense of how the world relates to our projects and goals. Nussbaum’s assessment of emotions is reminiscent of the underlying principle of many transactional theories of reader response in which the goals of reading are “*internal to and generated by the reader*” (Bogdan & Straw, 1990, emphasis in the original, p. 3) where actualization (Maslow, 1954) that is to say, the fulfillment of a set of needs and desires becomes the primary purposes of reading. Emotions are intentional in that they are always about something. Nussbaum asserts that emotions are value judgments and

appraisals ascribed to external objects and relate to the salience of those objects to one's important goals and projects. In reading, the literary text becomes an object of the reader's emotional intentionality. Certain features of the text involve a more intense focusing depending on the reader's emotional connections. Empirical studies investigating the relationship between mental imagery and affect in reading have demonstrated that emotions play a significant role in the concrete picturing of events (Krasny & Sadoski, 2004; Sadoski, Goetz, & Kangiser, 1988; Sadoski & Quast, 1990).

Imagination and dialogue also establish reading as an *act of aesthetic intersubjectivity*. The word 'aesthetics' is derived from the Greek *aethetes* meaning 'that which perceives' and as the etymology suggests refers to the realm of human perception and sensation. This is important in establishing that aesthetics is not an essential quality of the artifact being perceived but emerges in the act of perceiving. Dewey (1934/1987) summarized this idea as follows:

A work of art no matter how old and classic is actually, not just potentially, a work of art only when it lives in some individualized experience. As a piece of parchment, of marble, of canvas, it remains...self-identical throughout the ages. But as a work of art, it is recreated every time it is esthetically experienced (p. 117).

In reading, aesthetics emerges in the relation between author and text, text and reader, and author and reader. Bakhtin writing under the name of Volosinov (1929/1973) explains how "[e]ach person's inner world and thought has its stabilized *social audience* that comprises the environment in which reasons, motives, values, and so on are fashioned" (p. 86). Similarly, Mead (1934) describes how the direct experience of

playing a succession of roles eventually leads to the imaginative formation of the “generalized other...[t]he organized community or social group which gives to the individual his unity of self” (p. 154). Accordingly, “out of this process thought arises, i.e., conversation with one’s self, in the role of the specific other and then in the role of the generalized other” (pp. 312-314). In a similar fashion, engagement with literary texts provides the means of projecting oneself into “alternate ways of being and thinking about the world” (Greene, 1995, p. 90). Reading in an intersubjective sense can be described as the imagined completion of the act. The ethical aspect of literary engagement “is characterized by its participants’ consciousness of each other” (Clark, 1990, p. xvi). Spencer (2002) citing Eagleton (2000) asserts, “For children, reading is a dialogue with their future; their anticipations of ‘what will happen next?’ and ‘shall I be able to cope with it?’” (p. 548).

Reading as an *act of moral imagination* is grounded in the sense of community that emerges as individuals are given the opportunity to imaginatively take on the attitudes of others through engagement with literary texts. A neurobiology of rationality (Damasio, 1999, 2003) in which emotions are shown to be an integral part of cognition supports the idea that images generated during literary engagement are involved in emotional responses and critical judgments. The idea of reading as an act of moral imagination can be traced to Plato’s recognition of poetry as a rhetorically potent force in education and a perceived threat to rational thought. In the *Phaedrus*, Plato denounces writing as a violation of the soul—a forcible intrusion from without (Derrida, 1974). Paradoxically, where writing as mere image or representation led to the banishment of reading poetry and a deliberate censorship of curriculum in Plato’s (1961/1980) *Republic*,

the recognition that writing is never innocent and can subvert as well as inculcate cultural values is the very reason advanced in this thesis that engagement with a variety of literary works is necessary to a recognition of moral ambiguity (de Beauvoir, 1948; Moffett, 1988). Plato's concern about the psychological and epistemological consequences of poetry foregrounds contemporary critical problems related to censorship, justification, and response (Bogdan, 1992). For example, what is it that we *want* students to take away from the literary experience, and just as important, what do we *think* that they are taking away? Can reading Colette actually lead to promiscuity, F. Scott Fitzgerald to adultery, or Nabokov to pedophilia? Or are we to believe that the rhetorical power of literature extends only to advancing humanist ideals? Does censorship of literary works endorse Plato's assumption that literature is not for the uneducated? While reading can be an intensely personal and phenomenal experience, the individual and collective images and emotional responses generated by readers subject literature to social and cultural critique.

Limitations of the Study

In terms of accounting for the cognitive processes responsible for a range of reading phenomena, the study depends on the findings from a number of empirical studies investigating the construction of mental imagery and readers' responses to literary texts. This study is limited insofar as it is theoretically based. I do feel, however, that a synthesis of the ideas and the findings from the various works cited present sufficient cause to pursue empirical investigations of the theoretical claims advanced in this dissertation. This study also relies on the convergence of evidence within the field of cognitive science. To date, much of human consciousness remains inaccessible to empirical study. Nevertheless, neuroscience continues to investigate the plausibility of a

number of theoretical models to describe how neurobiology is linked to cognition. A number of these theoretical models provide the basis for several of the assertions made in this study.

I have limited this investigation to focusing on reading and responding to literary texts. By extending the “act of reading” to include the social and ethical functions of the literature, I have in mind an “implied reader” (Iser, 1978, p. 35). In this case, the “implied reader” described in the act of reading is one who has mastered the basics of decoding and comprehension and demonstrates the ability to think critically.

Definition of Terms

Aesthetics: That which relates to the realm of human perception and sensation. The

Greek *aisthesis* suggests that aesthetics is concerned with our sensate life together and is located in the relation between sensation and ideas (Eagleton, 1990).

Affect: The psychological domain of emotional activity (Harris & Hodges, 1995). .

Cognition: The psychological domain of intellectual activity (Harris & Hodges, 1995).

Dialogue: The conversation between two or more persons implying a reciprocal exchange between a speaking subject and an addressee.

Ethics: A branch of philosophy concerned with systems of moral behavior to evaluate right and wrong.

Imagination: The act of recombining and rearranging parts of existing mental images reproduced from sensory and perceptual experiences to generate enriched possibilities (Sadoski, 1992).

Intentionality: German philosopher Franz Brentano referred to the notion that awareness is always awareness *of* something as intentionality. Intentionality is considered an

essential property of the mind insofar as “beings with minds can refer to other beings or things; things without minds do not refer to beings or other things” (Edelman, 1992). The philosophical assumption is that thought is always about *something*. This *something* is referred to as the “intentional object.”

Intersubjectivity: The exchange of dialogic positions between speaker and addressee among interlocutors. According to Bakhtin (1981), the nature of language is intersubjective and meaning “lies between oneself and the other” (p. 293). The intersubjective utterance is shaped by the imagined response of the other resulting in what Bakhtin termed double-voiced discourse.

Mental imagery: Concrete representations of perceptual experiences stored in memory. Often referred to as “visualization,” or “seeing in the mind’s eye,” mental imagery is not a purely visual phenomenon. It includes mental representations associated with all sensory modalities—the visual, auditory, haptic, gustatory, and olfactory (Sadoski & Paivio, 2001). Mental imagery retains some of the properties of perceptual experience but as a form of experience itself it is never identical to the original.

Neuroscience: The field of science related to the study of the brain and its functions.

Perception: Sensations perceived in the body.

Phenomenology: A philosophical movement using pure description of perceptual experience as it presents itself to consciousness. The German philosopher, Edmund Husserl introduced the term “phenomenology” in 1913.

Pragmatism: First introduced to the world in 1898 by William James, pragmatism refers to a movement in American philosophy that rejected fundamental dualisms (e. g.,

mind/matter, intellect/emotion, self/others) of modern philosophy in favor of an empirical and radical view of *experience*. Other dominant features of pragmatism include (Stuhr, 2000): *fallibilism*, as it relates to the tentative nature of knowledge; *pluralism*, in its view of reality and human values; *experimental inquiry*, as a means of linking science and philosophy; *meliorism*, “the view that *human action* can improve the human condition” (p. 6); and the *social constitution of the self*. Pragmatism is closely associated with the thought of William James, Charles Sanders Peirce, Oliver Wendell Holmes, John Dewey, Jane Addams, and George Herbert Mead. Contemporary pragmatists include Richard Rorty and Hilary Putnam (Menand, 1997).

Reading: “[A] process of translating signs and symbols into meanings and incorporating the new information into existing cognitive and affective structures” (Robeck & Wallace, 1990 cited in Harris & Hodges, 1995).

Reader response: Theories of reading that focus on the active role of the reader in constructing meaning from texts. While there appears to be no single reader-response theory, it is generally agreed upon by reader-response theorists that the goals of reading are “*internal to and generated by the reader*” (Bogdan & Straw, 1990, emphasis in the original, p. 3).

CHAPTER II

A REVIEW OF LITERATURE

Introduction

Philosophy is a graveyard of 'isms.'

-Edelman, *Bright Air, Brilliant Fire*

A growing body of research explores the relationship between imagery and affect as readers respond to literary texts. Theoretical advances in neuroscience are coming closer to explaining the cognitive role of imagery and affect and Damasio (1999, 2003) goes so far as to suggest that the intimate connection between images and emotions is responsible for human consciousness and a developing sense of self. Throughout history, mental imagery and verbal processes have often been at odds in philosophy, psychology, rhetoric, and education (Sadoski & Paivio, 2001). It could be said that the epistemological and ontological tension between concrete imagery and abstract propositions could originate in the distinction between innate reason in Plato's idealism and the concrete world of experience in Aristotle's empirical philosophy. This distinction characterizes the literacy field in which competing theoretical models of reading attempt to account for how readers make meaning from visual stimuli. The following review of literature begins with a summary of the findings of recent empirical studies investigating the role of mental imagery and affect in reading and an introduction to current theoretical models of reading. It is followed by a review of recent works in cognitive science that support theories of embodied cognition and challenge the metaphysical separation between mind and body. The philosophical literature dealing

with imagination is extensive. The review concludes with a summary of selected classical and recent philosophical works included to provoke a revised understanding of the psychological processes that contribute to the phenomenal or lived-through experience of the reader.

Understanding how images are formed and operate within a general theory of cognition is essential to developing a detailed account of how imagery and affect figure prominently in the reading process and in readers' responses to literature. Recent works emerging from the field of cognitive science that hold that cognitive processes are embodied as the direct result of the body's interactions with the world are useful in explaining how the brain is able to maintain mental representations of sensate data stored as memory. Embodied cognition and the emerging field of consciousness studies prove to be the impetus for several new works of literary criticism, philosophy, and ethics discussed in this review and give cause to reexamine existing theories of reader response. At the same time, we must remember that concrete experience has long been at the heart of various philosophical traditions including Aristotle's psychology of empiricism, Spinoza's notion that "*the human mind is an idea of the human body*" (cited in Damasio, 2003, p. 12), Rousseau's educational philosophy, and British empiricism. But perhaps the idea that concrete experience forms the bedrock of consciousness and our personal system of ethics has its greatest elaboration in American pragmatism and therefore I have referred to selected writings from William James, Dewey, and Mead. Finally, any philosophical discussion of the embodied mind would be incomplete without acknowledging the significant contribution of French philosopher, Merleau-Ponty (1962), who in *Phenomenology of Perception*, examines how the body perceives a world

“‘already there’ before reflection begins” (p. vii) and creates a life world through sense-experience.

Empirical studies of imagery and affect in reading and responding to literary texts

A growing number of empirical studies provide evidence that imagery and affect are integral to the reading process and contribute to the comprehension, memory, and appreciation of literary texts. Sadoski (1983, 1985) conducted a set of two studies in which children in grades three, four, and five read stories from basal readers aloud and reported on any mental imagery experienced while reading. In the earlier of the two studies, the text was illustrated, while in the later study it was not. Sadoski found that students who read the illustrated story did not discriminate between the images of illustrations and their self-generated images. Interestingly, students who read the story without illustrations reported more images. The results from both studies demonstrated that imagery of an important or climatic event related to recall and critical comprehension as in the recognition of the story’s theme. A study by Long, Winograd, and Bridge (1989) investigating imagery reported by fifth graders during and after reading using a think-aloud strategy revealed that students reported spontaneous imagery at 60 percent of the think-aloud stops. The study identified text characteristics that appear to evoke imagery including sensory descriptions, passages containing figurative language, and key (climatic) points in the story.

Significant correlations between imagery and emotional response ratings were found in several studies (Krasny & Sadoski, 2004; Sadoski, Goetz, & Kangiser, 1988; Sadoski & Quast, 1990) using numerical ratings. In Sadoski, Goetz, and Kangiser (1988), undergraduate college students were asked to read the entire text of a short story

and then to go back and rate each paragraph for either the degree of imagery evoked, the degree of emotional response, or the degree of importance. The graphic depiction of the patterns of response for imagery, emotional response and importance predictably reflect the rising action toward a climatic point near the very end of the story, followed by a plot twist leading to a surprise conclusion. A quantitative analysis of the ratings revealed moderate to moderately high correlations between imagery and emotional response ratings.

Similarly, Krasny and Sadoski (2004) conducted a study with English/French bilingual readers enrolled in a Canadian French immersion high school using two of the three short stories used in the Sadoski, Goetz, and Kangiser (1988) study. In Krasny and Sadoski (2004), students read both stories, one in English and the other in French. Regardless of whether the students read the text in their first language (English) or their second language (French), the patterns of response were similar to those found in Sadoski, Goetz, and Kangiser (1988) for the same stories. The students in both studies also responded to a qualitative writing task in which they elaborated on the imagery experienced and feelings evoked while reading. The nature and quality of written response was consistent across languages. The linguistic demands of reading in a second language did not appear to prevent students from forming images or emotionally responding to the story. Furthermore, the findings from this study and earlier studies investigating the formation of images and evocation of affect in Chinese/English bilingual readers (Steffenson, Goetz, & Cheng, 1999) appear to support Cummins' (1979) "linguistic interdependence principle" which accounts for the transfer of cognitive and literacy-related skills across languages.

Other studies of mental imagery in reading investigate the effects of language concreteness and its capacity to evoke mental images. Recent studies of this type tend to focus on readers in transaction with content area materials such as history textbooks and news and magazine articles but nevertheless, the findings have important implications for literary reading. Sadoski, Goetz, and Fritz (1993) used historical narratives to investigate the effects of language concreteness on the familiarity, comprehensibility, degree of interest, and the immediate and delayed recall of sentences and paragraphs. Concrete and abstract passages about historical figures were selected and modified in order to enhance this distinction. The results of the study indicated that with readability controlled, concrete text was rated as more comprehensible and interesting than abstract text, but not as more familiar. In addition, concrete texts were better recalled than abstract texts, both immediately and after a period of five days. Despite the growing body of empirical evidence, many current models of reading inadequately account for the various phenomena related to the formation of imagery and affect evoked during reading. In describing reading as an act of cognition, this study will compare several interactive models of reading in order to explore the plausibility of each in light of the convergence of evidence linking imagery and affect to cognitive processes.

Theoretical Models of Reading

Reading has been described in terms of bottom-up and top-down processing. Bottom-up processes (Gough, 1972; LeBerge & Samuels, 1974) describe the reading process as proceeding in linear fashion from letter to sounds, to words, to meaning. Top-down processes reject the idea that reading occurs as the direct result of the initial perception and identification of discrete elements in a word. Early work by Kenneth

Goodman (1969) and the whole language movement brought to our attention the idea that readers possess a prior sense of what could be meaningful in the text based upon their knowledge about language and will therefore access the most productive cues necessary to make predictions about the words and their meaning.

In “Toward an Interactive Model of Reading,” Rumelhart (1977) sufficiently discounts the potential of explaining reading exclusively in term of bottom-up processing to satisfactorily account for various reading phenomena that occur when higher levels of analysis partially determine the apprehension of information at lower levels. Rumelhart (1977) and others (Kintsch, 1988, 1998; Sadoski & Paivio, 2002; van Dijk & Kintsch, 1983) have proposed models of reading which attempt to account for the spreading activation of both bottom-up and top-down processes used in reading. Rumelhart’s (1977) model describes reading as a process by which simultaneous or parallel input from multiple levels (word level, letter level, phrase level, etc.) are synthesized through a message center. Orthographic knowledge or knowledge of letters and sounds, lexical knowledge or knowledge about words, and both syntactic and semantic knowledge converge to facilitate word identification. Rumelhart’s (1977) message center is responsible for maintaining a running list of hypotheses about the nature of the simultaneous data input, for scanning the message board for the possible appearance of hypotheses relevant to knowledge sources including knowledge about features, letters, letter-clusters, lexicon, syntax, and semantics, and evaluating the goodness of hypotheses according to *a priori* frequency.

The van Dijk and Kintsch (1983) theoretical model espoused a triple coding system including verbatim text language, a propositional text base and a situation model.

This model was subsequently revised by Kintsch (1988, 1998) to resemble a two-stage construction-integration model through which prior knowledge is incorporated more directly. In *Comprehension: A Paradigm for Cognition*, Kintsch (1998) defines the construction stage as the bottom-up activation of stronger and weaker associations to, and positive and negative interconnections among, a variety of abstract mental propositions. During the subsequent integration stage, prior knowledge about words, syntax, and the world in general constrain the construction of discourse representations at all levels. Contextual priming allows readers to construct a coherent textbase as a result of integrating linguistic input with their knowledge base. While Kintsch's (1988, 1998) model includes nonverbal representations as a feature of episodic memory, both stages of the model are schema based, that is to say, they derive from abstract propositions linked to a textbase.

In *Imagery and Text: A Dual Coding Theory of Reading and Writing*, Sadoski and Paivio (2001) propose a unified theory of reading and writing based on dual coding theory of general cognition (Paivio, 1971, 1986, 1991). Dual coding theory provides us with an empirical view of reading in which the capacity for forming mental imagery derives from direct sensorimotor experience, that is to say, patterns of response to external experiences are instantiated as part of our cognitive representations. This view is shown to be consistent in many ways with the philosophical thought expressed in Dewey's aesthetic and moral theory (1916/1980, 1932/1985, 1934/1987), James' radical empiricism (1904/1976), Mead's (1934) generalized other, Merleau-Ponty's (1962) phenomenology of perception, and Lakoff and Johnson's (1999) embodied realism. Dual coding theory contends that meaning cannot occur without the activation of mental

representations that retain some of the concrete qualities of the external experiences from which they are derived.

According to Sadoski and Paivio (2001), mental representation is organized into two separate coding systems. One system specialized for language consists of basic units called logogens. For example, we develop visual representations for a variety of language units including features, letters, words, and even phrases (e.g., hockey stick). The other system specialized for nonverbal objects and events is made up of basic units called imagens. These include but are not limited to visual representations of common objects (e.g., a player or goalie stick in either wood or graphite) and these objects are often nested or contextualized (e.g., a wooden hockey stick held in the glove of the goaltender, in front of the net, on an ice rink, against boards bearing advertisements). It is important to note that to fully understand the empirical nature of dual coding theory one must recognize that mental imagery is not limited to visual images but includes mental representations associated with all sensory modalities—the visual, auditory, haptic, gustatory, and olfactory. Dual coding theory also recognizes emotional feelings and reactions as nonverbal representations that perform an important function in the construction of meaning. As a theoretical model, dual coding theory is particularly insightful in investigating the relationship between the aesthetic and moral value of literature because its explanatory potential can be extended beyond recoding and comprehension to the construction of mental models and imaginative responses to texts.

Philosophical Debate Between Abstract Ideas and Concrete Experience

Whereas theoretical models of reading beginning with abstract propositions are grounded in Plato's idealism,² the idea in dual coding theory that "all mental representations retain some of the concrete qualities of the external experience from which they derive" (Sadoski & Paivio, 2001, p. 3) has much in common with Aristotle's realism. As suggested in the introduction, Plato was skeptical of poetic images maintaining that images could not accurately represent the reality that inspired them. Plato considered poetry a dangerous force among the uneducated, who could be misled into thinking that what was being represented was true and real. In his view, poetry's power to persuade rather than instruct, lay in its potential to evoke sensations. From a Platonic perspective, sensations are an obstacle on the path toward virtuous living—"a tendency to pervert right thinking into falsehood" (Hicks, 1907/1976, p. xxxiii). While Plato conceded that sensation characterized the movement which body and soul must share, he firmly believed that true knowledge began with a thinking soul and the operations of the intellect independent from a feeling body.

Aristotle, on the other hand, believed that all knowledge derived from sense impressions and depended on making connections between abstract concepts and images as in the concept of courage and images of courageous acts. Aristotle's (1968) empiricist view of reality in *De Anima* posited concrete imagery as being fundamental to all thought processes. In his view, thought began with images which led to abstract constructions, and finally to language.

² I intend to dispute Kintsch's (1998) claim that his revised construction-integration (CI) model of comprehension using predicate-argument propositions depends on an architecture of cognition based on Aristotelian perception and experience.

Imagination in Language

In *The Origins of Knowledge and Imagination*, Bronowski (1978) describes the evolution of human language as an instrument that shapes and orders our existence. According to Bronowski, human language has evolved to function differently from animal communication in three important ways. First of all, the human capacity for imagination is evidenced in language by our ability to delay our response to another human being and separate information from emotional content. Second, our ability to foresee events is related to the “prolongation of reference” or the ability to apply language to the past, present, and future. And third, Bronowski cites internalization of language or the ability to talk to ourselves as being of great evolutionary advantage.

Decades earlier, Langer (1957) provided an evolutionary account of human language in *Philosophy in a New Key: A Study in the Symbolism of Reason, Rite, and Art*. She too, notes that language grants us the imaginative capacity to retain objects and their relations when not immediately present. According to Langer, language probably evolved from expressive voice-play associated with ritual gestures and dances. Eventually certain syllables became associated with certain actions pantomiming events that held ritual importance such as death or triumph. Rhythmic groups of syllables eventually came to be connected with particular actions or individuals. Language began as an expressive act and through long habit, fixed associations eventually led to the denotative function of language. Langer advances the idea that language evolved in the service of mental imagery to provide us with the means to name, fixate, and conceive objects (and not, as we so often believe, in the service of communication). What is

interesting from a literary point of view is that this account suggests the critical role of metaphor in the evolution of language.

Imagery, Affect, and a Neurobiology of Consciousness

In *The Feeling of What Happens: Body and Emotion in the Making of Consciousness*, Damasio (1999) explores the biological underpinnings of the mind and consciousness to demonstrate how feelings and emotions are responsible for the construction of self. In a more recent work, *Looking for Spinoza: Joy, Sorrow, and the Feeling Brain*, Damasio (2003), extends the neurobiology of consciousness to define in greater detail the affective realm of feelings and emotions and their related states. Like Spinoza, Damasio sees affect as being central to our humanity and as such, is the key to understanding how human beings might live their lives better. As it becomes clearer that imagery and affect—drives, motivations, emotions, and feelings—are integral to the reading process, the argument that literature can contribute to the moral enhancement of the principles and policies that govern public life becomes increasingly cogent.

Fundamental Western philosophical assumptions about a disembodied mind and transcendent reason are further usurped in Lakoff and Johnson's (1999) *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought*. In this groundbreaking work, Lakoff and Johnson challenge the Cartesian dualism with which we have structured our philosophical traditions regarding mind and morality, time and space, and causation. Building upon their earlier work *Metaphors We Live By* (1980), the authors provide a detailed account of how our sensorimotor experience is responsible for the conceptual metaphors we use to structure our reasoning, our experience, and our everyday language. Lakoff and Johnson (1999) state this later work focuses on the

“conflict between a priori philosophies and empirical findings in cognitive science” (p. 469). They describe an embodied realism that incorporates three major and interrelated themes: the cognitive unconscious, the embodiment of the mind, and metaphorical thought. Developments in the relatively new field of cognitive science which began in the 1970’s has revealed that most of our thought is unconscious. Lakoff and Johnson suggest that possibly as much as ninety-five percent of all thought occurs within the realm of the cognitive unconscious, and in turn, shapes and structures all conscious thought. I contend that we must look to a constructive integration of both philosophy and cognitive science to gain a more comprehensive understanding of the embodied mind, the construction of self, and the metaphysical basis of our ethics and moral judgment. Lakoff and Johnson’s (1999) embodied realism and Sadoski and Paivio’s (2001) dual coding theory share an empirical view of mind and mental abstractions grounded in concrete experience.

French neuroscientist, Changeux and French philosopher, Ricoeur (2000) argue the nature of the correspondence between neuronal and mental events from the point of view of their respective disciplines in *What Makes Us Think?: A Neuroscientist and a Philosopher Argue about Ethics, Human Nature, and the Brain*. In other words, can mental experience be identified with neuronal activity and if so, to what extent is a neurobiology of consciousness able to account for the vast richness of human experience? More specific to this discussion, what can this correspondence tell us about the phenomenology of the literary experience? While both scientist and philosopher concur that thought does not function without a physical basis, Ricoeur questions whether the self-knowledge that comes with a growing understanding of the correspondence between

structure and function achieved in the laboratory effectively captures the conditions in the social and physical world governing human existence.

Nussbaum (2001) explicitly sets forth the ethical implications of the embodied mind in *Upheavals of Thought: The Intelligence of Emotions*. Nussbaum, a distinguished professor of law and ethics at the University of Chicago, contends that there cannot be any adequate ethical theory without an adequate theory of emotions that acknowledges their cultural sources, their development from infancy, and the sometimes unpredictable way with which they operate in our daily lives. She asserts that emotions are the “the fuel that powers the psychological mechanism of a reasoning creature, they are parts, highly complex and messy parts, of this creature’s reasoning itself” (p. 3). Nussbaum demonstrates that literature deserves a place among more conventional texts of moral philosophy because the narrative dimension provides us with a cohesive means of examining our motives and emotional life. Many of her claims are consistent with the role the affective and the imaginative in Dewey’s (1916/1980, 1922/1983) moral deliberation.

Toward a Poetics of Fiction

In *Consciousness in the Novel: Connected Essays*, Lodge (2003), whose quest for a poetics of fiction first ended with his discovery of Bakhtin’s (1981) characterization of the novel as dialogic and polyphonic, revisits the question, “What does literature do and how does it do it” (p. ix). Having completed an investigation into Bakhtin’s dialogism in theories of reader response (Krasny, 2002), my journey into novelistic discourse and the dialogic imagination has taken a similar turn. Lodge’s renewed interest in addressing the age-old question concerning the function of literature arises in response to the new

interdisciplinary field of consciousness studies. Through a series of connected essays focusing on the life and works of various novelists Lodge effectively shows how literature permits us to examine the qualia of our subjective experience in the world. He points out that the persistence of Western philosophical beliefs is often implicit in literary language. Contesting the assumption of an individual and immortal soul that pre-exists human birth, Lodge argues that “to distinguish between flesh and spirit, body and soul, the material and the immaterial, the earthly and the transcendent, is to commit the fallacy of dualism” (p. 5). Lodge’s (2003) discussion of Henry James’ consciousness-centered art of fiction is particularly relevant to the idea that any moral value to be derived from literature depends on its potential to evoke the imaginative projection of oneself into the consciousness of another.

In stating his case for consciousness in the novel, Lodge (2003) relies on Watt’s (1957) classical study *The Rise of the Novel: Studies in Defoe, Richardson, and Fielding* to illustrate how the ascent of this form of narrative literature parallels innovations in philosophical thought. Watt emphasizes however, that any causal relationship between philosophical and literary innovations is fairly indirect and should be viewed as the parallel manifestations of the vast transformation of Western civilization since the Renaissance. This transformation encompasses a rejection of the unified world picture of the Middle Ages focusing instead on “a developing, but unplanned aggregate of particular individuals having particular experiences at particular times and at particular places” (p. 31). Watt is careful to point out that while modern realism assumes that “truth can be discovered by the individual through his senses” (p. 12), the view that “the external world is real, and that our senses give us a true report of it” (p. 12) has little to do

with literary realism. He suggests instead that the most important analogy linking philosophical realism to the rise of the novel in the mid-eighteenth century is the manner in which both adopt a critical and anti-traditional orientation to studying the particulars of experience and paying greater attention to semantics and “to the problem of the nature of the correspondence between words and reality” (p. 12). In “The Origins of Human Rights in the Eighteenth Century: Toward a Post-Foucaultian History of Personhood,” Hunt (2004) revisits the parallel between the appearance of the psychological novel in the mid-eighteenth century and the dramatic turn toward the development of human rights and a recognition of personhood.

In *Re-Educating the Imagination: Toward a Poetics, Politics, and Pedagogy of Literary Engagement*, Bogdan (1992) establishes the contested relationship between word and world as being at the heart of issues surrounding justification, censorship, and response. Any attempt to address these three critical issues begins with seeking the answers to the questions why literature is taught, what is taught as literature, and how is literature taught. The book is both a critique and defense of literature education as Bogdan carefully analyzes its relationship to moral values throughout the history of Western civilization. The work is a direct result of Bogdan’s (1992) ongoing preoccupation with the attempt to reconcile within the language arts curriculum, the conflicting goals “of enculturation into a collective ethos, on the one hand, and personal growth and development, on the other” (p. xxii). In 1963, the Canadian Broadcasting Corporation aired *The Educated Imagination*, a series of radio talks by Northrop Frye. Frye (1957, 1963) articulates a poetics of total form that embodies the dialectic between the intrinsic and extrinsic value of literature. His assertions often appear contradictory.

For example, Frye insists that posing the question of the social value of literature effectively relegates it to a secondary status as a form of knowledge. Alternately, Frye (1957) declares literature to be “an ethical instrument, participating in the world of civilization” (p. 349). Within the context of a number of contemporary examples drawn from literature, film, media, and her teaching experience, Bogdan (1992) problematizes the implicit dualism in Frye’s educated imagination that entails a synthesis of aesthetic engagement and critical consciousness. It is my intention to further Bogdan’s challenge to the distinction often made between aesthetic engagement and critical thinking in the language arts curriculum by taking into greater account the implications of an embodied mind and the central role of imagery and affect in exercising moral imagination.

Imagination and Moral Theory

In “Morality As Art: Dewey, Metaphor, and Moral Imagination,” Fesmire (1999) suggests that developing an understanding of the relationship between imagination and moral theory might begin not with the question of “How *ought* I to live?” but rather “How *do* human beings actually make sense of their moral experience?” In *Art and Experience*, Dewey (1934/1987) conceptualizes imagination as the extension of our immediate experience. The potential for moral thought emerges in our capacity to see present circumstances in light of past experience and in relation to projected possibilities. Perhaps Dewey’s (1922/1983) most elaborate attempt to explain the critical role of imagination and emotions in moral conduct is his aesthetic model of moral deliberation as dramatic rehearsal. Dewey contends that we execute small spatial stories or “dramas” to try out alternate solutions when faced with morally problematic situations. This imaginative process often entails adopting a different role and anticipating the reaction of

other agents involved and the possible consequences and implications of the imagined act. Dewey's view on aesthetics and moral deliberation holds renewed promise for literature studies in the language arts curriculum given the recent developments in cognitive science describing the role of metaphor and imagination outlined in Johnson's (1993) *Moral Imagination*. I am contending that the formation of imagery and the evocation of emotion during literary engagement allow readers to enter into the drama of the text to make sense of their moral experience.

Narrative thinking and the execution of small spatial stories are also at the crux of Turner's (1996) *The Literary Mind*. Turner elaborates on the principles of mind he refers to as story, projection, and parable that, as I intend to demonstrate, rely on the imaginative process of rearranging and recombining images in a literary way. Once again, I look to pragmatically oriented theories of language and existence to advance an understanding of the construction of self through concrete interactions and imaginative projection. Mead (1934) in *Mind, Self and Society*, describes how we develop a socially shared system of gestures and an abstract set of rules through the direct experience of playing a succession of roles. Continued and varied experience, both direct and vicarious, shapes our understanding of the interrelationship of these roles that combine to form the generalized other. Imagination is critical to Mead's (1964) articulation of the process of communication in which "the individual is an other before he is a self" (pp. 312). Similarly, in *I and Thou*, Buber (1970) claims, "Man becomes an I through a You" (p. 80), that is to say, the emergence of self is dependent on the individual entering into reciprocity with others. Greatly influenced by Buber's (1970) intersubjective construction of self, Bakhtin (1986) in *Speech Genres and Other Essays*, argues that

meaning in language and existence is a tripartite construction consisting of a subject, an addressee and the relation between the two. In “Discourse in the Novel,” Bakhtin (1981) extends this tripartite construction to literary transactions in which the author, the text, and the reader are interlocutors alternating between the role of the speaking subject and addressee within a dialogic exchange.

Phenomenological Approach to the Act of Reading

Any theory of reader response advancing the idea that reading is a discourse of the body must seek to understand the phenomenal experience of the reader—the sensations that shape the reader’s intentionality. Intentionality is simply the idea that all consciousness is consciousness of something. In *Phenomenology of Perception*, Merleau-Ponty (1962) recognizes that “sense-experience is a vital process” (p. 10). He argues that for centuries, science and philosophy have been misguided in their preoccupation with perception as a quasi-teleological means by which we can discover *truth in itself*. Contrary to Husserl’s phenomenological project of the constitution of flux which still adheres to the metaphysical tradition that “all contradictions can be removed...that which is indeterminate for me could become determinate for a more complete knowledge” (Merleau-Ponty, 1962, p. 54), perception for Merleau-Ponty and Dewey is never static and always partial. While phenomenological reflection seeks a pure description of perceptual experience as it presents itself to consciousness, Merleau-Ponty (1962) concedes, “Reflection can never make me stop...thinking with the cultural apparatus with which my education, my previous efforts, my personal history, have provided me” (p. 61). More importantly, while the physical manifestations of emotions are often discernible to the outside world—blushing cheeks, sweating palms, and

spontaneous facial expressions—consciousness is not. This invisibility and the fact that we rely on the use of metaphors “to make manifest the life of the mind” (Arendt, 1971, p. 31) ensures that the responses readers share are merely reflections of their psychic experience and not the experience itself.

These are important assertions to consider when re-examining the aesthetic distancing necessary to achieve Frye’s (1957, 1963) educated imagination and too, in questioning Rosenblatt’s (1978) aesthetic response as a personal lived-through experience of the text as described in *The Reader, the Text, and the Poem*. Rosenblatt (1978) distinguishes the *poem* from other types of reading as a “coming-together of reader and a text” where “the reader brings to the text his past experience and present personality” (p. 12). Rosenblatt’s aesthetic reading entails a laudable sense of Deweyan “undergoing” in which the literary engagement is seen as growth in experience. Nevertheless, we must be mindful that embodied readers consciously or unconsciously always come to the text with their “past experience and present personality” (p. 12). Rosenblatt’s transactional theory of reader response is not comprehensive enough to account for the possibility that readers can experience a text in aesthetic *and* political terms simultaneously nor does it sufficiently address the qualitative variability of response to individual literary works among individual readers. In other words, why is it that certain readers are not able to shift their attention from the referential to the more qualitative aspects of the language of the text? However, the biggest challenge to Rosenblatt’s theory arising from recently generated knowledge about the critical role of imagery and affect in human consciousness concerns her distinction between aesthetic and efferent reading in which she insists that readers perform “very different activities

during aesthetic and nonaesthetic readings” (p. 23). Merleau-Ponty’s phenomenology of perception also has important implications for challenging some of the assumptions in Iser’s (1978) phenomenological approach to reading that is based on more Husserlian traditions. Nevertheless, Iser’s (1978, 2000) conceptualization of reading as “filling in the gaps” in a “virtual text” described in *The Act of Reading: A Theory of Aesthetic Response* and *The Range of Interpretation* resembles dual coding theory’s account of how readers form images to achieve textual coherence.

Many of the works cited in support of embodied cognition assume that emotions and imagery are fundamental to navigating the world—products of an evolutionary existence that function in maintaining homeostasis. They derive from individuals in interaction with a concrete world and are necessary to the human capacity to imagine. This ability to form images and project these images on objects and events in order to interpret subsequent experience is basic to the metaphorical thinking that makes language possible. In *The Life of the Mind*, Arendt (1971) aptly describes the cognitive role of metaphor as the bridge between the inner world of sensory experience and the outer world of appearances. In Chapter III, I begin to examine how imagery and affect are central to cognition and in turn, how they operate in the process of recoding visual stimuli in the form of features, letters, words, and phrases into meaningful text.

CHAPTER III

READING AS AN ACT OF COGNITION

Introduction

What is an idea? It is an image that paints itself in my brain.

-Voltaire, cited in Edelman, *Bright Air, Brilliant Fire*

Understanding the critical role of imagery and affect in reading demands an explanation that is consistent with established theories of general cognition. Reading, like all forms of cognition, relies on the human capacity to perceive, recognize, interpret, comprehend, evaluate, organize and store in memory information received through external stimuli. We may learn to “read” pictures, “read” people’s expressions, or even feel that we can “read” someone’s mind, but for the purposes of this discussion, reading will be regarded as a specific act of cognition involving written language.

In recent years, theories explaining the cognitive act of making meaning from written language have focused on the role of the reader’s prior knowledge in comprehension, learning, and memory. A number of such theoretical models of reading derive from schema theory (Kintsch, 1988, 1998; Kintsch & van Dijk, 1978, 1983; Rumelhart, 1977) and support for schema-based models is reflected in current reading research (Anderson, 1994; Anderson & Pearson, 1984; Rumelhart, 1980; Rumelhart & Ortony, 1977). The mental processes used in schema-based models are consistent with the metaphor of the mind as a computer. Thought is abstract and rational and can be represented in much the same way as mathematical calculations using systematic universal principles. Dual coding theory provides an alternative to schema-based models

that reflects an empirical view of the mind. Unlike schema-based models, dual coding theory is premised on the idea that “all mental representations retain some of the concrete qualities of the external experiences from which they derive” (p. 3).

In this chapter, I begin by examining some of the Western metaphysical assumptions underlying computational and embodied theories of cognition. Next, I introduce schema theory as a general theory of cognition widely applied to understanding the mental processes used in reading. This is followed by an account of how comprehension is achieved in two schema-based models, Rumelhart’s (1977) parallel input model and Kintsch’s (1988, 1998) construction-integration model. These theories are discussed in terms of how adequately each can account for its purported range of reading phenomena. In the sections that follow, dual coding theory (Paivio, 1971, 1986, 1991) is presented as an embodied alternative to computational theories of cognition. I explore its extension into the literacy field (Sadoski & Paivio, 2001) in order to demonstrate how the formation of images is integral to the reading process at all levels and is necessary to accounting for a more comprehensive range of phenomena. Finally, I discuss the extent to which dual coding theory appears to be consistent with neuropsychological evidence related to the functional asymmetry of the brain.

The Nature of the Mind and Mental Imagery in Western Philosophy

Plato and the World of Ideas

For Plato, the mind is an immortal soul, the realm of all reason. The soul, however, inhabits a body that is tied to a sensory and therefore, unreliable world. Plato’s philosophy focuses on the nature of rational thought. In his *Myth of the Cave*, Plato parables the philosopher’s journey from living among the shadowy images of the world

to experiencing the renewed clarity from the realm of true ideas. Through a series of dialogues, Plato argues that the world is shaped by ideas perceivable by the mind. For example, in Plato's *Euthyphro*, Socrates argues that piety cannot be defined by concrete pious actions but rather by the ideal form or essence that makes all pious actions pious. As Plato sees it, the job of the philosopher is to seek knowledge by employing reason to discern the ultimate forms or essences that underlie perceptible things.

Plato's concern for prototypes leads to a correspondence between degrees of knowledge and degrees of Being, that is to say, we can only come to know an act of piety insofar as it conforms to all the characteristics that together must be present for an act to be truly pious. Reality for Plato is located in eternal and immutable ideas that are directly present in the mind. Plato compared mental images generated through sensory perception to the impressions of a signet ring on a wax tablet. In his view, images were imperfect and insignificant copies of pure forms. Plato establishes a hierarchy of reality in which ideas are considered superior in their degree of Being to physical objects and physical objects as being superior to images. In poetry, as in all things, Plato was concerned with the ontology of the object—the degree to which the images evoked by the poem could approach the metaphysical reality of pure reason.

Aristotle's Empirical View of the World

In *De Anima*, Aristotle (1968) describes a world of sensation. Aristotle's philosophy differs from Plato's in a fundamental way. Where Plato conceives of a world that takes its shape in ideas, for Aristotle, ideas take their shape from the immediate physical world. Aristotle still concerned himself with forms but forms, he contended, are in the things themselves and are not innate ideas independent of any concrete experience.

The five senses—seeing, hearing, touching, tasting, and smelling—are the means through which we take in the world. Aristotle (1968) too, likens sense perception to a wax impression.

In general, with regard to all sense-perception we must take it that the sense is that which can receive perceptible forms without their matter, as wax receives the imprint of the ring without the iron or gold, and it takes the imprint which is of gold or bronze, but not *qua* gold or bronze. (pp. 42-43).

To perceive of something is to incorporate its form into one's mind, but Aristotle reminds us that images are not synonymous with the reality that inspired them. Lakoff and Johnson (1999) relate the mental sense impression of Aristotle's realism to the metaphors of the mind as a container, understanding as grasping, and ideas as physical objects with a definite structure. Accordingly, perceiving is seen as receiving objects external to the mind.

Both Plato and Aristotle distinguished between perceiving and thinking, but where Plato maintained that knowledge is to be found in the discourse of reason, Aristotle (1968) claimed that thought requires sensibility as well. He distinguished imagination from perception and discursive thinking adding that perception is a necessary condition for imagination and similarly, imagination is a necessary condition for judgment. For Aristotle, it is not ideas but perception that holds reigning ontological status for "perception is always true and is found in all animals, whereas it is possible to think falsely" (pp. 52-53). Most notably, Aristotle (1968) maintained that there is no thought without an image.

Aristotle (1968) conceived of imagination as a willful act of consciousness and unlike Plato, he held that the human mind is capable of discerning between ‘objective’ reality and images to yield varying emotional judgments.

For [imagining] is up to us when we wish (for it is possible to produce something before our eyes, as those do who set things out in mnemonic systems and form images of them); but believing is not up to us, for it must be either true or false. Moreover, when we believe that something is terrible or alarming we are immediately affected correspondingly, and similarly if it is something encouraging; but in the case of the imagination we are just as if we saw the terrible or encouraging things in a picture. (p. 53)

While I intend to demonstrate that the imagination is all but unaffecting, Aristotle’s distinction between real and imaginary as evidenced by our emotional responses is important to later discussions on evaluating the rhetorical merit of literature and understanding what might be meant by the expression, the “lived through experience” (Rosenblatt, 1978, p. 27) of a text by a reader. Aristotle contends that where perception always indicates a presence, imagination does not. How an image functions to make present an object that is not immediately present has long been the subject of philosophical speculation and is regarded as a central problem to be resolved within the emerging field of consciousness studies. Any discussion of the relationship between literature and life needs to entertain the ramifications of the idea that an image posits a nothingness, the perception of an object that is not there (Sartre, 1940/2004).

Cogito, ergo sum: Descartes and the Separation of Mind and Body

Descartes' declaration, "*Cogito, ergo sum*" ("Je pense, donc je suis/I think, therefore I am") solidified the Western philosophical belief in the separation of mind and body. Descartes argued that the occurrence of thought requires a thinker and there could be no greater intuitive certainty than the first-person formulation of the perception of oneself as a thinking being. For Descartes, not only is reason innate but also the existence of God as a perfect entity is self-evident to the thinking soul. The Enlightenment thinker posited a rationalist and dualist philosophy that focused on the relationship between mind and body.

Up until the seventeenth century, philosophers had not postulated any radical division between mind and matter. For Aristotle, the soul was pervasively present throughout the organism as its life principle and it was inconceivable to think of the soul being separate from the body. Even Plato could not explain how the mind influenced the body and conceded that the mind and body together share the same movement. Plato was however, convinced that what we grasp with our mind is more real than what we grasp with our senses. Descartes too, believed that the senses could not be trusted. He posited that the thinking "I" was more real than anything in the material world. In his view, the mind is pure consciousness and not subject to the spatial or temporal conditions of matter. It was one of two forms of reality that Descartes referred to as *res cogitans* or thinking things. The other form of reality in Descartes' dualist philosophy was *res extensa* or extended things, that is to say, matter in general. According to Descartes' substance dualism, humans have both a mind and a body but thought is independent from

matter and material processes. The body is more or less mechanistic—an automaton that operated according to natural laws.

Descartes' philosophy was characterized by the pursuit of certainty. As the father of analytic geometry, Descartes believed that in the contemplation of natural phenomena, measurement and enumeration could ensure that nothing was left to chance. He therefore, sought mathematical proofs for philosophical truths. However, despite Descartes' insistence on a mind independent of the body, we know from his writings that he recognized that mind and body do interact. In an attempt to account for how bodily needs and desires might affect thought, Descartes (1978) mistakenly designated the pineal gland as the locus where body and soul could communicate. Damasio (2003) suggests that Descartes may have wondered more about the embodiment of the mind but distorted his own thinking to deny any doubt of the existence of an immortal soul in response to the looming threat of the inquisition. The profound influence of Cartesian dualism in Western philosophy and psychology cannot be underestimated. Its ideas and its variants persist in modern times. For example, computation in human cognition, that is, the “manipulation of symbols according to a definite procedure” (Edelman, 1992, p. 13) is conceived of as independent of the nervous system and cognitivism has supported the idea of an inborn language acquisition device (Chomsky, 1957) comprising rules for syntax and constituting a universal grammar.

Kant and the Schematization of Concepts

Kant held that the rationalists were too extreme in their belief that reason was the sole basis of reality. He also thought that the realists placed too much faith in sensory experience. Kant attempted to account for how the rational mind and sensuous

experience together constitute the elements of our cognitive faculties. In this regard, he was the first to postulate a theory of mind based on how body and mind interact. In his *Critique of Pure Reason*, Kant (1781/1990) declared that knowledge begins in experience, then immediately qualifies his position by insisting that sensuous experience merely provides the occasion for knowledge to occur. In his view, there are certain pre-existing or *a priori* conditions that determine the way we experience the world.

Kant distinguished between rational or higher-levels of human cognition and sub-rational or lower levels of human cognition. He named the higher levels of cognition *verstand* or understanding. To Kant, understanding represents the logical, discursive, proposition-forming faculty of the mind that produces concepts as output. Concepts are abstract semantic propositions that correspond to linguistic predicates and to a set of properties. Kant referred to lower levels of cognition as *sinnlichkeit* or sensibility. Sensibility has to do with the affective, perceptual, and imaginal faculty of the mind that produces intuitions as outputs. According to Kant, concepts constitute the non-empirical or *a priori* form of every intuition generated by sensibility. He explains:

...the only manner in which objects can be given to us, is by the means of the modification of our sensibility.... This formal and pure condition of sensibility, to which the conception of the understanding is restricted in its employment, we shall name the *schema* of the conception of the understanding and the procedure of the understanding with these schemata we shall call the *schematism* of the pure understanding. (p. 102)

A schema has as its aim the *unity* of sensibility and therefore is distinguishable from any single image. For example, in Kant's estimation "no triangle can ever be adequate to our

conception of a triangle in general” (p. 102). In other words, a schema purportedly synthesizes perceptual information into appropriate conceptualized form. It should be emphasized that in Kant’s transcendental philosophy, *a priori* conditions determine both conceptual categories and the synthesis of empirical consciousness. How this is done remains a mystery, no clearer now than when Kant (1781/1990) wrote: “This schematism of our understanding, in regard to phenomena and their mere form, is an art concealed in the depths of the human soul, whose true modes of actions we shall only with difficulty discover and unveil” (p. 103).³

Kant’s transcendentalism proved particularly inspirational for the romantics. The idea that the human mind possesses the faculties to unite idealism with imagination appealed to those interested in interpreting the natural and social world. By now, it should be evident that Western philosophy has been characterized by efforts to reconcile the tension between abstract rationalism and concrete realism. At this point, it seems appropriate to re-examine this tension within the context of two general theories of cognition that form the basis for several current models of reading.

General Theories of Cognition and Reading Comprehension

Schema Theory

The word ‘schema’ remains widely used within the field of cognitive science and is generally accepted to mean abstract knowledge structures (Anderson & Pearson, 1984) or data structures for representing human generic concepts in memory (Brewer, 1999; Rumelhart, 1980; Rumelhart & Ortony, 1977). Applied in such a general way as to

³ In Norman Kemp Smith’s earlier translation of *Immanuel Kant’s Critique of Pure Reason*, New York, 1963, the citation is considerably more dubious about the possibility of ever understanding the mental processes underlying schema, “This schematism of our intellect...is an art concealed in the depths of the human soul, whose real modes of activity nature is hardly likely ever to allow us to discover and to have open to our gaze” (pp. 180-181).

accommodate a plethora of models, schema has been extended to include a number of variants. Schemata are also conceptualized as frames (Minsky, 1975), scripts (Schank & Abelson, 1977), ideals (Bregman, 1977), plans (Schank, 1982), and macrostructures (Kintsch & van Dijk, 1978). These variants have been applied in the analysis of general procedural knowledge in routine situations, perceptual recognition, memory, motor skills, and discourse comprehension. For example, scripts are applied in the analysis of behavioral responses in broad situations such as dining in a restaurant and in the specific acts constituting the broader situation such as being seated, ordering, and selecting the proper silverware for each course.

Regardless of the variation in application, Alba and Hasher (1983) have identified four encoding processes and one retrieval process that appear to be characteristic of all schema theories. The four encoding processes include: *selection*, whereby information to be represented is selected; *abstraction*, whereby the meaning of a message is stored; *interpretation*, whereby relevant prior knowledge is activated; and *integration*, whereby a coherent representation is formed from the preceding processes. The retrieval process entails accessing any remaining details as well as general knowledge in order to *reconstruct* the episode. Schema theory has been closely linked to Piaget's (1926) cognitive constructivism, insofar as the intake of new information results in either the assimilation of new knowledge into existing schema or the modification of the existing schema structure to accommodate new data. In this regard, schema theory has prompted reading research to examine the constructive nature of reading comprehension and to focus on the critical role of the reader's prior knowledge. Nevertheless, as I have suggested earlier in the discussion on Kantian schematism, current schema theory does

relatively little more to explain how knowledge is actually represented, organized, and used. Major criticism of schema theory focuses on its definitional vagueness, reification, and problems associated with empirical testing (Alba & Hasher, 1983; Paivio, 1986; Sadoski, Paivio, & Goetz, 1991).

As Kant himself pointed out, understanding schematism is likely to elude the human mind. It has become clear, however, that schema's elusiveness has more to do with its imprecision than its complexity. The definitional vagueness of schema allows for different theorists concerned with different aspects of cognition to apply the term in convenient ways as to yield any number of appropriations. While some appropriations of schema appear related, at times, the word stands in direct theoretical opposition to itself. For example, Lakoff and Johnson's (1999) image schemata that closely resemble mental imagery differ significantly from Rumelhart's (1975, 1980) computational data structures and from the proposition as the basic unit of knowledge in Anderson and Pearson's (1984) schema theory.

The ambiguity of schema might best be illustrated in Brown's (1979) challenge to "remove the word *schema* from any paper written in schematese and look for any changes in meaning" (p. 231). I must admit to having tried this exercise with a fellow graduate student who brought Brown's game to my attention. We read through several articles in journals from her field of bilingual education and quickly found that apart from having to make some minor grammatical changes and occasionally, having to substitute the words *prior knowledge*, or simply *knowledge* where a subject or object was needed, removing the word *schema* did not seem to result in any loss of meaning. Even Bartlett (1932), who is credited with early investigations into the construction of cultural

schemata for interpreting stories, expresses his dissatisfaction with inadequacy of schema.

I strongly dislike the term “schema.” It is at once too definite and too sketchy.... It would probably be best to speak of “active, developing patterns;” but the word “patterns,” too being now very widely and variously employed, has its own difficulties. (pp. 200-201).

Definitional vagueness is directly related to the problem of reification, or “attributing actual existence to something that is only a name or an abstraction” (Sadoski, Paivio, & Goetz, 1991, p. 467). In other words, it becomes fairly difficult to define something that has no concrete referent apart from metaphorical constructs such as “schemata are like little containers into which we deposit particular experiences that we have” (Pearson, 2000). Ironically, schema theory appeals to the unquestioned evidence of sense experience through the use of metaphors. Arendt (1971) explains:

Metaphors...can be used by speculative reason, which indeed cannot avoid them, but when they intrude, as is their tendency, on scientific reasoning, they are used and misused to create and provide plausible evidence for theories that are actually mere hypotheses that have to be proved or disproved by facts. (pp. 112-113)⁴

I would be remiss if I did not acknowledge at this time that philosophy is also subject to the allure of metaphors to state its case. Reification is an epistemological concern likely to arise from purely abstract reasoning and in scientific and philosophical speculations about what is currently unknown about human consciousness.

⁴ Arendt references Hans Blumenberg’s *Paradigmen zu einer Metaphorologie*, Bonn, 1960, in which he traces such common figures of speech as the iceberg metaphor, used in psychoanalysis to describe consciousness, to uncover the extent to which modern pseudo-sciences owe their plausibility to the illusory evidence of the metaphor which they substitute for the lack of data.

It is not surprising that theories that rely heavily on metaphor to establish their plausibility are difficult to demonstrate. In fact, studies cited in original support for schema theory have come under considerable criticism. The inherent difficulties in providing evidence for schema theory's encoding and retrieval processes relate to the fact that ultimately, the most that these findings can hope to evince has already been observed in memory research. Moreover, schema theory fails to account for the richness and accuracy of detail often reported in the existing body of memory research (Sadoski, Paivio, Goetz, 1991). Critics have found that the evidence cited in support of the encoding and retrieval processes described in schema theory can be attributed to procedural peculiarities, context effects, and the use of ambiguous and bizarre texts used in experimentation. Analyses of so-called 'landmark' studies in schema theory have led Alba and Hasher (1983), Paivio (1986), and Sadoski, Paivio, and Goetz (1991) to demonstrate that schema is not critical to the interpretation of the results of these studies.

For example, in a study by Anderson, Reynolds, Schallert, and Goetz (1977), participants were asked to interpret a text that could be describing either a prison break or a wrestling match and another describing either a card game or a musical evening. The researchers concluded that participants with either a background in music or in sports interpreted the texts according to their respective backgrounds. But as Sadoski (1981) asserts, the deliberate ambiguity of such texts places the validity and generalizability of the findings in question. Attempts to replicate the findings of this study (Carey, Harste, & Smith, 1981; Cunard, 1983) showed that the social and physical setting in which the participants read the text had significant and independent effects on interpretation. The

addition of disambiguating titles or clarifying language was also shown to have a significant effect on interpretation independent of participants' background knowledge.

While schema research has made an undeniable contribution to emphasizing the importance of prior knowledge in reading and cognition, accepting the results of schema research and its reifying metaphors at face value has far-reaching consequences for the field. In my former role as a curriculum coordinator, I have witnessed both workshop facilitators and teachers submit colleagues and students to what I can only describe as a misguided effort to put theory into practice. In one teacher workshop, participants were asked to read a deliberately ambiguous text similar to the type used in the study by Anderson, Reynolds, Schallert, and Goetz (1977) and then discuss what they thought it was about. After teachers read through the text and the expected "huhs", embarrassed giggles, and expressions of "I don't get it!" were heard across the room, teachers began to work in pairs to unravel the meaning of the text passage. A colleague of mine immediately identified the passage as having to do with the voyages of Christopher Columbus. The facilitator then expounded on the importance of bringing to the text the right background knowledge or 'schemata' in order to comprehend the text passage.

Of course, having some background knowledge helped, but I have serious doubts about whether my colleague knew anything more about Columbus than any of the other sixty or so Canadian educators present who did not make sense of the text passage. The point of contriving a text this ambiguous is that you are not supposed to "get it." If these texts can demonstrate anything, it is bad writing. Such exercises, whether used in experimentation or in demonstrating theoretical implications do not illustrate the selection of information. These passages merely take the idea of reading as a

“psycholinguistic guessing game” (Goodman, 1969) to extremes by the deliberate exclusion of concrete referents and a discernible context and therefore are hardly representative of naturally occurring texts. While some may contend that the disconnectedness of the text simulates the lack of clarity associated with reading culturally unfamiliar texts, there is nothing conclusive to suggest that schema necessarily accounts for the effects of cultural background.

Is the schema in current computational theories of cognition the same as Kant’s (1781/1990) schema in *Critique of Pure Reason*? Kant’s *verstand* was ultimately concerned with knowledge arising from the senses. In Kant’s view, a schema served only a “heuristic” (p. 376) function conceding, “Pure reason is, in fact, occupied with itself and not with any object” (p. 381). Kant thought pure reason (*vernunft*) alone was insufficient to deal directly with sensory experience and supposedly a schema provided the necessary organizing principle. Bartlett (1932) too, reasoned that that a schema was functional and transitory in nature and did not constitute a cognitive structure (p. 304). A schema, according to Kant (1781/1990) is not to be taken as the object of experience itself, but rather as “possessing a comparative reality.... They are to be regarded not as actual things, but as in some measure analogous to them” (p. 377). The following examination of two schema-based theoretical models of reading describes how comprehension is initiated through abstract and amodal propositions. The failure of these models to adequately address the imagistic and affective aspects of reading strongly suggests that current schema theory no longer holds as its primary aim the coherence of sense experience.

Computational Models of Reading

Rumelhart's Parallel Input Model

Rumelhart (1977) developed a parallel distributed processing model of reading in which input from various levels come together simultaneously to produce perception and comprehension. According to Rumelhart, patterns of information from several knowledge sources including orthographic knowledge or knowledge of letters and sounds, lexical knowledge or knowledge about words, and syntactic and semantic knowledge are synthesized in a “message center.” The “message center” maintains a running list of hypotheses generated at discrete levels and these hypotheses are evaluated in relation to input from other levels. Rumelhart describes his “message center” as a three-dimensional space where each dimension represents either the visual print information at a particular point along the line of text, the level of hypothesis (feature level, letter level, letter-cluster level, lexical level, syntactical level), or alternative hypotheses at the same level.

Rumelhart's (1977) model attempts to account for reading phenomena occurring when the apprehension of information at a level of analysis is partially determined by higher levels of analysis as in the syntactic effects on the level of word perception. For example, in the following sentences punctuation provides the syntactic cues to determine the phonological recoding of the word *read*:

a) Johnny *read* the book.

b) Johnny, *read* the book!

The explanatory potential of Rumelhart's “message center” is illustrated in an experimental procedure in which a subject is briefly presented with a picture of a

Volkswagen passing through a mountain village. Participants are instructed that a tachistoscopic presentation of a noun phrase referring to one of the objects in the picture will be presented. The participant is to decide to which object the noun phrase referred. The instructions provide the participant with some important semantic-level knowledge with which to build her hypotheses even before the tachistoscopic presentation insofar as she knows the phrase will refer to an object. Such knowledge is likely to elicit the participant's syntactic knowledge about common phrases used to denote objects, for example determiner + noun (as in "a lake") or determiner + adjective(s) + noun (as in "the winding road"). These hypotheses are said to be entered into the message center in a top-down fashion because they involve the use of information from the reader's memory.

Once graphic input enters the message center after the tachistoscopic presentation, the reader begins to simultaneously form hypotheses in a bottom-up fashion as the reader uses featural information for word recognition. Suppose that from the information prior to the tachistoscopic presentation "THE CAR," the reader has hypothesized "a" and "the" as two possible determiners in the noun phrase. The lexical hypotheses have led the reader to letter hypotheses with which to test against the featural information of the tachistoscopic presentation where "A" is soon discarded in favor of "T" and from the first letter position "T" to the letter cluster "TH" or whole word "THE." From the graphic depiction, the reader is likely to have eliminated the syntactic possibility of a longer three-word phrase using a determiner + adjective + noun. Where VOLKSWAGEN, VILLAGE, and MOUNTAIN serve as rival hypotheses for the noun CAR, the reader may rely on a number of different processing possibilities for word recognition. In this case, the configuration of both the entire phrase and the individual noun is likely to

eliminate longer words but nevertheless, the initial “C” may serve to enhance the probability that “CAR” is the noun referred to in the picture. At the syntactic level, the word “CAR” is integrated with “THE” to confirm the semantic level hypothesis.

Rumelhart provides a plausible explanation for how readers access knowledge from various sources in response to abstract propositions in order to achieve comprehension. In many ways, the development of his interactive model of reading has put to rest many of the arguments surrounding the linearity in both data-driven or ‘bottom-up’ processing and meaning centered or ‘top down’ processing. Yet, Rumelhart’s account does not include the possibility that readers rely on the formation of images in order to process the phrase sequences like “THE CAR.” Sadoski and Paivio (2001) introduce imagery to their dual coding version of Rumelhart’s illustrative example of the message center at work.

As described earlier, dual coding theory maintains that mental representation is organized into two separate coding systems—one specialized for language and the other for nonverbal objects and events. The basic units for verbal representations are called logogens and the basic units for nonverbal representations are called imagens. Sadoski and Paivio suggest that the brief presentation of the picture and the instructions that follow will activate imagens of the whole picture and its nested parts. These imagens in turn, trigger referential or between system connections that run back and forth between imagens in the nonverbal system and logogens in the verbal system. In this case, the projected image may prime a number of possible noun phrase sequences such as “THE CAR,” “A MOUNTAIN,” or “A VILLAGE.” Associative or within system connections might prime possible adjectives such as a color for the car (“THE RED CAR”) or a

country for the village (“A SWISS VILLAGE”). Verbal adjectives could also be triggered referentially by the nested images.

Similar to Rumelhart’s example, dual coding theory accounts for the activation of familiar letter and word logogens in response to graphic stimuli such as the overall length and configuration of the words in the phrase, word division, and features of initial letters. In contrast to the operation of Rumelhart’s message center, dual coding theory also introduces phonological recoding, a form of mental imagery relying on associative level of processing whereby readers enact an auditory encoding of phonemes, for example, /k/ as represented by the “C” in “CAR.” While imagery does not appear to figure into the operation of Rumelhart’s schema-based model of reading, it is included in Kintsch’s (1988, 1998) two-stage construction-integration model as a possible outcome of building abstract propositions.

Kintsch’s Two-Stage Construction-Integration Model

In Kintsch’s two-stage construction-integration model a text base is constructed from the linguistic input and the reader’s knowledge base and subsequently integrated into a coherent whole. The construction stage of Kintsch’s model is a four step process that involves: 1) the formation of concepts and propositions directly relating to the linguistic input; 2) the elaboration of each of these elements through the selection of several closely related semantic and associative neighbors in the general knowledge net; 3) the inference of additional propositions; and 4) the assignation of numerical values indicating the strength of the connection between pairs of elements in the propositional framework. Comprehension is largely the result of a process of constraints.

In Kintsch's model, words are converted to propositional form according to a schema based case grammar. Consider the simple sentence *Officials closed the bank*. Proposition building begins with linguistic parsing in which *Officials* [agent of CLOSE] *closed* [predicate] *the bank* [object of CLOSE]. As the reader visually processes a word in a text, the incremental construction of meaning begins with the bottom-up spreading activation of associated propositions in the general knowledge net. According to Kintsch's model, knowledge is organized in a loose associative network of mental propositions. Propositions are interconnected by stronger and weaker positive and negative connections. Using the word *bank*, Kintsch (1988) describes the creation of an abstract propositional network for discourse comprehension.

According to Kintsch (1988), the word *bank* would be likely to activate the lexical nodes *bank1* (financial institution) and *bank2* (riverbank) as well as several of their strong semantic or associative neighbors in the general knowledge network (e.g., *bank1*: money, debit card, teller, First National Bank; *bank2*: flood, Red River, soil). Connections between associates are assigned values between -1 and $+1$ based on the degree of relationship. Connections between lexical nodes and their associates are assigned positive values whereas connections between competing nodes and associates of competing nodes are assigned negative values. For example, the connection between *bank1* (financial institution) and *bank2* (riverbank) is assigned a value of -1 , the connection between *bank1* (financial institution) and *money* is assigned a value of $+0.5$, and the connection between *bank2* (riverbank) and *First National Bank* is assigned a value of -0.5 . Primary associates then generate secondary abstract propositions. For example, *soil* might yield *erosion* and *flood* might generate the associate *alluvial*

deposits. These secondary associates would have an assigned value in the propositional network proportionate to their relationship to the lexical node *bank2*. In the tradition of computer-based theories of cognition (Baylor, 1973; Minsky, 1986; Pylyshyn, 1978) in which thought is represented by logical language and reason as mathematical calculation (Lakoff & Johnson, 1999), Kintsch's numerical connections lead to the development of formulae to represent how readers computationally arrive at a stable interpretation. Once the propositional network is linked into a text base, positively interconnected items reinforce each other, while disparate items are eliminated and inconsistent items become inhibited. This occurs at the level of word recognition as well as of textual integration. In the integration stage, knowledge about language and the world is integrated with linguistic input to constrain the associative possibilities and eventually allow readers to construct a stable and coherent text base through repeated context checks. It is at this point in Kintsch's model that readers can finally tap into imagery as a source of information in order to achieve textual coherence.

It is questionable whether Kintsch's (1998) "architecture of cognition" (p. 5) initially developed in complete isolation of the nervous system can ever hope to account for the actual coding and processing operations involved in discourse comprehension. Dual coding theory and Kintsch's model both assume the spreading activation of associates. However, according to Kintsch's theory, readers may form non-linguistic images but only in response to the creation of the abstract propositional framework. The model neither allows for the possibility that imagery can be an integral part of the construction of word and phrase meaning nor does it attempt to explain how images are derived from abstract propositions. Dual coding theory also introduces the possibility

that the visual representation of words or phrases can lead to the direct activation of logogens available in memory particularly in literate persons when they encounter a familiar word such as the name of a popular make of automobile as in “Volkswagen.” Repeated advertising is done to ensure that brand names are instantly recognizable to a buying public.

Paivio and Begg (1971) compared imagery and reaction times and concluded that images can be activated before sentence comprehension is complete. For example, let us return to the sentence *Officials closed the bank* and change it slightly so that it now reads like the newspaper headline, “OFFICIALS CLOSE BANK.” The intent of headlines is to create an immediate image in the mind of the reader, in this case of the closing of a financial institution or perhaps, the restricted access to a particular riverbank or barrier. Either image might be accompanied by an emotional response according to the needs and desires of the individual. The headline may confirm an anticipated event where the reader has already imaginatively projected the possibility of it happening. For those who have lived through numerous flood threats, or have experienced the direct consequences of the collapse of Eastern European currency, or the battle for control of the West Bank, the headline “OFFICIALS CLOSE BANK” is likely to provoke very different but vivid imagery accompanied by intense emotional response. Paivio and Begg (1971) found that readers may begin to form images at the beginning of the sentence rather than waiting until after the entire sentence has been read. In the case of the headline example, visually processing the word *officials* can evoke the image of a trusted city official possibly accompanied by a sense of relief and confidence or conversely, the image of unwanted

military personnel—an ever-present threat to personal freedom and accompanied by a sense of fear and resentment.

As readers read, imagery and affective responses are constantly being evoked in anticipation of what is to come, that is to say, readers come to the words on a page with images stored in memory which is why they are compelled to read on and confirm or reconfigure their representations according to new information. Imagery and affect are not an after thought as most theories of reader response would have us believe, but rather, integral features of the ongoing construction of meaning. Dual coding theory accounts for the possibility that readers can form images at any point in the comprehension process and provides a more comprehensive psychological accounting of how readers simultaneously access both verbal and nonverbal representations in the online processing of text.

Neuroscience provides us with an ever-growing body of evidence about the multi-modal nature of the brain. Such evidence strongly supports the conclusion that different parts of the brain are specialized for processing stimulus information verbally or nonverbally. Where Kintsch (1998) claims his construction-integration model might serve as a paradigm for cognition, dual coding theory of reading and writing derives from existing cognitive theory. Comparing the cognitive assumptions in each theory permits us to evaluate how the mental representations described in each theory deal simultaneously with language and nonverbal objects and events. The account of dual coding theory that follows is intended to provide the necessary basis for understanding that readers do not bypass the cognitive processes of perception and feeling in an attempt to achieve a state of isolated reason required by computational models of reading. Later

in Chapter IV, I explain how a state of pure reason, either as a Platonic ideal or as Kant's *vernunft*, is biologically untenable insofar as it depends on "the individual's degree of removal from awareness of the other parallel activities of the mind" (Edelman, 1992, p. 17).

A Dual Coding Approach to Mental Representations

Dual coding theory is a reaction to the singular and dominant view in psychology up until the 1960's that mental representations used in cognition were primarily verbal or linguistic (Paivio, 1986). The theory attempts to account for the empirical nature of knowledge and thought through the presentation of a set of assumptions and hypotheses relating to the structure and function of mental imagery. Its emphasis on perceptual, motor, and affective experience as the developmental origin of internal mental representations is extremely compatible with many of the philosophical ideas expressed in pragmatism and recent neurobiological evidence describing the evolution of mind and consciousness. In large part, it is the intriguing nature of this common ground that prompts this investigation into the structure and function of imagery and affect in the literary experience. While dual coding theory can tell us much about the continuity between perception and memory, I believe the theory offers valuable insights into the phenomenal experience of the reader and how the evocation of images and emotions during literary engagement might contribute to the reader's expanding ethical consciousness.

Dual coding theory rejects the rationalism adopted by computational theories of cognition that rely on formulating general truths through logical reasoning alone. Instead, dual coding theory favors an empirical approach to studying mental phenomena

relying on observable behavior to formulate assumptions and hypotheses. A dual coding approach to understanding mental representations is a thoroughly embodied theory of cognition. There is an internal consistency between dual coding theory's empirical view of the mind and the methodology applied in studying mental representational systems. Later in the discussion, I will explain how this internal consistency between philosophy and method is lacking in Kintsch's (1998) revised construction-integration model thereby undermining credence in the logical basis of the theory. In the interest of brevity, I review dual coding theory directly within the literacy context so as to make the necessary connections to literal, inferential, and critical comprehension in reading.

The Organization of Knowledge in Dual Coding Theory of Reading and Writing

Recalling the mental sense impression in Aristotle's realism, Sadoski and Paivio (2001) assert that our mental representations retain some of the concrete qualities of external experiences. As previously stated, mental representation is organized into two separate coding systems, one system to deal with the representation of nonverbal objects and events and the other to deal with language. The basic nonverbal and verbal representational units are referred to as *imagens* and *logogens*. Both systems are organized hierarchically but not similarly. The verbal system is ordered sequentially whereas the nonverbal system is ordered nonsequentially. For example, morphemes occur in sequential patterns that adhere to associative constraints (e.g., prefix + root + suffix) whereas, nonverbal representations often appear in compound images and represent episodes holistically. Sadoski and Paivio indicate that there is some empirical evidence to suggest that *logogens* are word-like images while *imagens* are object or scene-like. It is important to note that to fully understand the empirical nature of dual

coding theory one must recognize that mental imagery is not limited to visual images but includes mental representations associated with all sensory modalities—the visual, auditory, haptic, gustatory, and olfactory.

Dual coding theory presents a unified theory of reading and writing to explain the orthogonal relationship between mental codes and sense modalities. According to the theory, representational structures and processes in both the verbal and nonverbal systems are modality-specific. While mental encodings result in concrete imagery, they can still handle abstract information in the form of language symbols, charts, or diagrams. The possibility for verbal representations is present in visual, auditory, and haptic modalities. For example, a visual verbal encoding might be the mental representation of the letter “p” or the entire word “pipe” whereas an auditory verbal encoding might be the phoneme /p/ or the pronunciation /paip/. Visual logogens include that body of familiar written units with consistent features such as letters, numbers, or punctuation marks, common subword combinations of letters, whole words, and often familiar phrases as in popular advertising logos or expressions. Imagens or nonverbal representations are often embedded in other imagens in a hierarchical arrangement of associations and are said to be contextualized. For example, one can imagine a book, lying open on a coffee table, in front of a sofa, in a living room, and so forth. Dual coding system assumes that as we read, we are activating verbal and nonverbal representations and making connections between them.

According to dual coding theory, the capacity for forming mental imagery derives from direct sensorimotor experience, that is to say, patterns of response to external experiences are instantiated as part of our cognitive representations. Dual coding theory appears to have an explanatory advantage over other theories of reading that generally

limit their focus to a particular aspect of the reading process. For example, Kintsch's (1988) two-stage construction-integration model focuses primarily on comprehension, whereas dual coding theory describes how imagery is used in the representative, referential, and associative thought processes enacted in decoding, comprehension, and response.

Mental Imagery and Word Recognition

An underlying premise of dual coding theory in reading is that the activation of meaning is fundamental to word recognition and that word recognition is part of a larger continuum of processing that includes logogens of various sizes—letter features, letters, syllables, morphemes, words, and larger units. Dual coding theory effectively accounts for the interaction of bottom-up and top-down models of reading. The various sizes of logogens and the context effects from both the verbal and nonverbal sources allow for greater flexibility of thought and the possibility that readers actually engage in moving between the bottom-up detection of print features and the top-down contextual priming.

I am reminded that while assessing students through the use of running records, a number of children substituted “coat” for “cloak.” In this situation the word “coat” is visually similar to “cloak” and the context did not provide readers with assistance in decoding the word correctly. As Sadoski and Paivio (2001) explain, skilled readers notice minor differences in letter features and often these differences can make a major impact on meaning as in their example *Change the battery* and *Charge the battery*. The visual representation of the letters recoded into phonologic form may be used to access semantic memory or alternately, the recoding of the visual representation of whole words (*change* and *charge*) into phonologic form may directly evoke nonverbal mental

representations of two very different actions causing the reader to pay closer attention to letter features in “change” and “charge.” How the attention of the reader determines which unit takes perceptual precedence has long been a question of theoretical debate. In contrast to the rigidity of the semantic parsing used in the construction of amodal and abstract propositions theorized in computational models, Sadoski and Paivio’s theory is flexible enough to accommodate any number of scenarios.

For example, in a resource manual I was reading for teaching word analysis, Gunning (2000) describes his recent first encounter with the word “agonal.” He reportedly began by attempting to phonologically recode the visual representation and use syllabic analysis to construct the word’s pronunciation which he guessed might be /uh-GON-uhl/. However, the phonological recoding did not afford Gunning access to the word’s meaning which prompted him to attempt a morphemic analysis. Accessing his mental store of words, he questioned whether the “gon” could mean “sides” as in “polygon,” which may have triggered a mental representation of geometric figures (I know it did in my mind as I read this). Thinking that he might be on to something, he then asked himself if the “a” in “agonal” might mean “not” as in “alliterate” and that the suffix “al” made the word an adjective. By putting all the elements together, he came up with the idea that “agonal” meant something close to “without sides or angles.” However, his definition did not fit with the context. As a last resort, he consulted the dictionary only to find that “agonal” is pronounced /AG-uh-nul/ meaning “pertaining to agony.” Nevertheless, this example gives us a picture of the back and forth movement between units of analysis and establishes the contributing role of imagery in visual and

phonological recoding in order to develop a hypothesis for problem solving word meaning.

Mental Imagery and Comprehension

To explain Sadoski and Paivio's (2001) approach to issues relating to comprehension, again I must emphasize that dual coding theory contends that without the activation of mental representation, no meaning can be present. Whereas computational models view comprehension as a product of constraints, comprehension within dual coding theory is seen as a system of both building up information and narrowing down information. According to dual coding theory, comprehension is a function of three levels of processing—the representation, the referential, and the associative—all of which involve both the verbal and nonverbal systems described earlier.

At the most basic level, the representational level of comprehension consists of the activation of logogens through linguistic stimuli and the activation of imagens through non-linguistic stimuli. This activation can be intermodal. For example, naming written words requires recoding between visual logogens and articulatory logogens. This process might also entail the activation of phonological recoding as an intermediate step. Processing at the representational level depends on familiarity or the availability of modality-specific logogens or imagens stored in memory. At the representation level the word “cup” is easily recognized, even expressions like “hot cup of tea,” but for most people the word “agonal” is not and requires that readers make a series of verbal associations which may or may not fully resolve possible ambiguities in meaning. This demonstrates that representational processing often operates in tandem with other levels of processing.

At the referential level of meaning, connections are made between logogens in the verbal system and imagens in the nonverbal system. In other words, readers make connections between known language units and the mental images they have constructed based on their experience. Sadoski and Paivio explain that these connections have a neurological base and therefore referential processing occurs as neural pathways. These pathways can run from logogens to imagens or from imagens to logogens. Typically in reading, language units evoke imagens although subsequently, the imagens evoked may create within the reader, a strong sense of anticipation of the language to come. The articulation of the referential level of meaning in dual coding theory is critical to understanding the difference between the effects of concrete and abstract language. Concrete language has more direct referential connections to imagens than does abstract language. Studies of mental imagery in reading (Gambrell, 1982; Gambrell & Jawitz, 1993; Pressley, 1976; Sadoski, 1983; Sadoski, Goetz, & Avila, 1995; Sadoski, Goetz, & Kangiser, 1988; Sadoski & Quast, 1990) suggest that the meaningful comprehension and recall of texts can be enhanced through concreteness of language, the use of imagery instructions, and the use of pictures and animation.

Where referential processing involves between-system connections, the associative level of meaning involves within-system connections. Logogens form sequential connections to other logogens and include associations between letters, morphemes, words, and larger units such as clauses and sentences. An example of an inter-morpheme/intra-word association is a free morpheme such as “safe” modified by a bounded morpheme to obtain “safety,” “unsafe,” “safely.” Associations between larger units of language such as inter-word, inter-clause, and inter-sentence create various

syntactical and semantic contexts that contribute to the meaning making process and textual coherence.

Textual coherence refers to the reader's subjective interpretation of how well the mental representations evoked by the text serve to enhance the comprehensibility and unity of the text. As readers actively engage in the process of making meaning from text, they operate constantly in internal and external, verbal and nonverbal situational contexts. Both referential and associative processes assist the reader in making inferences or 'reading between the lines.' An inherent aspect of processing text is the creation of mental models. Where the text employs ambiguous imagery or unconventional language, textual coherence is often more difficult to achieve as in the type of texts used in some of the studies supporting schema theory.

Even when texts are fairly unambiguous, readers often contribute more to the text than what is actually presented. Language cannot possibly represent everything the writer wishes to express and therefore meaning is often inferred by accessing both nonverbal and verbal representations. For example, in a recent undergraduate class in content area literacy, I asked students to read a short passage from the course textbook describing a series of events in an art gallery (Vacca & Vacca, 2002). Although nothing in the text explicitly stated so, most students assumed that a robbery had taken place and that a woman was the perpetrator who sped off with a painting in a waiting truck. Moreover, students had formulated a mental description of both the woman and the truck and had constructed a mental representation of the interior of the art gallery. In this example, verbal-associative connections between events were not evident and therefore

students began to fill in the gaps by importing previously experienced images to make causal language connections between the events.

The Thematic and Symbolic Function of Imagery in Literature

In addition to helping the reader fill in the gaps and read between the lines, imagery performs a thematic and symbolic function in literature. Dominant images link ideas within a literary work to provide a sensuous alternative to amodal proposition building described in schema-based approaches to text comprehension and memory (Paivio, 1986). In *Shakespeare's Imagery and What it Tells Us*, Spurgeon (1935) noted that the repeated use of image-clusters such as death and disease in *Hamlet*, lightness and darkness in *Romeo and Juliet*, and animal imagery in *King Lear* are instrumental in defining characters, establishing mood and atmosphere, and creating thematic unity.

Similarly, imagery performs a unifying function in literature written for children and young adults. Author-illustrator, Maurice Sendak (1963) uses the repetition of familiar images as a thematic and structural device in the picture book classic, *Where the Wild Things Are*. The story, the first of a trilogy that also includes *In the Night Kitchen* (1970) and *Outside Over There* (1981), recounts the adventures of a mischievous boy named Max, who is sent to his room without his supper for acting like a “wild thing.” In his confinement, he sails away to a fantasy world—a hidden forest where he is crowned king of all wild things by a benign group of grotesque monsters. Sendak manages to link the events of the real world with those of the fantasy world through parallel images. In addition to Max’s moniker, there is the real world image of Max being “sent to bed without eating anything” and the fantasy world image of Max’s later decree in which he “sent the wild things off to bed without their supper.” The verbal and graphic

juxtapositions of reality and fantasy, death and renewal, and day and night are repeated throughout many of Sendak's works to achieve what Spurgeon (1935) referred to as leading motives.

Images combine and recombine in the unconscious mind in ways in which the artist may or may not be consciously aware (Paivio, 1991; Spurgeon, 1935). Throughout his famous trilogy, Sendak recalls and reconfigures childhood images to animate expressions of the dream life. In *In the Night Kitchen*, Sendak's child-hero, Mickey plunges into the depth of the night to knead the dough and shape the stuff that dreams are made of. Sendak's alchemy derives its ingredients from the memories and artifacts of his Brooklyn childhood. In his surrealistic skyline, composed of an assortment of everyday packaging—a nostalgic collection of boxes, bottles, cartons, and sacks each bearing a significant name or date from the artist's past, we see that "...dreams have a different texture" (Jung, 1964, p. 2). Word and image merge in the "prototypical representations" (Paivio, 1986, p. 228) and archetypal heroes that lend the works their psychic complexity. It is therefore not surprising that Sendak gratefully acknowledges William Blake as his cornerstone (Lanes, 1980). Through his poetry, paintings, and engravings, Blake also sought simultaneous expression for animating the images that appeared "before his mind's eye" (McKellar, 1957, p. 135). From a dual coding perspective, Paivio (1986) explains, "both verbal and imaginal contexts and associations contribute to the reader's [and writer's] psychological organization of the text including its overall integration or cohesiveness" (p. 227).

Where the literary art of the picture book is often achieved through the repetition and juxtaposition of verbally generated and graphic images, poetry relies on metaphor to

link internal images with the external world. As Ernest Feollosa writes: “Metaphor is...the very substance of poetry...[without it] there would have been no bridge whereby to cross from the minor truth of the seen to the major truth of the unseen” (cited in Arendt, 1971, p. 106). In poetry, similes and metaphors function to render abstract concepts into concrete images. These images in turn, can be further elaborated upon, reconfigured, and projected upon other objects and events to gain a richer and more personal interpretation. Metaphorical thinking, whereby the reader is able to imaginatively conceive of an object or event as representative of another, is fundamental to the ability to read beyond the lines in order to achieve critical comprehension.

A sociocultural perspective (Allen, 2000; Bakhtin, 1981, 1986; Kristeva, 1980) on language and literacy has emphasized the polyvocalic nature of literary works. Within the context of a unified theory of literature and composition, dual coding theory can account for the referential and associative connections constructed by both author and readers that contribute to the work’s intertextuality, or as Kristeva (1980) explains, how one text may be transposed in another textual system such as that of the novel.

According to Kristeva, “any text is constructed as a mosaic of quotations...the absorption and transformation of another” (p. 66). For example, fairy tales, Shakespearean plays, and religious texts make repeated use of images drawn from ancient Greek mythology, the fated love story in *Romeo and Juliet* is a recurrent theme in classic and contemporary works, and the Aristotelian view of the body can be read in Whitman’s poem, “I Sing the Body Electric.” In addition, intertextuality extends to individual responses made by readers to enhance the connotative possibilities. In several studies investigating the relationship between imagery and affect evoked during the reading of literary texts

(Krasny & Sadoski, 2004; Sadoski & Kangiser, 1988; Steffensen, Goetz & Cheng, 1999), qualitative reports of both imagery and affect revealed that participants often made associative links to personal experiences and events outside of the text and that these images were often accompanied by the arousal of emotions. In this regard, the dense overlap of within system and between systems connections made by readers begins to explain the text to self, text to text, and text to world connections described in theories of reader response.

In novels, imagery performs the added function of an organizing principle in literary analysis whereby specific images assist readers in the recall of plot and action. Studies investigating the relationship between mental imagery and recall in both literary and expository texts (Sadoski, 1983, 1985; Sadoski, Goetz, Olivarez, Lee & Roberts, 1990; Sadoski & Quast, 1990) provide considerable support for the “conceptual peg hypothesis” (Paivio, 1986) which contends that images function as a mnemonic device. Key images act as ‘pegs’ or ‘hooks’ on which other associated and less salient memories are hung for storage and retrieval. Sadoski’s (1983, 1985) early studies investigating the relationship between reported imagery and the comprehension and recall of a story demonstrate that while imagery relates to participants’ ability to identify theme, the lack of a significant relationship between reported imagery and verbal mental ability as obtained on standardized measures suggests that mental imagery constitutes a nonverbal mode of comprehension that remains a relatively untapped source of insight for reading researchers and educators. The referential and associative connections described in dual coding theory make possible the thematic, symbolic, and retrieval functions of images.

In sum, imagery in literary works manages to perform the unifying function once ascribed to Kant's schema without the obligatory construction of abstract propositions.

Conceptual Pegs in Childhood Verse

The idea that images are conceptual pegs upon which to hang related ideas and new information can be extended to the recitation of childhood verses. Early childhood educators may be inadvertently teaching important imagery strategies used in recall through popular nursery rhymes, songs, and chants. Paivio (1991) recounts the experience of Simonides, a Greek poet who lived around 500 B.C. to illustrate how orderly arrangements and *images* of things in their place serve as an aid to memory. Simonides was summoned from a banquet while he was reciting a lyric poem to the guests. When he returned, the roof of the banquet hall had collapsed, crushing the guests beyond recognition. Simonides was able to identify the dead by reconstructing the orderly arrangement of guests through images of localities or places. Simonides' technique became popular among public speakers who found carrying around written speeches too cumbersome. Children who use images as conceptual pegs to reconstruct cumulative songs and chants such as "Oliver Twist," "Quand Jean Petit danse," and "Dans mon pays d'Espagne" employ the same strategy used by teachers and students of rhetoric in ancient Greece.

For example, "Oliver Twist" is a popular chant that challenges children to recall, recite, and perform a series of actions. Children stand in a circle and recite:

Oliver Twist, Twist, Twist

Can't do this, this, this,

Touch his toes, toes, toes,

And around he goes, goes, goes.

With each successive recitation, another child adds another line to the rhyme calling for a different action not as yet mentioned (e.g., Touch his nose, nose, nose; Touch his toes, toes, toes....). Play continues until all the children have contributed a line, often yielding more than twenty or so actions. The kinesthetic act of performing the actions, and the rhyme, rhythm, and repetition of the words and phonemes contribute to a bodily incorporation of the chant, not unlike that achieved through the murmuring meditations of medieval monks. Yet as the number of lines increases, recalling the actions of the chant in sequential order generally depends on visually reviewing each child in her or his respective place in the circle. In this case, the immediate image of each child in the circle triggers the memory of the verbal call for a particular action. Later in Chapter 4, I discuss the notion of “bodyreading” (Grumet, 1988, p. 129) and examine in detail the risk of excising the sensuous contribution of rhyme and rhythm and its inherent invitation to play from the literature used in early reading instruction.

Neuropsychological Support for Dual Coding Theory

Paivio (1986) consulted several interpretive summaries of neuropsychological evidence on verbal and imagery processing (e.g., Bryden, 1982; Ley, 1983; Paivio & Begg, 1981; Paivio & te Linde, 1982) to examine the theoretical plausibility of the representational systems described in dual coding theory. Much of the evidence cited in support of dual coding theory relates to the functional asymmetry of the brain, that is to say, the way certain regions of the brain appear specialized to perform specific functions. In studies investigating the functional asymmetries between the two hemispheres of the brain, material is presented selectively to either hemisphere for perceptual recognition or

other types of cognitive processing. The selective presentation of material may include dichotic listening tasks or tachistoscopic presentations like those used in researching Rumelhart's parallel input model. Evidence is collected from people with normal brains and from patients with unilateral brain lesions and those in whom the corpus callosum connecting the two hemispheres has been damaged. For example, the independence between verbal and nonverbal processing purported in dual coding theory is observed in the differences between the episodic memory performance of patients with right- or left-temporal lesions. Patients with left-temporal lesions show deficits in verbal memory tasks, whereas those with right-temporal lesions show deficits in nonverbal memory tasks.

However, Paivio (1986) emphasizes that hemispheric functional distinctions relating to verbal and nonverbal episodic memory need to be qualified. Moreover, these qualifications are in many ways consistent with assumptions in dual coding theory. First, despite the apparent right-hemisphere superiority for nonverbal episodic memory, evidence from both normal subjects as well as split-brain patients reveals that pictures of common objects are perceptually recognized equally well by either hemisphere. This leads to the conclusion that representational systems needed for visual recognition of common objects are present in both hemispheres. Second, a similar qualification must be made to account for tachistoscopic recognition studies in which abstract words were recognized better in the right visual field indicating left-hemisphere superiority while concrete words were recognized equally well in both the left and right visual fields. Nevertheless, conflicting evidence (e.g., Boles, 1983) exists to support right-field (left-hemisphere) superiority for the recognition of both abstract and concrete words.

While it seems presumptuous to make any generalizations regarding hemispheric superiority in reading concrete words, Paivio (1986) offers several interpretations of the findings of these studies. One possibility is that the right hemispheric superiority in imagery processing contributes to the right-hemispheric reading of concrete words. According to dual coding theory, this would entail associative or within system connections. Another possibility is that the lexical representations of concrete words are present in both hemispheres. This may be accounted for in dual coding theory by the direct activation of logogens in the verbal representational system or verbal imagens within the nonverbal representational system. It is important to note that Paivio (1986) stresses that the independence characterizing the separate representational systems described in dual coding theory is not reliant on functional differences being neatly divided between the left- and right-hemispheres. Arguably, any correlations between activity in specific regions of the brain and functional differences can prove to be theoretically insightful. Edelman (1992) maintains that ultimately, it is the brain's morphology—the shape of cells and the development of tissue form that determine the function of the various regions of the brain.

Paivio (1986) cites a range of neuropsychological literature postulating the relationship between neuroanatomical distinctions and functional differences in support of several other key assumptions in dual coding theory. These include the orthogonal nature of symbolic and sensory modalities (e.g., Bryden, 1982; Curry, 1967), the representational, referential, and associative levels of processing (e.g., Beauvois, 1982; Geschwind, 1965; Luria, 1973) and the distinction between sequential and synchronous processing (e.g., Kimura, 1982; Luria, 1973; Mills & Rollman, 1979). Paivio's

interpretation of the literature reviewed restates the premise in dual coding theory that verbal and nonverbal systems are both functionally independent *and* interconnected. Interconnections between systems may account for the evidence that concrete words and common objects appear to be recognized equally well by both hemispheres. The orthogonal relationship of the verbal-nonverbal symbolic distinction to sensory modalities is consistent with the dissociated patterns of hemispheric asymmetries. This is demonstrated in patients where localized brain damage can affect their ability to activate neuronal systems specialized for the auditory processing of words (auditory logogens) without affecting neuronal systems specialized for visual processing of words (visual logogens).

Paivio (1986) also considers the neuropsychological findings relevant to the representation of emotions. Most importantly, the evidence reviewed suggests an operational link between imagery, affect, and right-hemispheric efficiency that appears consistent with dual coding theory's approach to emotions. Functional interconnections may explain how words acquire affect-arousing qualities through referential processing to trigger an emotional reaction. Evidence continues to mount and while there are few comprehensive summaries, Kosslyn's (1994) book, *Image and the Brain: The Resolution of the Imagery Debate* has compiled considerable neuropsychological evidence from a wide range of studies. He concludes that there is no question that mental imagery is a vital mental phenomenon that is functionally and anatomically distinct from language. The dual coding assumption that verbal-nonverbal referential experience results in the development of functional interconnections or associative pathways is consistent with an epigenetic account of emotions and mental imagery described in Chapter IV.

It is important to remember that the strict controls used in laboratory study are once again, hardly representative of actual experience in the natural world. In considering the evidence supporting dual coding theory as a general theory of cognition and its extension to accounting for reading phenomena, I recommend maintaining a sense of humility in confronting the sheer number and complexity of neuronal networks in the brain. The following description should provide us with an idea of the astonishing nature of the brain.

Each nerve cell receives connections from other nerve cells at sites called synapses.... [T]here are about one million billion connections in the cortical sheet. If you were to count them one connection (or synapse) per second you would finish counting some thirty-two million years after you began. (Edelman, 1992, p. 17)

To his credit, Paivio (1986) characterizes his review of neuropsychological evidence as a “theoretical sketch” (p. 276) and concedes that it does not yet account for the biochemical activity and other structures that play a potential role in representational activity.

Nevertheless, I believe that correspondences between neuroanatomical distinctions and functional differences continue to make a valid contribution to the construction, elaboration, and refinement of cognitive theory and models of reading when viewed with the understanding that it is *individuals* and not “brains” that represent the world (Edelman, 1992).

Conclusion

At this point in the discussion, what should be becoming more and more apparent is that imagery performs a number of important functions that are inadequately met by

formal syntactical structures alone. Images are dynamic insofar as unlike words, they “can be easily transformed, manipulated, and used flexibly” (Paivio, 1991, p. 266).

Words might be “the images of things,” (cited in Paivio, 1991, p. 253) as Simonides once proclaimed but as we shall read in Chapter V, images allow the writer and reader to get at what is intentionally important to them. In Chapter IV, I will begin to investigate the structure and function of emotions as products of an embodied and evolutionary existence and how both imagery and affect come to constitute central elements of human consciousness and the phenomenal experience of readers.

CHAPTER IV

READING AS AN EMBODIED ACT

Introduction

The wonderful thing about language is that it promotes its own oblivion: my eyes follow the lines on the paper, and from the moment I am caught up in their meaning, my eyes and body are there only as the minimum setting of some invisible operation.

-Merleau-Ponty, *Phenomenology of Perception*

In Chapter III, the structure and function of imagery and affect were described in terms of the integral role they play in the cognitive act of reading. Studies that help us come to know the neuroanatomical organization of the brain are instructive in postulating theories of cognition but are presently insufficient in terms of understanding how the body interacts with the world to produce a developing sense of self. Furthermore, we need to understand the origins of sensory imagery and emotions if we are to comprehend how they might contribute to the phenomenal and embodied experience of readers. In the present chapter, emphasis shifts from the functional distinctions of the brain to the body's direct relationship to human consciousness and the critical role of imagery and affect in shaping a sense of self.

For the most part, human consciousness remained “an entirely private, first-person phenomenon which occurs as part of the private, first-person process we call mind” (Damasio, 1999, p. 12). As such, it has been relatively absent from scientific third-person discourse and left to philosophical introspection. Broca's and Wernicke's

discoveries of a connection between language and specific regions of the left-hemisphere of the brain in the mid-nineteenth century opened the door to correlating the private with the public, that is, the mechanisms of the mind with behaviors (Damasio, 1999). As we have seen, observations of people with lateral brain lesions and those in whom the connecting tissue between the two hemispheres of the brain has been damaged provide valuable insights into the functional asymmetry of the brain. Scientific probes such as functional resonance imaging (fMRI) and positron emission tomography (PET) make possible more detailed and precise observations of neuronal activity to inform our understanding of the structure and function of the brain in both neurology patients and humans without brain diseases.

Neurological observations and neuropsychological evidence combine to give us a more comprehensive picture of how activity in the brain corresponds to behavior. Some of the most interesting ideas emerging from this constructive alliance relates to the critical relationship between consciousness and emotions (Damasio, 1999, 2003). From an evolutionary and pragmatist perspective, I stress, however, that knowledge about brain activity can never fully account for human behavior. According to Edelman (1992), “[t]he brain and the nervous system cannot be considered in isolation from the states of the world and social interactions. ...[S]uch states, both environmental and social, are indeterminate, and open-ended” (p. 224). At the same time, Edelman (1992) warns, “The notion that we can think about how mental matters occur in the absence of reference to the structure and function, development, and evaluation of the brain is intellectually hazardous” (p. 68). In this chapter, I examine the biological basis for imagery and affect. Later in Chapter 5, I extend the investigation into the affective realm of consciousness to

include the historical and social bases for emotions to explain reading as an act of emotional intentionality.

Antonio Damasio: Two Types of Images

Damasio (1995, 1999, 2003) describes a neurobiology of consciousness in which the brain maintains a representation of what is going on in the body. Consistent with Sadoski and Paivio's (2001) contention in dual coding theory in reading that meaning cannot occur without the activation of images, Damasio's (2003) "feeling brain" is based on the premise that "the ability to perceive objects and events, external to the organism or internal to it, requires images." He describes two types of images. Images of the flesh are associated with changes that occur throughout the interior landscape of the body and are therefore referred to as somatosensory images. Examples of this type of imagery include pain, nausea, and pleasure. Sensory images are those associated with specialized body parts responsible for perceiving external changes such as the retina in the eye, the cochlea in the ear, the vestibular nerve also located in the ear, the olfactory nerve endings in the nose, the gustatory papillae on the tongue, and the nerves endings throughout the skin. Regardless of the type of body image, the method of production is the same. Activity in body structures results in momentary structural changes. The brain constructs maps of the changes affecting the body state in a number of appropriate regions which give rise to emotions and feelings.

Emotions and Feelings

In his account of a "feeling brain," Damasio (2003) makes a functional distinction between emotions and feelings and then later recombines them under the heading of *affect*. Affect refers to human emotion and feeling including drives, motivations, and

desires. According to Damasio, emotions play out in the theatre of the body. They are triggered by what he refers to as an emotionally competent stimulus (ECS) which he defines as “a certain object or situation actually present or recalled from memory” (Damasio, 2003, p. 57). For example, the *actual sight* of Picasso’s *Guernica* or the verbal auditory *mental representation* of Sylvia Plath’s haunting recitation of her poem “Daddy” and its accompanying nonverbal visual imagery potentially serve to trigger neural and chemical responses leading to visceral changes. Literary works emote in such a way as to reflect their narrative structure. For example, suspense novels and “thrillers” depend upon the continual and increasingly intensifying evocation of a visceral and embodied response. Similarly, Aristotle was quick to recognize that the catharsis in tragedies is achieved through the sudden suspension of a “steadily induced state of fear and pity” (Damasio, 1999, p. 59). Furthermore, the pattern of ratings for emotional responses in two studies (Krasny & Sadoski, 2004; Sadoski, Goetz, & Kangiser, 1988) investigating the relationship between imagery and affect as readers read short stories clearly demonstrates the correspondence between heightened emotional response and the rising action of the plot.

Emotions can often be detected by such outwardly physical manifestations as a change in vocal timbre and pitch, facial expression, and tensing of the muscles. In studies, neuroscientists can use scientific probes such as magnetic resonance imaging (MRI) producing refined images of the brain and positron emission tomography (PET) which measures the amount of blood flow in multiple brain areas⁵ to detect emotions that are not visibly apparent. According to Damasio’s account of the “feeling brain,”

⁵ Damasio (2003) explains that the amount of blood flow ultimately corresponds to the amount of local neuronal activity.

emotions are part of the basic mechanism of life regulation helping the body achieve homeostasis.

Feelings, on the other hand, play out in the theatre of the mind and are always subsequent to emotions. They are not overtly detectable and therefore present a potential, but not insurmountable, challenge to empirical research. In Damasio's account of body and emotion, feelings are *mental images* of objects and object-organism relationships. Here we see some important differences between the ways dual coding theory and Damasio's account of a "feeling brain" conceptualize mental images. Whereas in dual coding theory, mental images and emotions are shown to correlate as evinced by the many studies conducted in the reading field, Damasio suggests that feelings and mental images are one in the same and are inseparably linked to emotions in a complex chain of events that constitutes *affect*.

Damasio's assertion that emotions are antecedent to images is supported by new experimental evidence emerging from studies investigating the patterns of brain activity in association with experiencing certain feelings. He describes a study (Damasio, Grabowski, Bechara, Damasio, Ponto, Parvizi & Hechwa, 2000) in which participants were asked to recall a powerfully emotional episode from their life and raise their hand to signal when they began to feel an emotion. What Damasio (2003) and his colleagues found was that "*changes in skin conductance [as measured by electric monitors] always preceded the signal that a feeling was being felt* (p. 101). I would, however, contend that participants were not likely to share the same semantic non-difference between "images" and "feelings" as the researchers. According to the instructions, participants were instructed first to conjure up images of a past experience and then to indicate when they

began to feel a feeling. Whether we call the recalled episode “feelings” or “images,” it arguably served, to use Damasio’s term, as the emotionally competent stimulus preceding the emotional reaction recorded by the sensors, and this emotional reaction is likely to have triggered yet other “feelings.”

The study, however, seems to have successfully captured the complex chain of events Damasio describes as affect. Nevertheless, I have the impression that the beginning of a “feeling” reported by participants and the emotional response recorded by the monitors relate to one in same phenomenon and that the results may merely indicate that the monitor is more efficient in reporting somatic changes. In other words, it might take less time for the monitors to signal changes in skin conductance than it takes for the brain to receive and interpret the stimulus and respond by sending the appropriate message to the muscles in order to raise a hand. I am left with the thought that any modification made to the stimulus as a result of the brain’s interpretation might be the qualifying difference implied in Damasio’s distinction between emotions and feelings.

Shakespeare, Shadows, and the “Chicken and the Egg”

In Damasio’s (2003) reformulation of Richard’s soulful remark near the end of Shakespeare’s *Richard II*, the neuroscientist makes clear his contention that it is *feelings* (mental images) that are “mostly shadows of the external manner of emotions” (p. 29). The lines from the play read:

‘Tis very true my grief lies within

And these external manners of laments

Are merely the shadows of unseeing grief

That swells with silence in the tortur’d soul (IV: I: 305-308)

In Damasio's opinion, Shakespeare astutely understood that affect can be analyzed in parts but he was mistaken to think that the "external manners of laments," that is to say, Richard's emotions were "shadows" of the feelings of "unseen grief" that lies within. Damasio informs us that it is emotions that are externally detectable and antecedent to feelings or mental images. Hence, it is the internal "grief" that is the mere shadow of visible emotions. In both dual coding theory and Damasio's neurobiology of consciousness, images are assumed to be mental representations resulting from the neural mapping of sensory experience. There is nothing to say that the verbal-nonverbal representations described in Paivio's dual coding theory are simply called "feelings" in Damasio's neurobiology of consciousness. We are, however, left to ponder the proverbial "chicken or the egg" question for what is in contention is the order in which images and emotions occur.

In Paivio's (1986) theory, it is implied that emotional reactions result from the prior activation of verbal or nonverbal representations. From a dual coding perspective, objects and words must be processed at least up to the representational level in order to evoke an affective response. Paivio explains that in the case of objects and events that are highly emotive, the cognitive route can be fairly direct. This is more likely to occur with nonverbal representations. A review of the findings of studies investigating the representation of emotions (Bryden & Ley, 1983) indicate that like nonverbal imagery, the perception and expression of emotion are localized in the right hemisphere of the brain. From a practical perspective, the argument as to what comes first, images or emotions, does not matter in the constant volley between emotional responses and the formation of images. In short, imagery and affect are implicated in a sustained two-way

network in which emotional responses trigger the production of images which in turn trigger emotions.

Damasio's contention that images are themselves, an affective response appears to confound the relationship between imagery and affect described in dual coding theory. The difference, however, may be subtler than the nominal difference between Paivio's "images" and Damasio's "feelings" suggests. Damasio's (1999) following explanation of textual transactions seems fairly consistent with the assumptions in dual coding theory.

The words that I am using to bring these ideas to you are first formed, however briefly and sketchily, as auditory, visual, or somatosensory images of phonemes and morphemes [*logogens* and *imagens*], before I implement them on the page in their written version. Likewise, those written words now printed before your eyes are first processed by you as verbal images before they promote the activation of yet other images, this time non-verbal [*imagens*] with which the "concepts" that correspond to my words can be displayed mentally. (p. 319)

It would appear that both Paivio and Damasio have reached some of the same conclusions about how writers and readers use mental representations to process verbal text.

I believe that the discrepancy between theoretical conceptualizations of feelings and images relates directly to the controversial relationship between cognition and affect. A more traditional view assumes that cognition and affect are two separate phenomena and that affective responses follow cognitive identification and interpretation of a verbal or nonverbal stimulus (Paivio, 1986). Zajonc (1984) presents an opposing view which maintains that affect is part of cognition implying that affective reactions can occur

without stimulus recognition. According to Paivio, dual coding theory adheres more to the traditional view that cognition and affect are separate, but the theory is flexible enough to consider the reverse causal relationship in which an emotional state increases the probability of activating relevant verbal-nonverbal representations. Continued efforts to understand how psychological processes relate to physiological ones should help reconcile definitional differences and contribute to a resolution of the debate. Presently, I am of the opinion that deciding as to whether an affective reaction is possible before stimulus recognition depends upon at what point in cognition we can say that an object or event has been identified and what role does imagery and affect play in the process of object identification. My initial response to what is now known is to adopt a more holistic and embodied approach and to state that sensory perception is at the origin of stimulus recognition. Since it appears that imagery and affect function to maintain the “wax impression” of the object or event initially perceived, they are unquestionably implied in all subsequent cognitive processing but do not operate in isolation of other faculties.

Dewey (1905/1977) postulates qualitative differences between the affective response associated with the initial perception of an object or event and that associated with the subsequent cognition of the same object or event. In the process of moving from perception to cognition, the human mind seeks to resolve the tension between the known and unknown by relating the unknown to previously formed categories grounded in experience. Dewey describes the reconfiguration of the mental imagery that transforms an unknown and *fearsome* noise into the known and less startling *tapping of a shade against a window* to illustrate his postulate of immediate empiricism. In the process of

moving from a *fearsome* noise (Damasio's ECS) to the known *tapping of a shade against the window*, the experience has changed. This change is effected through a cognitive process in which the perceiver relates and contrasts the experiential content of being frightened to subsequent experience in order to determine that the noise is due to the tapping of a shade. In other words, the noise has been *cognized*. Dewey asserts that while the content of the latter experience is cognitively regarded as truer, the content of the earlier more immediate experience is no less real. Our subjective consciousness is constructed through our interactions with an objective world which is further influenced by a social, cultural and historical context. This brings to mind important questions about whether literature classes can or should, to use Frye's (1963) expression, educate the imagination and whether the resulting reinterpretations are any "truer" than the reader's initial lived-through experience of the text.

The Biological Origins of Imagery and Affect

Damasio (1999, 2003) contends that the sustained two-way network of emotions and feelings (images) is the bedrock of human consciousness. He claims it is so ubiquitous that at most times we are not aware of it. While nonhuman creatures appear capable of emotion, there is something distinctly human in our ability to use emotions and imagery in the apprehension of complex ideas and in the development and application of values, principles, and judgments (Bronowski, 1978). Both Edelman (1992) and Damasio (1999, 2003) present convincing evidence that the pervasive presence of imagery and affect can be traced to the evolution of mind and body.

As organisms develop within their environment, they acquire factual and affective experience with a range of objects and situations. As a result of interacting with our

social and natural environments, objects and events are represented by neural patterns constructed in the appropriate sensory cortices of the brain. It is important to note, “the patterns of nervous system response depend on the individual history of each system, because it is only through interaction with the world appropriate response patterns are selected” (Edelman, 1992, p. 226). As a result, “brains possess enormous individual structural variation at a variety of organizational levels” (Edelman, 1992, p. 224). Different experiences will result in differences between individual nervous systems and within a single system over time. In sum, no two persons are likely to form exactly the same images of the same object or event or respond in exactly the same manner to a particular stimulus.

Damasio (1999) explains that emotions and feelings work to connect “virtually every object or situation in our experience, by virtue of conditioning, to the fundamental values of homeostatic regulation” (p. 58). Homeostasis is defined as the coordinated and seemingly automated physiological reactions required in maintaining an internally consistent body state. Examples of biological mechanisms used to achieve homeostasis include among other things, the automated regulation of temperature, pH and oxygen levels, the production of antibodies, and the complex combination of chemical and neural responses that constitute an emotion-proper. Damasio (1999) further claims that homeostatic regulation is the key to the biology of consciousness.

In an evolutionary sense, the construction of neural patterns is both dependent upon the genetic make up of the brain and body and epigenetic events that is to say, events that occur contingent upon certain previous events having taken place. For example, as we will read later, the ability to represent and think in images was likely a

necessary step in the evolution of human language. Complex behaviors such as emotions have both genetic and epigenetic components. As Edelman (1992) explains: “Selection not only guarantees a common pattern in a species but it also results in individual diversity at the level of the finest neural network” (p. 64). The brain is a dynamic and self-organizing system. Its potential for diversity and variability as indicated by the sheer number of possible connections described earlier precludes any possibility of the brain functioning as a computer. Imagery and affect are a direct result of the brain constructing neural patterns that map the object-organism relationship. Studies of perception, learning, memory, and language (including reading) have provided us with a general idea of how the brain processes objects and events in sensory and motor terms. This embodied knowledge of the world in the form of sensory images allows the body to anticipate future interactions. According to Bronowski (1978), the ability to image or represent what is absent in memory is an evolutionary advantage that humans have over other forms of animal life. Furthermore, Bronowski contends that the human capacity to combine and reconfigure images in novel ways is ultimately the basis for all invention and creativity.

The Body as the Emotional Main Stage

William James proposed that feelings are the perception of the actual body state changed by emotion. The body as the emotional epicenter is similarly captured by Arendt’s (1971) remarks equating “moods and emotions” with “the continual change of our bodily organs” (p. 32).

Every emotion is a somatic experience; my heart aches when I am grieved, gets warm with sympathy, opens itself up in rare moments when love or joy

overwhelms me, and similar physical sensation take possession of me with anger, wrath, envy, and other affects. (p. 33)

By and large, Damasio's (1999; 2003) neurobiology of consciousness supports James' conjecture that feelings reflect the changes in the body state. However, it is understandable that from a contemporary point of view, James' basic idea now appears incomplete. Damasio (1999) offers an added dimension to James' contribution. Where James understood the body to be "the main stage for emotions" (Damasio, 1999, p. 287), according to Damasio (1999), "emotional responses target *both* body-proper and brain" (p. 288). In other words, the body receives emotionally relevant information through several sources. Effectively, the brain produces changes in neural processing that form much of what we conceive of as feeling. Relevant information often travels in nerves such as the vagus. These nerves exit and enter the brain at the level of the brain stem.

Until recently, James' original idea has traditionally come under criticism by those who would argue that input from the body cannot possibly provide emotionally relevant information since patients with spinal cord damage are still able to emote and feel. In refuting the body-proper as the exclusive theatre for emotions and expanding our understanding of the corporal theatre to include everything above the neck as well, Damasio (1999) is able to dispel the attacks of James' critics. While I hesitate to wander too far astray into laboratory experiments using non-human subjects, Damasio (1999) cites McGaugh's work with both humans and rats to support his contention regarding the role of the vagus nerve. I believe that McGaugh's work connects in an important way to reading research investigating the relationship between affective responses and text recall and for this reason, I have decided to include a brief summary of the findings.

Studies by McGaugh (1989, 1990) using both humans and rats found that learning and recall were enhanced by emotional responses. McGaugh (1990) demonstrated that if you hear two stories of comparable length, with a comparable number of facts, but different in terms of the level of emotional content, you will recall significantly more detail from the emotionally charged story than from the other. This is consistent with the findings from a study by Hidi and Baird (1988) that investigated the immediate and delayed recall of expository text. The researchers noted that expository materials such as textbooks are not written in a captivating or interesting way and as a consequence, they lose rhetorical sway. Hidi and Baird revised a science-biography text in ways to promote greater reader interest and presented it to fourth- and sixth grade students. The students were asked to provide written free recalls immediately after reading the text and after a one-week delay. The results showed that students recalled more of the modified text than the students in previous comparable studies had recalled of standard science and social studies texts.

Similarly, in experiments using non-human subjects, rats performed better on a standard learning task when a certain amount of emotion occurred at specified times. Continued experimentation with rats provides some intriguing physiological evidence from which we can only make inferences about the neural processing involved in human emotion and feeling but is compelling nonetheless. McGaugh and his colleagues found that when the vagus nerve of the rats was severed, emotion no longer aided their performance. The results suggest that the particular visceral input necessary for the type of emotion that enhances learning and recall is supplied to the brain through the vagus nerve.

Embodied Reading

Earlier in Chapter III, I drew attention to the importance of “bodyreading” (Grumet, 1988) in which the text is made corporeal. Sadoski and Paivio (2001) explain that mental imagery was the foundation for ruminative reading in the Middle Ages whereby the text was literally incorporated into the senses through a “murmuring meditation” (Sadoski and Paivio, 2001, p. 19). Etymology provides us with valuable historical insights into the connections between mental imagery and ruminative reading in which the text was “reheard, reseen, refelt, and reexperienced” (Sadoski & Paivio, 2001, p. 19). As I pointed out earlier in the introduction, the Anglo Saxon *rædan* and the German *rathen* capture the perceptual and empirical dimensions of reading as the act of uttering aloud or reciting inaudibly, of taking in the sense of words, and of learning by observation. But to fully understand reading as embodied act, we must return to the Latin verb *ruminare*—to ruminate.

In “Bodyreading,” Grumet (1988) goes into considerable detail to explore the etymological implications of ‘reading’ as *ruminare*. Borrowing from Merleau-Ponty’s “body subject” as human consciousness, Grumet intends to bring reading home to the body where it belongs and rescue it from the “inaccessible reaches of idealism” (p. 129). Like Grumet, I maintain that modern schooling has functioned in ways that excise the body and the sensual from anything we deem has educational merit for children. Casting aside the phenomenal experience of the reader to accommodate instruction based on a hierarchy of discrete skills and the demand of aligning with policy makers’ criteria for “scientifically-based evidence,” the aesthetics of bodyreading remains exiled as a curriculum project worthy of pursuit. Grumet creates the persona of the body reader to

establish the act of reading as oriented toward intentionality. She urges us to remember that the symbolic system of language, number, art, and culture emerged as part of our lived worlds. Symbolic thought directly evolved from the desire for human expression. As Merleau-Ponty (1962) reminds us, we must look beyond the delimiting meaning of words and take in account the emotional content of words.

It would then be found that the words, vowels and phonemes are so many ways of ‘singing’ the world, and that their function is to represent things not, as the naïve onomatopoeic theory had it, by reason of an objective resemblance, but because they extract, and literally express, their emotional essence. (p. 187)

According to Grumet’s etymological account, ruminants are animals—cattle, sheep, goats, antelope, deer, and giraffe—that graze in the fields. Grumet highlights the elaborately planned digestive system of ruminants which allow them to grab a meal and temporarily store it in a convenient compartment of the stomach until such time as they can leisurely masticate and digest it. Interestingly, it is the fourth and last stomach containing the gastric glands for the secretion of digestive juices that is called the *read*. Further delving into the etymological past of the word *read*, reveals that at one time, the *reid* also signified the stomach of a human. Etymology also connects the word ‘read’ to the “sense of considering or explaining something obscure or mysterious” (Grumet, 1988, p. 133). The text becomes in Grumet’s (1988) view, “another stage where the possible worlds that the texts points to can be identified and experienced as good places for grazing” (p. 149)

Like Lodge (2003), Kundera, (1988) and Watt (1957), who recognize that the novel may represent the best record of human consciousness we have, Grumet describes

reading as an “anatomy of mystery” lodged within us that “seeks what is hidden, internal, unseen in our experience” (p. 133). Consider, for example, how in *Where the Wild Things Are*, Sendak (1963) engages the child’s capacity to exercise the power of myth and liberate the psyche in order to confront the shadow of the unconscious. Max’s adventure to “where the wild things are” could very well represent the first step in the slow and life long process of individuation. Among the “wild things,” Max can discharge his anger and proclaim himself “the most wild thing of all.” Childhood emotions play out in “Dionysian abandon” (Cech, 1995, p. 1) across a double-page spread in which Max’s coronation as king of all wild things culminates in a “wild rumpus” that Cech (1995) describes as “a complete, pre-Oedipal submersion in the child’s ecstatic eroticism...a primal, orgiastic moment when the child’s deepest hungers can be satisfied” (p. 120). Here is a work that dares to acknowledge the fears, anxieties, and sexuality of children. The idea of ruminative reading, the chance to embody the text and mull over our own intentions, assumptions, and positions in light of the possibilities presented in the text seems incongruent with locating meaning in the topic sentence and in the story structure. This may explain why empirical studies (Sadoski, Goetz, & Kangiser, 1988; Sadoski & Quast, 1990) have shown that mental imagery and emotional response, both products of an embodied mind, have a significant relationship independent of importance in both literary and expository texts.

One way to bring reading home again and pay greater attention to the aesthetic experience of young readers is to offer children within their assortment of books, a selection of works that incorporate rhyme, rhythm, and repetition. Earlier, I suggested that children’s chants were somewhat akin to the murmuring meditations of medieval

monks who through a process of repeated verbal, visual, auditory-motor encoding incorporated the text into their senses. In order to illustrate how the rhythmical quality in children's verse might serve to bring reading back to its symbolic roots, it is necessary to introduce Susanne Langer's (1957) account of the evolution of speech and language.

Susanne Langer and the Evolution of Language

Langer (1957) describes the evolution of language according to our need to represent reality symbolically. Like Bronowski, Langer claims that between "the clearest animal call of love or warning or anger and man's least trivial *word*, there lies a whole chapter of evolution" (p. 103). Symbol making, Langer contends, began with representing the aesthetic sense of the object or event. She emphasizes that the transformation of experience into concepts, and not the elaboration of signals used in communication, served as the primary motive for language. Langer's (1962) assertion that "the whole mechanism of symbolization was probably worked out in the visual system before its power could be transformed into the vocal-auditory realm" (p. 49) suggests that language evolved in the service of mental imagery. In other words, in the evolution of human development, thinking in images preceded thought as language.

Vocalization appears to have originated in primitive festival rituals. Vocal ululations expressed a highly emotional state and eventually became associated with rhythmic body movements and ritual objects used in dance. Langer (1957) explains:

The voice could be used; like the drum, to attract attention and accentuate rhythm; and this the force of a change of pitch to make some notes stand out (one in four, etc.) was naturally discovered. Being more valuable than the drum, voices soon

made patterns, and the long wandering melodies of primitive song became an integral part of communal celebration. (p. 130).

Over time, these vocalizations began to symbolize or bring to memory mental representations of the gestures and objects outside of the context of the ritual itself. Articulate noises in the form of groups of syllables began to emerge in relation to specific festivities centered around a central figure as in a celebratory hunting dance around a fresh kill or a death dance around a corpse. These articulate noises first expressed the affective response, that is, the particular feelings or perceptions of the players engaged in ritual festivities. Eventually, the mental imagery associated with these sounds became sufficiently vivid and consistent that these articulate sounds came to symbolize the ritualistic objects and events themselves.

It is this evolutionary acquisition of language that furnishes us with the descriptive power to link one mental image to another (Edelman, 1992). Language provides us with an enhanced ability to hold knowledge in mental display and manipulate it intelligently (Damasio, 1999, 2003). Moreover, this higher-order consciousness allows us to maintain a representation of ourselves as having a social self capable of acting upon, or being acted upon by, an environment. In other words, animals may be aware, but humans are conscious of having a consciousness.

Toward an Embodied Curriculum

I am suggesting that if we are to adopt Grumet's curricular project of bringing reading home to where it belongs, we might start by honoring the emotional and imagistic roots of language within our reading and language arts instruction. The origins of language resonate in the chants of children at play and are embodied through the

accompanying rhythmic beating, clapping, bouncing and skipping. Yet sometimes, parents and educators look disparagingly upon predictable books, such as Bill Martin's (1970) highly popular *Brown Bear, Brown Bear* or Arnold Lobel's equally engaging and visually exciting picture book *On Market Street* that incorporate the basic elements of rhyme, rhythm, and repetition as materials for early reading instruction because it appears that children are merely memorizing and not actually 'reading' the text. A book such as Bill Martin's *Chicka Chicka Boom Boom* (1989), however, is more likely to be used in classrooms because in addition to capitalizing on children's natural propensity to chant, the book teaches letter recognition—a skill that holds primary status among the hierarchy of early language skills taught in schools.

Perhaps cast aside in favor of more decodable texts, I would argue that shared reading of these cadenced literary works and the often accompanying rhythmic gestures engage early readers in a pleasurable state in which they undergo an embodiment of language similar to that experienced through the vocalizations and rhythmic body movements in primitive rituals. Consistent with the evolutionary origins of language, Carl Orff's approach to music for young children seeks to bring out the inner rhythm of each child and holds that music lives first in the body and then in vocal and instrumental expression. I believe that early language development would benefit from beginning by drawing out the inner music in each child. "Song, the formalization of voice-play," Langer tells us, "probably preceded speech" (p. 128). Jespersen concluded, "there was once a time when all speech was song, or rather when these two actions were not yet differentiated..." (quoted in Langer, 1957, p. 129). By denying children opportunities to reunite language with its musical and embodied roots, educators are missing valuable and

engaging opportunities for developing phonological awareness and, as we have seen with childhood verse, memory skills—both considered desirable in good readers.

Unfortunately, in many North American early years classrooms, any hope of an enriching literature-based reading program which has as its mainstay the literary works that potentially arouse vivid imagery and affective responses has succumbed to the fate of so-called educational frills. Rigorous testing standards and political agendas have, to a large degree, determined the commercially packaged materials used with children learning to read. As a consequence, class libraries and school literacy labs (as in laboratory) are filled with collections of “little books” organized and codified alphabetically or numerically in hierarchical fashion according to such textual features as the number of decodable words, the number of return sweeps on a page, the ratio of text to illustrations, and at more advanced levels, the number of multisyllabic words, sentence length, and the number of pages. It is important that teachers are aware of the textual features that may aid or inhibit children’s access to meaning in print materials and are able to respond to children’s individual needs and design instruction accordingly. Nevertheless, I’m sure that when E. B. White wrote the beloved *Charlotte’s Web* he did not stop to think whether he was writing for an “L” or a “P” audience of readers. He wrote however, convinced of literature’s potential to arouse the human emotion of compassion by narrating the relationship between a spider and a pig.

On some level, I suspect that it is this embodied quality of reading that helps ground us. Reading to my students every morning provided us both with the opportunity to take emotional stock of our lives. This has to be considered at least as important as recalling the precipitating events that lead to the story’s climax. As Grumet (1988)

suggests, the body reader “pores over the text, like the priest reading the entrails, seeking signs of how to live” (p. 133). Arthur Danto (1985) explains the regenerative potential of literature as a window into consciousness:

...a kind of mirror, not simply in the sense of rendering up an external reality, but as giving me to myself for each self peering into it, showing each of us something inaccessible without mirrors.... Each work of literature shows...an [external] aspect we would not know were ours without benefit of that mirror: each discovers...an unguessed dimension of the self. It is a mirror less in passively returning an image than in transforming the self-consciousness of the reader who in virtue of identifying with the image recognizes what he is. Literature is in this sense is transfigurative. (p. 79)

The corporeal embodiment of the text has yet to be fully understood in terms of how story might provide a narrative roadmap for negotiating life. In *The Birth of Pleasure*, Carol Gilligan (2002) writes of how the love story of Psyche and Cupid can lead to the path of resistance and pleasure thus diverting us from the loss and betrayal typically portrayed in Greek mythology. But the path to pleasure through embodied narrative need not be this complex. Over the years, I have had the joy of reading with children from a wide range of social, economic, and ethnic and racial backgrounds. Many of these children entered my classroom with an assortment of labels identifying them as special needs. One such student diagnosed with Tourette’s syndrome shared my love of A. A. Milne and the simple wisdom of Winnie the Pooh. Each morning, he entered through the doorway of my grade four/five classroom, caught my eye, and with a spring in his step walked toward me chanting:

The more it snows

(Tiddely pom),

The more it goes

(Tiddely pom),

The more it goes

(Tiddely pom),

On snowing.

And nobody knows

(Tiddely pom),

How cold my toes

(Tiddely pom),

How cold my toes

(Tiddely pom),

Are growing. (Milne, 1957, p. 161)

I believe this how he managed to find his way to his seat each day.

Conclusion

From the discussion on reading as an embodied act, we have seen that the body acts as a kind of emotional mainstage. The images encoded from our experiences are not just sense-specific but are invested with emotional associations as well. I have suggested that curriculum should pay greater attention to the embodied nature of reading and pointed to its cognitive and psychological benefits. Langer's (1957) account of the evolution of language makes clear the contributing role of imagery and emotions in defining language as first and foremost an expressive act. In Chapter V, I examine to

what extent current theories of cognition can account for the phenomena associated with the aesthetic response to literature and how the imagery and affect are related to an developing sense of self.

CHAPTER V

READING AS AN AESTHETIC ACT

Introduction

We read books to find out who we are. What other people real or imaginary, do and think and feel...is an essential guide to our understanding of what we ourselves are and may become....

-LeGuin, *Language of the Night*

In the preceding chapters, I have attempted to show that a renewed understanding of the structure and function of imagery and affect gives us cause to reexamine the assumptions in prevailing theories of reading comprehension. In the present chapter, I rely on Edelman's (1992) and Damasio's (1999, 2003) account of human consciousness to make clear why computational models of the mind that have had a dominant influence on contemporary reading theories are inadequate in accounting for the richness and diversity of the aesthetic response to literature. I discuss how a neurobiologically informed understanding of the development of consciousness and an emerging sense of self might provide insights into the psychological effects of undergoing the text. As an embodied theory of cognition, dual coding theory maintains a theoretical advantage insofar as it recognizes the powerful role imagery and affect play in human thought processes. The underlying premise in dual coding theory that mental representations retain some of the concrete qualities of the external experiences from which they are derived suggests that literary transactions yield sufficiently vivid perceptual experiences that constitute the reader's autobiographical consciousness.

In the second part of the chapter I reexamine the animating role of the reader in two prevalent theories of reader response in light of what we know about human consciousness and the embodied mind. Reader response theorists, Louise Rosenblatt and Wolfgang Iser believe that the convergence of the text and reader brings the literary work into existence. Iser (1978, 1980) claims to adopt a phenomenological perspective by which the text engages the reader's creative participation. Rosenblatt (1978) has enjoyed considerable recognition for her transactional theory of reader response in which she claims "a text, once it leaves its author's hands, is simply paper and ink until a reader evokes from it a literary work—sometimes, even, a literary work of art" (p. ix). In reviewing the selected theories, I hope to offer the reader a neurobiologically informed account of how literary response occurs and the extent to which such an explanation can help us qualify our understanding of the phenomena described in each of these theories.

Consciousness Defined

There appears to be no consensus among psychologists, neuroscientists, or philosophers as to a clear definition of consciousness. The situation is somewhat analogous to the seemingly impossible task of defining the actual moment life begins. Nevertheless, the simple dictionary definition of consciousness cited in Damasio (1999) "as an organism's awareness of its own self and surroundings" (p. 4) provides us with some sense of how humans have evolved in such a way as to make such things as the arts, sciences, religion, and social and political organizations possible. However, it is also true that consciousness allows us to know and experience a range of emotions.

Damasio's (1999) separation of consciousness into simple and complex kinds is helpful in developing our understanding of the structure and function of imagery and

affect in reading literary texts. Damasio refers to the simplest kind of consciousness as core consciousness. Core consciousness relates to the organism's sense of self within a present moment in time. It has to do with the sense of self that emerges in the here and now of perception which neither projects the future nor recalls the past outside of the instant occurring just before. In other words, core consciousness amounts to a basic awareness of the object-organism relationship. Extended consciousness, on the other hand, is far more complex and relies extensively upon the ability to map emotional reactions and form images in order to provide the organism with an elaborate sense of self. It enables us to see ourselves at a particular point in time in relation to a lived past and an anticipated future. In addition, we are aware of places outside of our immediate spatial position. Core consciousness remains stable across a lifetime and is not exclusive to humans. Extended consciousness evolves over the lifetime of the organism and while it is unknown to what extent it may be present in nonhumans, it does depend on conventional and working memory and is enhanced by the human acquisition of language. It is likely that extended consciousness is what Bronowski (1978) referred to as the considerable evolutionary advantage humans have over other species.

Two Kinds of Self

Damasio (1999) also offers two kinds of "self" which relate to the two forms of consciousness. The core self emerging from core consciousness is a "transient entity ceaselessly re-created for each and every object with which the brain interacts" (p. 17). What we traditionally think of as the "self" is connected to the idea of identity which corresponds to a "nontransient collection of unique facts and ways of being which characterize a person" (p. 17). Damasio refers to this entity as the autobiographical self.

The autobiographical self emerges from an organized record of past experiences of an individual organism which Damasio calls autobiographical memory. It is my contention that reading literature provides alternate ways of being and introduces new situations which contribute to the readers' autobiographical memory.

Both core consciousness and extended consciousness depend on the generation of images. As Damasio (1999) explains: "We become conscious...when our organisms internally construct and internally exhibit a specific kind of wordless knowledge—that our organism has been changed by an object—and when such knowledge occurs along with the salient internal exhibit of an object" (pp. 168-169). The first function of the image is to account for the organism-object relationship to inform the organism what is happening. Core consciousness is nonverbal and, as Damasio insists, is not a postlanguage phenomenon. Extended consciousness allows us to link up these representations in a meaningful and coherent manner, a process, I might add, which at some point, implicates language in considerable measure. Damasio suggests that the natural representation of sequences of images emerging from consecutive brain events may well be the source of the creation of drama and books. The brain most likely is obsessively engaged with wordless storytelling. Damasio posits that narrative storytelling probably began relatively early in terms of evolution and the development of the complex neural structures required to create narratives or brain maps. Consistent with Langer and Bronowski's evolutionary account, wordless storytelling precedes language and is in fact, a condition for language to emerge. Also of significance, Damasio contends that the philosophical problem of intentionality, that is to say, the fact that

mental events are always directed toward or “about” something external to the mind, relates to the brain’s disposition for storytelling.

Like core consciousness, extended consciousness depends on “the creation of mapped accounts of ongoing relationships between organisms and objects” (Damasio, 1999, p. 197). The difference between core and extended consciousness appears to lie in the expansion of the compass of knowledge resulting from the ability to hold multiple neural patterns in mind over substantial periods of time. Extended consciousness accounts for the ability “to generate a sense of individual perspective, ownership, and agency” (Damasio, 1999, p. 198) over a wider scope of knowledge. Yet, extended consciousness is not intelligence. Intelligence refers to the ability to manipulate the knowledge embodied by the extended consciousness allowing for the planning and execution of novel responses. Extended conscious is, however, a prerequisite for intelligence and furnishes the mind with vast domains of knowledge. It allows us to pay attention to a number of different mental events simultaneously.

Damasio (1999) also distinguishes between extended consciousness and working memory. Whereas extended consciousness relates to the ability of holding in mind multiple neural patterns over substantial periods of time, working memory relates to the ability to hold images in mind just long enough that they can be manipulated intelligently. For example, having just moved to a major city, I find myself repeatedly relying on my working memory in order to remember a set of detailed instructions in order to get from one place to another.

At this point, I would like to stop and mention that at no point thus far in this neurobiological account of consciousness has it been necessary to formulate complex

abstract amodal propositions or deep structures to explain how the brain maps the object-organism relationships and connects past experience to an anticipated future. The fact that humans develop an autobiographical self which allows them to situate themselves within a historical sequence of mental events long before they become competent at using a complex system of language strongly suggests that propositional accounts of how the brain accesses prior knowledge in the reading process simply do not make sense.

Damasio (1999) argues that while language allows us to hold images in place and manipulate them intelligently, the autobiographical self emerging from extended consciousness requires substantial memory capacity and reasoning ability but not necessarily language. Needless to say, reading literature does require an ability to recode and comprehend verbal language but we must always remember that language in turn, relies on extended consciousness—the internal deployment of recalled knowledge in different sensory systems and the subsequent abilities to manipulate that knowledge in response to the text. As the discussion of imagery and affect extends into aesthetic response and how literary engagement might help us discriminate better forms of human interactions, it might help to remember some of the mental abilities associated with extended consciousness. These include:

...the ability to create helpful artifacts; the ability to consider the mind of the other; the ability to sense the minds of the collective; the ability to suffer with pain as opposed to just feel pain and react to it; the ability to sense the possibility of death in the self and in the other; the ability to value life; the ability to construct a sense of good and of evil distinct from pleasure and pain; the ability to take into account the interests of the other and of the collective; the ability to

sense beauty as opposed to just feeling pleasure, the ability to sense a discord of feelings and later a discord of abstract ideas, which is the source of the sense of truth. (Damasio, 1999, p. 230)

In the following sections, I intend to make it clear why propositional accounts of reading cannot account for the extended consciousness required to respond to literature.

Literary Response and Extended Consciousness

The ability to convey feelings and emotions symbolically through literature and the arts is undoubtedly one of the most extraordinary consequences of human consciousness. Edelman (1992) argues that the artist's expressive content constrained by history, culture, education, and skill realized in works of art cannot be adequately analyzed by scientific methods abstracted from experience. This should come as no surprise since understanding and responding to poetry, novels, paintings, or symphonies "requires reference to *ourselves* in a social and symbolic mode" (p. 176). In other words, response requires an autobiographical or higher order consciousness which can only emerge through social, affective, and intersubjective exchanges.

Response to literary works and works of art requires attention to qualia. Qualia are phenomenal states comprised of "personal and subjective experiences, feelings, and sensations that accompany awareness" (Edelman, 1992, p. 114). Qualia are discriminated through different neural structures and behavior in different sensory pathways. Creatures that have only a primary consciousness and therefore lack conceptual selves cannot report or reflect upon qualia. Neither, I might add, can machines, and more importantly, machines do not have phenomenal experiences based in a social and historical existence. Humans, however, have the necessary extended or

higher order consciousness to be able to refine, remember, alter and report the subjective qualia of existence (Edelman 1992). Any computational theory of cognition premised on the idea that the brain is hard wired like a computer is totally inadequate in accounting for the human capacity to respond to literature because quite simply, “no convincing evidence for the kinds of codes that humans use in telegraphy, computing or other forms of human communication have been found in the human nervous system. (p. 27). In other words, such theories are biologically untenable. Cognitive architectures like the one Kintsch (1998) describes which are founded on a purely rational and abstracted level of analysis and which seek only to provide a convenient language to describe, predict, and postdict phenomena preclude any possibility of accounting for the qualia of subjective human experience fundamental to an aesthetic response to literature.

Literary Response and the Embodied Mind

As an embodied theory of cognition, dual coding theory has the explanatory potential to account for the mapping of sensory experience and the resulting mental imagery requisite to an emerging sense of self and the capacity to assume a spatial and temporal perspective in order to reflect upon mental events. The structure and function of imagery and affect as evidenced by empirical studies from a dual coding perspective explain how readers are able to interpret the qualia associated with the literary experience. For example, in a study investigating the relationship between imagery and affect among bilingual readers (Krasny & Sadoski, 2004), students in a Canadian French immersion high school read two short stories and in addition to a rating task, responded to a qualitative writing task in which they elaborated on the imagery experienced and feelings evoked while reading. Written reports of imagery were characterized by visual

detail and often included emotional descriptions. Students frequently made associative links to personal experience and events not contained in the story as captured by reports of the formation of mental images and the arousal of emotional reactions. This can be explained by the back and forth within system and across system processing in dual coding theory. Literary trope relies on this capacity to relate information represented in the text with external images. Abstract propositions are of little use in helping readers metaphorically project the images and affect evoked by a work upon situations and events foreign to its literal content. The capacity for story projection (Turner, 1996), is what makes *Gulliver's Travels* a political satire and not simply a children's tale.

A notable feature of many of the students' responses related to readers' capacity to empathize with the stories' characters and tentatively embrace their thoughts, feelings, and motives. A further elaboration of readers' empathetic identification and its potential for effecting individual and social change is discussed in Chapter VI. Readers in the study reporting emotional response often used a combination of first and third person statements to describe their personal feelings, to interpret the feelings of the characters, or to characterize a situation in the story. The study provided considerable evidence that the experiential uniqueness of individual readers also contributed to the arousal of imagery and affect. This was most often recorded in the associative connections made to individual experiences outside of the text. It would appear that the representational, associative, and referential processing described in dual coding theory provide us with an accounting of how readers access the vast domain of knowledge described as extended consciousness to respond aesthetically to the literary text. Much of this knowledge was stored as images and evoked within the reader powerful affective reactions.

I wish to re-emphasize however, that there are no *a priori* conditions that govern aesthetic response. The nature of human consciousness and the brain's morphology is such that no amount of knowledge about the structure and function of imagery and affect can predict the actual content of individual responses to a given text. And furthermore, given the often unpredictable and idiosyncratic nature of human existence that contributes to how the brain has mapped experience, no two readers will ever respond to the exact same text in exactly the same way. At the same time, dual coding theory and a neurobiology of consciousness can account for the similarities that exist among readers' responses to the same text. An embodied perspective would support Fish's (1980) contention that shared experiences among members of the same interpretive community are likely to promote similar values and attitudes. These may lead to the evocation of similar, but not identical, emotional responses and images. Nevertheless, a fundamental difference exists between Fish's (1980) theory and an embodied view of cognition. Fish (1980) contends that individual differences regarding the meaning of the text are subsumed by the immediacy of the interpretive community's "structure of assumptions" (Fish, 1980, p. 318). A biologically informed approach to language and reading suggests that the constraints on meaning emerge within the reciprocity characterizing the object organism relationship, in this case the relationship between reader and the text.

Concrete Language Effects

Apart from the fact that computer simulations are not a sufficient demonstration of human cognition (Edelman, 1992; Sadoski, 1999), the idea that information taken in by the reader is encoded as abstract propositions is inadequate in explaining the considerable evidence that concrete language encountered in text is remembered better

than abstract language. In a recent study investigating dual coding theory versus relational processing in memory for concrete and abstract words, Richardson (2003) found that concrete material that readily evokes mental imagery is much more easily recalled than abstract material that evokes mental imagery only with difficulty. Furthermore, the greater memorability of concrete language appears to be directly linked to the function of mental imagery as a mnemonic strategy. This mnemonic function of concrete language connects in an important way to the use of repeated images clusters (Spurgeon, 1935) that combine to lend the literary work its thematic unity.

If, as computational models of reading insist, all information derived from the text is encoded as propositions then readers should recall abstract and concrete language equally well but this does not appear to be the case. Neuropsychological evidence also exists to support the findings of the studies investigating language comprehension and memory. Using an electroencephalographic technique to measure activity in the cerebral cortex, West, O'Rourke, & Holcomb (1998) concluded that the brain behaves differently when reading abstract material compared with concrete material. Their findings provide clear evidence for the existence of an image-based representational system and demonstrate that verbal and nonverbal semantic systems are functionally and anatomically distinct. The conclusions drawn by the investigators provide strong support for Paivio's dual coding model of mental representations which regard imagery and language as separate but connected codes. The fact that empirical studies have consistently shown that concrete language is remembered better than abstract language suggests that the varying degree of language concreteness within the literary text may determine which images are immediately available to readers as they respond to the text.

Empirical Science and Subjective Consciousness

A theoretical advantage of dual coding theory over cognitive architectures is its testability. Damasio (1999) argues that the idea that subjective experiences are not scientifically accessible is nonsense. Without a doubt, the aesthetic response is a private, first person phenomenon. Nevertheless, Damasio contends that knowledge gathered from subjective observations, for example, first person accounts of feelings and images evoked during reading, can be checked for consistency and yield some form of measurement such as the rating scales used in the cited studies investigating the evocation of mental imagery and emotional response (Krasny & Sadoski, 2004; Sadoski, Goetz, & Kangiser, 1988; Steffensen, Goetz, & Cheng, 1999). Written and oral reports of imagery and affect can also be subject to a qualitative content analysis to examine patterns relating to the nature and type of responses to a given text or text situation. To my mind, such an approach can yield a richer and more detailed account of the phenomenal experience of readers. Case studies might benefit from interview techniques and the analysis of extended reflexive journal entries.

Regardless of the method selected, studying response requires the collection of readers' first-hand reports for as Damasio (1999) claims, "I will never know your thoughts unless you tell me, and you will never know mine until I tell you" (p. 309). In light of recent neuroscientific advances directed at establishing a biological link between emotions and images (Damasio, 1999, 2003), dual coding theory continues to provide a viable framework for empirically investigating readers' responses to literature. I should add that embodied theories of cognition recognize that the imagery and affective responses reported by readers are likely shaped by any number of mental events that

occur under the threshold of consciousness and therefore even psychoanalysis will never yield a total picture of the non-replicable phenomenal experience of the reader.

Literature and Consciousness

Approaching reading from an embodied perspective might help us understand what makes certain texts more engaging than others. Undergoing the text creates mental states like those associated with nonvicarious experiences. Concrete language is especially conducive to the formation of images in which we imagine scenes and events described in the text. These images are psychologically real to us and therefore become part of our autobiographical consciousness. Undergoing the text can generate somatic changes that play out in the theatre of the body. Once mapped these changes become feelings so powerful that we are propelled into the text as active participants. As a result, we weep openly at Charlotte's farewell in E. B. White's classic tale, find ourselves unexpectedly sympathetic with Dostoevsky's murderous Raskolnikov, and feel the torment resulting from the routinization of evil that compels Sophie's choice in Styron's (1976) novel. Cotterill (1989) has commented on Freud's account of the powerful effects of the senses which bears a striking resemblance to embodied nature of the mind described by Damasio (1999, 2003).

Freud came surprisingly close to divining that way in which the brain serves the senses, and the manner in which it stores records of experiences. Amongst his clairvoyant conjectures, mention should be made of his belief that nerve fibres carry signals to the brain, where the body's outer surface is appropriately represented.... He saw the brain's neural elements as being capable of discharging when sufficiently excited.... And he guessed that the neural elements are mutually

separated by what he called contact barriers and we now call synapses. (Cotterill, 1989, pp. 217-218)

Lodge (2003) suggests that the unconscious, ego, and superego that define Freud's model of the mind indicate consciousness has a dimension of depth. In his opinion, the task of modernist writers was to plumb the depths of consciousness to create within the mind of the reader a psychological reality. Literature in this regard, has more in common with psychoanalysis than it does with architectures of cognition.

What we often forget is that text variables have an effect on depth processing (Sadoski, 1999). How well the author is able to encode the chaotic flux of experience and make it comprehensible to readers may determine the extent to which readers become engaged and experience the revelatory effects of the text. Some works while not for the weak of heart, may be worth the effort. I can remember my friends and I struggling through Ondaatje's *The English Patient*, frequently lost within the juxtapositions of time and space but for some reason, content to let the language of the text simply wash over us until the scenes formed in our minds provided us with a clearer vision of Ondaatje's cartography of people and histories. We were left with a satisfying if admittedly, somewhat still perplexing literary experience. The potential for moral communication is lost when theories of comprehension and reader response do not recognize that long before the reader undergoes the revelatory effects of the text, the actual process of working out the plots and relationships in an ambitious novel like *The English Patient* has had a revelatory effect upon the writer (Smiley, 2002).

What has also been missing from propositional accounts is attention to the qualia encoded in the text by the author. Kintsch (1998) acknowledges that his theory of

meaning “is not only constructivist but also minimalist” (p. 80) which despite his candor, does little to promote reading as an aesthetic experience. He claims, “the process of meaning construction remains shallow, not just because comprehenders are inherently lazy but mostly because no more is required. A slight knowledge elaboration of a text is usually quite sufficient for whatever action is intended” (p. 80). I believe that computational theories of comprehension that rely on abstract propositions contribute to a reductionist approach to reading instruction which explains why students are so unfamiliar with judging the qualia of experience as it relates to literature and the arts and for that matter, to life in general. We have chosen to treat comprehension and literary response as two separate phenomena while in fact we have seen that the mental imagery and affect often associated with aesthetic response play a powerful role in cognition and are integral to every level of the reading process.

The assembly line “pump ‘em in, pump ‘em out” philosophy that pervades modern schooling in which children undergo a quality control check to see if they have met minimum performance standards leaves little time for ruminating through books to experience the sensual effects of the text. Aesthetic engagement with the text allows students to develop elaborate systems of appraisal and evaluation. It provides them with opportunities to describe relationships and gain an appreciation for constructive diversity. According to Eisner (2002), most judgments in life do not conform to algorithms and if students are going to develop critical thinking skills they will need a curriculum that encourages them to inquire into the relationship between whole and part, between literature and life, and between self and society. In Chapter VI, I discuss the perils of satisfying ourselves with “a process of meaning construction that remains shallow” (p.

80). As a prelude, I offer Dostoevsky's (in Morson, 1999) rather prophetic denouncement of calculating life according to the "laws of nature" in *Notes from the Underground*

...we have only to discover the laws of nature, and man will no longer be responsible for his actions...All human actions will then, of course be tabulated according to these laws, mathematically, like tables of logarithms...in which everything will be so clearly calculated and designated that there will be no more incidents or adventures in the world. (p. 187*n*)

Reader-Response Theories

Generally, reader-response theorists were concerned with ascribing status to the reader in the literary transaction thereby rejecting the notion that literature is an aesthetic ideal rendered invariable by authorial intentions, textual features or universal truths. Among the many theories of reader response, I have elected to briefly highlight Iser's (1978, 1980) and Rosenblatt's (1938, 1978) for several reasons. First, I believe that many of the phenomena purportedly accounted for by these theories can now be explained in neurobiological terms. Second, there is a professed emphasis in both of these theories on the phenomenal experience of the reader. And third, Rosenblatt's theory is easily the most widely circulated and accepted theory of reader response among North American teachers of language arts at all levels.

Wolfgang Iser: The Virtual Reader

Iser's (1978) theory of reader reception revolves around a critical analysis of the text from a phenomenological perspective in an attempt to explain how the text engages the reader's creative participation. His phenomenological approach to understanding the

role of the reader derives from Husserl's hermeneutic method in which understanding is achieved through an anticipatory movement. According to Husserl, the work of phenomenology is the constitution of flux. Iser (1978, 1980) believes that the literary experience induces the reader to constitute the work's intention by ordering the aesthetic effects of the text discursively.

Ingaarden's intentional sentence correlatives are the central means through which an anticipatory movement is created to engage the reader in the constitution of the work. Iser (1980) explains that a sentence is not merely a statement but it aims to say something beyond what it states on an immediate level. Sentences link up with other sentences in a variety of ways to form more complex units of meaning. Iser (1980) contends: "In their capacity as statements, observations, purveyors of information, [sentences] are always an indication of something that is to come, the structure of which is foreshadowed by their specific content" (p. 53). The notion of "pre-intentions" associated with Husserl's (1966) phenomenological hermeneutics helps explain how the actual content of the text emerges from the intentional correlative of sentences. "Every originally constructive process is inspired by pre-intentions, which construct and collect the seed of what is to come, as such, and bring it to fruition" (cited in Iser, 1980, p. 53). In other words, individual sentences work together to foreshadow what is to come and create expectations within the reader.

Iser envisions the literary work as having two poles—the artistic, which refers to the text written by the author, and the esthetic, which refers to the reader's realization of the artistic text. He describes the literary text as having a virtual quality claiming that it is neither identical with the actual text nor synonymous with the reader's realization of

the text, but lies halfway between the two. Iser (1978) is very clear that the text is always aimed at what he calls an “implied reader” (p. 35). Traversing the virtual plane between reader and text is what lends the literary work its inherent dynamism. In Iser’s estimation the text is animated through the reader’s use of a variety of *schematized* views (another opportunity to play the ‘schema’ game) offered by the text which allows the reader to fill in the gaps created within the liminal space resulting from something being transposed into something else. Reading is only pleasurable when it is active and creative depending on the unwritten aspects of the text to draw the reader’s participation (Iser, 1980, p. 50-51).

If this is beginning to sound familiar it is because intentional sentence correlatives operate very much like the propositional textbase described in Kintsch’s (1998) construction integration model of reading. Like Kintsch’s (1998) reader, Iser’s reader is expected to constitute the intention of the work by reducing or “normalizing” the polysemantic possibilities within the framework of text conventions. According to Iser, intentional sentence correlatives make possible the virtual world presented by the text. Iser’s virtual dimension is premised on the idea that the preexisting text conditions the interaction between reader and text. The reader actively fills in gaps according to what is concealed and what is restricted by what is revealed by the text. Similar to the place of propositions in computational models of reading, Iser emphasizes the heuristic value of sentence correlatives. But unlike computational models of reading, Iser accords more than a tacit acknowledgement of the function imagery in constituting the work.

According to Iser (1978), the image and the reading subject are indivisible. In his view, images are dualistic in that they “emerge from the reader, but they are also guided

by the signals which project themselves into him” making it “extremely difficult to gauge where signals leave off and the reader’s imagination begins the process of projection” (p. 135). Images are fundamental to performing a necessary synthesis of the aesthetic elements of the text, the execution of which takes place below the threshold of consciousness. Due to its unconscious nature, Iser refers to the imaging synthesis as both passive and pre-predicative. Citing Dufrenne (1973), Iser situates the image “between the brute presence where the object is experienced and the thought where it becomes idea, allows the object to appear, to be present as represented” (p. 345).

At this point, I must admit to having some difficulty reconciling the dualism in Iser’s conceptualization of images and the unconscious synthesis. Damasio (1999, 2003) concedes that while neural mapping provides a plausible account of how sensory information is stored in the brain, it is still unclear how sensory experience mapped by the body is transformed into images. As a consequence, the elusive point at which the pre-predicative, non-verbal mental representations described actually constitute a form of thought in Iser’s theory remains purely speculative. Also, Iser’s conceptualization of imagery and thought needs to be reevaluated in light of advances in cognitive science that support Lakoff and Johnson’s (1999) articulation of the cognitive unconscious and the suggestion that as much as 95 percent of all thought (which, they add, might be a gross underestimate) occurs under the threshold of consciousness suggesting that the pre-predicative images are a form of thought. Iser’s theory fails to describe in any depth the possibility that we are simultaneously and constantly processing information verbally and non-verbally in response to representations activated within both the unconscious and conscious realm. In fact, the mind is constantly interacting with itself as much, if not

more so, than with the text. The idea in Iser's theory that images perform a necessary function in constituting the literary work might also benefit from Lakoff and Johnson's (1999) explanation that the pre-predicative images activated within the cognitive unconscious act as a sort of guiding hand in shaping how we take in our world and grants us our commonsense understanding of the self.

Iser (1978) makes clear the critical role of imagery in engaging the reader in the text to the extent to which "the reader cannot detach himself from such an interaction, on the contrary, the activity stimulated in him will link him to the text and induce him to create the conditions necessary for the effectiveness of that text" (p. 9). Iser describes in beautiful detail how the text and reader are merged in a private realm where "the division between subject and object no longer applies, and it therefore follows that that meaning is no longer an object to be defined, but is an effect to be experienced" (Iser, 1978, pp. 9-10). Yet somehow, Iser's implied readers are defined by the phenomenological bracketing that abstracts aesthetic experience from everyday experience in sublimation to the effects of the text. From a neurobiological point of view the idea of phenomenological bracketing is untenable. I recall once again Merleau-Ponty's (1962) contention that the process of reflection "can never make me stop...thinking with the cultural apparatus with which my education, my previous efforts, my personal history, have provided me" (p. 61). Engaged in the literary experience, readers cannot shed their autobiographical memory. The autobiographical self remains embedded in the body and at some level is cognizant of its role in the body's actions (Hunt, 2004). While surrendering to the effects of the text might in fact appear to be a fairly unconscious act it is nevertheless an intentional one. Iser's (1978) theory falls short of recognizing that the

reader's autobiographical consciousness is at work shaping the reader's responses and directing the reader's attention to various signals in the text.

Iser, like many reader receptionist theorists, is intent on demonstrating that the ascending role of the reader does not mean succumbing to the affective fallacy described in Wimsatt & Beardsley's (1946/1954) contentious essay. Wimsatt and Beardsley (1946/1954) discount entirely the emotional effects of the literary work on the reader and emphasize that the only correct reading of the text is one which explicates the unity, coherence, and emphasis of the work. They warn that any concern for the emotional effects produced by the text could lead to relativism and impressionism.

The Affective Fallacy is a confusion between the poem and its *results* (what it *is* and what it *does*)...It begins by trying to derive the standards of criticism from the psychological effects of the poem and ends in impressionism and relativism. The outcome...is that the poem itself, as an object of specifically critical judgment, tends to disappear. (Wimsatt and Beardsley, 1946/1954, p. 21, emphasis in the original)

Iser (1978) elaborates on the schematized views presented in the text in order to dispel any criticism that his theory might reflect subjective anarchy. Implied readers orient themselves from a standpoint derived from the convergence of the shifting textual perspectives that include "those of the narrator, the characters, the plot and the fictitious reader" (p. 35), all of which combine to project the author's vision. The role of Iser's reader is to "occupy shifting vantage points...geared to a *prestructured* activity and to fit the diverse perspectives into a gradually evolving pattern" (p. 35, emphasis added).

Iser (1978) believes that a reader's interaction with the literary text can lead to an enhanced self-critical consciousness. Reading demands that we bring to the text our own codes and conventions that are subject to frustrations of expectation or interruptions in the flow creating a *gestalt* in the virtual dimension—a defamiliarization that not only opens up opportunities for multiple realizations but interrogates our normative ways of seeing. Iser (1980) contends, “the potential text is infinitely richer than any of its individual realizations” (p. 55). Implicit in this statement is the idea that the text is enriched by multiple realizations but I believe that in light of what we are learning about human consciousness, Iser can be more resolute about the enhanced possibilities for his readers. The idea that a *gestalt* in the virtual dimension, in this case, a literary defamiliarization, prompts us to interrogate our normative ways of seeing is consistent with the possibility described later in Chapter VI that literature engenders mind altering experiences that contribute to individual and social change.

Iser's theory remains problematic with respect to a biological account of consciousness because he describes the phenomenology of the reader only insofar as it is circumscribed by the parameters of the text itself and is deliberately conceived to discount the powerful effects of human emotion. I am not the first to comment on Iser's (1978) unwavering adherence to the text. Freund (1987) remarks that despite the professed interest on the animating role of the reader, Iser's theory effectively establishes the text as independent of the reader's meaning making. Ultimately, Iser's theory shares with computational models of cognition, a rationalist approach to reading in which readers are to rely on the construction of a propositional textbase to initiate the activation of mental representations.

Louise Rosenblatt's Transactional Theory of Reader Response

Perhaps more than any other reader response theorist, Rosenblatt (1978) has caused us to pay attention to the aesthetic dimension of reading in schools. Influenced by Dewey's (1934/1987) seminal work, *Art as Experience*, Rosenblatt envisions the aim of literature education as growth in experience rather than the means to acquiring knowledge. Her theory centers on the reader's role in the two-way transactional relationship with the text. Guided by a pragmatist sense of reciprocity Rosenblatt proposes a theory that is in many ways consistent with an embodied view of the mind. Like Iser, Rosenblatt emphasizes the convergence of text and reader but rather than treading over phenomena already explored, I have decided to focus this discussion on Rosenblatt's articulation of the aesthetic efferent continuum.

Rosenblatt (1978) distinguishes between the text and the poem. The text is essentially mere ink marks on a page which embody a yet to be realized potential until a reader brings it to life. The poem on the other hand, signals the active engagement of a reader with a text and comes to stand for all literary works of art including novels, plays, poems and short stories.

Rosenblatt also distinguishes between two types of reading—aesthetic and non-aesthetic or efferent reading. She describes efferent or non-aesthetic reading as focusing on the information to be acquired—the residue that will remain *after* the reading. Efferent comes from the Latin *efferre* meaning “to carry away” and, concerns itself with carrying away information, lexical meaning, explanations, or directions. According to Rosenblatt (1978), aesthetic reading requires “[s]ensing, feeling, imagining, thinking, under the stimulus of words” (p. 27). Rosenblatt purports that readers assume a stance

along a continuum between aesthetic and efferent reading that directs the construction of meaning in transaction with a given text. In Rosenblatt's classic example of efferent reading, she describes a mother whose child has ingested a poisonous liquid and who is quite predictably frantically reading the label in search of an antidote. In Rosenblatt's estimation, the mother's aim is to get through the information as rapidly as possible and is only interested in the objects, ideas, and actions indicated. What is missing from Rosenblatt's account from a dual coding perspective is that in the quest to administer the antidote accurately, the mother may indeed rely on the direct activation of images to narratively construct the critical sequence of steps to save her child (barring the need for semantic parsing, of course!).

An embodied view of cognition and the growing body of empirical evidence on imagery and affect strongly suggest that aesthetic engagement enhances the efferent quality of the reading experience. In other words, the evocation of the imagery and affect contribute to the recall of information regardless of the type of text. This does not mean that we get lost in complete reverie while reading the directions to assemble the family barbecue. The transaction operates two ways and the text does act upon the reader within a particular context.

I believe that given the emphasis Rosenblatt places on building aesthetic capacity in the literature curriculum, she would see this as a welcome revision to her longstanding theory. For years, Rosenblatt (1985) has maintained that the aesthetic reader "pays attention to the associations, feelings, attitudes and ideas that [the] words and their referents arouse within him" (p. 50). It would seem that from an embodied perspective that this description would fit a broader range of reading situations. I would contend that

validating the artificial bifurcation between aesthetic and efferent reading works once again in a reductionist way to discount the important role of imagery and affect while forcing us to see aesthetic response as something additive rather than integral to comprehension.

Conclusion

According to a neurobiological account of consciousness, computational models of cognition are insufficient in dealing with the qualia of subjective experience. Moreover, they are in both Damasio (1999, 2003) and Edelman's (1992) view, biologically untenable. Damasio's (1999) detailed description of extended consciousness implies that the evocation of imagery and affect during literary transactions contribute the experiential store of information that constitutes an individual's autobiographical memory. Dual coding theory is shown to have several theoretical advantages in explaining phenomena related to aesthetic response. First, the back and forth movement between and within representational systems can account for the images and emotions related to objects and events contained within the text and associative connections made to objects and events external to the text. Second, dual coding theory accounts for the effects of language concreteness on memory. And third, dual coding theory provides a viable framework for empirically investigating the phenomena associated with aesthetic response.

I believe that the recent advances in neuroscience prompt a reexamination of reader response theories that focus on the animating role of the reader in transactions with texts. In this chapter, I have attempted to initiate such a reexamination and suggest that a parallel exists between contemporary theories of reading comprehension and reader

response insofar as differences in meaning are eventually resolved in the structure of the text. In Chapter VI, I revisit some of the phenomena associated with aesthetic response to establish reading as act of moral imagination.

CHAPTER VI

READING AS AN ACT OF MORAL IMAGINATION

Introduction

A novel that does not discover a hitherto unknown segment of existence is immoral. Knowledge is the novel's only morality.

-Kundera, *The Art of the Novel*

In *The Ethics of Ambiguity*, Simone de Beauvoir (1948) argues that ambiguity characterizes the human condition. At every waking moment, we are aware of the “non-temporal truth” of our existence, caught as it were “between the past which no longer is and the future which is not yet” (p. 7). In de Beauvoir's opinion, philosophy throughout the ages has concerned itself with trying to reconcile or eliminate ambiguity. Platonic ideals, Cartesian certainty, Kantian categorical imperatives, Hume's skepticism, and a Hegelian synthesis are all aimed to either “reduce mind to matter, or to reabsorb matter into mind, or to merge them within a single substance” (de Beauvoir, 1948, p. 8). Attempts to deny the ambiguity of existence lull us into “consoling ethics” (de Beauvoir, 1948, p. 8) that ironically emphasize the paradox emerging from an anthropocentric view toward mastering the world and the inevitability of finding ourselves falling victim to our own ambition and forces beyond our control.

Written in the wake of the World War II and the Nazi occupation of France, de Beauvoir (1948) illustrates the paradox of human condition in our ability to master the science to create the atomic bomb, a towering achievement aimed at human destruction. Today ‘weapons of mass destruction’ (or the fear at the mere suggestion of their

existence) continue to decide the fate of human beings throughout the world. The idea that we are ultimately the supreme end “to which all action should be subordinated” leads us “to treat one another as instruments or obstacles, or means” (p. 2). As a result, increased mastery leads to an enhanced sense of vulnerability. Consider how we continue to live under the threat posed by the ecologically devastating effects of human progress in the face of our stubborn resistance to give up any of the material objects and technological gains that define our current lifestyle and the pursuit of being in possession of more. Human beings find themselves living in the troubled complacency emerging from the metaphysical promise of immortality or from the “marvelous optimism where even the bloody wars simply express the fertile restlessness of the Spirit” (de Beauvoir, 1948, p. 8). The denial of our fundamental ambiguity, de Beauvoir (1948) insists, amounts to a denial of freedom. She argues:

Perhaps in no other age have they manifested their grandeur more brilliantly, and in no other age has this opportunity, the truth comes to light, the truth of life and death, of my solitude and my bond with the world, of my freedom and my servitude, of the insignificance and the sovereign importance of each man and all men. There was Stalingrad and there was Buchenwald, and neither of the two wipes out the other. Since we do not succeed in fleeing it, let us therefore try to look the truth in the face. Let us try to assume our fundamental ambiguity. It is in the knowledge of the genuine conditions of our life that we must draw our strength to life and our reason for acting (p. 9).

Kundera (1988) argues that the paradoxical nature of human action is “one of the novel’s greatest discoveries” (p. 24). In this chapter, I argue that theoretical and

instructional attempts aimed at resolving ambiguity in the text limit literature's potential to incite moral communication. The mental imagery and emotional reactions evoked throughout literary reading serve an ethical function inasmuch as that they contribute to the autobiographical and moral consciousness of the reader. I intend to demonstrate that literature is morally relevant but not in the positivistic sense that education should concern itself with using literature for the explicit teaching of moral lessons. Literature, like ethics, does not provide a recipe for life nor can it provide us with some path to ultimate good. It often narrates that which we would find insufferable or unimaginable in real life. Literature provides us with an opportunity to explore both good and evil bringing us face to face with the fundamental ambiguity of our existence. It serves an ethical function insofar as it constitutes a means for intersubjective collaboration and creates an imaginative extension of the sociocultural environment in which we act and respond. And finally, I believe that as a record of human consciousness, literature can prove to be a source of individual and social agency basic to the development of moral autonomy and an emerging sense of self.

Reading as an Intersubjective Collaboration

Understanding the intersubjective nature of the literary experience might begin with Mead's (1934) articulation of the "I" and the "me"—the relationship between the mind and the self—in the imaginative formation of the "generalized other" (p. 154). To Mead, the development of the self is a social process, one that begins in childhood when we take on the role of others in play. For example, pre-school and kindergarten children are often seen playing 'mommy' or 'fire fighter' or 'teacher.' The direct experience of playing a succession of roles eventually leads to the development of a socially shared

system of gestures that lead to an abstract set of rules. Continued and varied experience, both direct and vicarious, shapes our understanding of the interrelationship of these roles that combine to form an image of the generalized other defined as “[t]he organized community or social group which gives to the individual his unity of self” (Mead, 1934, p. 154).

According to Mead (1964), “In the process of communication, the individual is an other before he is a self,” and furthermore, “out of this process thought arises, i.e., conversation with one’s self, in the role of the specific other and then in the role of the generalized other” (pp. 312-314). In other words, our social consciousness, even the shared rules that govern our ability to communicate with one another through language, depends on the imaginative transformation of our direct interactions with the world into the emergence of the mind and self. Mead stresses the inseparable nature of the “I” and the “me”—the individual and the social selves. Likewise, a sense of community emerges only when individuals can take on the attitudes of others. In the literary transaction between author and reader, both participants maintain these two faces of the self in order to complete the “social act” (Mead, 1934, p. 7). The social act assumes that the whole (society) is antecedent to the part (individual) and therefore the conduct of both the author and reader can be explained in terms of the organized conduct of the social group. The imaginative formation of the generalized other supports the idea that the author has in mind an imagined reader and that readers can tentatively embrace the thoughts, feelings, and motivations of others.

Like Mead, Bakhtin (1981) recognizes that there is always an audience. Bakhtin’s social theory of utterance contends that consciousness arises in the dialogic

utterance constructed internally according to voices previously heard and in anticipation of a response. This inner dialogue also characteristic of Mead's generalized other, is in fact, mental imagery in the form of auditory-verbal encoding and may be accompanied by images related to other sense modalities. Bakhtin describes a dialogic consciousness that is also dependent on the imaginative transformation of concrete interactions with the world. All utterances are *double-voiced* in that words are inescapably populated with the intentions of others. Grounded in the relation between self and other, the literary text constitutes a field of "answerability" (Bakhtin, 1990, pp. 1-2; Holquist, 1990, p. 154) in which meaning is intersubjective, that is, contested within a tripartite construction consisting of a speaking subject (the author), an addressee (the reader) and the dialogic relation between the two. The intersubjective life of the mind described by Mead (1934) and Bakhtin (1981) suggests we are not just conscious of having a consciousness, but that our consciousness is also conscious of the consciousness of others. Intersubjectivity depends therefore, on the mind's capacity to image and hold these images in place for extended periods of time.

Early in his essay "Discourse in the Novel," Bakhtin (1981) summarizes the novel's potential as a "means for displaying otherness" (Holquist, 1990, p. 89):

The novel can be defined as a diversity of social speech types...and a diversity of individual voices, artistically organized. The internal stratification of any single national language into social dialects, characteristic group behavior, professional jargons, generic languages, language of generations and age groups, tendentious languages, language of the authorities, of various circles and of passing fashions, languages that serve the specific sociopolitical purposes of the

day, even of the hour ... this internal stratification present in every language at any given moment of its historical existence is the indispensable prerequisite for the novel as a genre. (Bakhtin, 1981, pp. 262-263)

In terms of accounting for literature's ethical function, Bakhtin maintains that language is a form of persuasion, a way of controlling others' behavior or directing their thinking.

The word is a "*two-sided act*...determined equally by *whose* word it is and *for whom* it is meant. ...A word is territory shared by both addresser and addressee, by the speaker and his interlocutor." (Bakhtin/Volosinov, 1929/1973, p. 86 emphasis in the original). In sum, from an intersubjective perspective, literature augments the continued and various experience "which gives to the individual his unity of self" (Mead, 1934, p. 154) and constitutes an ethical situation in which readers and writers are interlocutors charged with the responsibility of ensuring that the text remains "suspended in the ongoing process of collaborative judgment" (Clark, 1990, p. 30). More importantly, the aesthetic intersubjectivity characterizing literary transactions engenders "an increasing sense of empathy between psyches across space" (Hunt, 2004, p. 10).

The Affective and Imaginative in Moral Experience

Dewey (1911/1978) believed that the disregard for aesthetic and affective factors in American schools was "the greatest deficiency in...education systems with respect to character building" (p. 386). He maintained that the sympathetic imagination that grows out of having certain communal and intersubjective experiences is central to moral inquiry and the development of a good moral character. Cultivating habits of social imagination, were in Dewey's (1908/1978) opinion, (p. 284) fundamental to any classroom discussion of morals. In other words, effective moral education can only occur

when students “happen to be already animated by a sympathetic and dignified regard for the sentiments of others” (Dewey, 1916/1980, p. 364).

To Dewey, moral blindness and narrowness of mind are the direct result of a lack of the affective and the imaginative in one’s educational life. In his view, affective relations with others and with a variety of situations signify access to a landscape that would not otherwise be available. I am of course, suggesting that literary works create a fertile landscape for cultivating a moral imagination. Like Lodge (2003), Dewey (1932/1985), advocates for aesthetic opportunities that permit us to examine the qualia of our subjective experience.

Unless there is a direct, mainly unreflective appreciation of persons and deeds, the data for subsequent thought will be lacking or distorted. A person must *feel* the qualities of acts as one feels with the hands the qualities of roughness and smoothness (pp.268-269, emphasis in the original).

Dewey’s conceptualization of the affective response relates to the act of perception described in Damasio’s neurobiology of consciousness. There is an immediate affective reaction triggered by an emotionally competent stimulus that is mapped by the body and subsequently acted upon through reflection or reasoning strategies. But before we can reason, we *feel*.

Dewey contended that the ability to reach beyond the surface of things and understand others through sympathetic communication requires imagination and not the mere transformation of knowledge. Accordingly, before we can educate the imagination, the reader must undergo the text. From a Deweyan perspective, the richness of the literary experience and its potential for moral deliberation are realized as readers engage

in dramatic rehearsal. Within the literary context, dramatic rehearsal entails placing readers in a morally problematic situation in which they seek possible resolutions by imaging alternative actions and projecting themselves into the situation as active participants. As an act of cognitive appraisal grounded in perception, Dewey's dramatic rehearsal is not enacted in moral certitude but remains subject to revision. Nevertheless, as I will point out, there are undoubtedly, sociocultural and historical factors at work that shape the reader's response and determine the extent to which a reader may undergo the text.

The Civilizing Power of Literature

Any discussion that begins by re-introducing the contested relationship between literature and morals causes us to address literature's "transfer-value of humanism" (Bogdan, 1992, p. 50). Postman and Weingartner (1961) have argued our faith in the civilizing power of literature is "[b]y far the most amusing of all our superstitions" (p. 38) when we consider that Joseph Goebbels had a Ph.D in Romantic Drama. Poirier (1971) citing Steiner also noted, "[w]e now know that a man can read Goethe and Rilke in the evening—and go to his day's work at Auschwitz in the morning" (p. 82).

In *The Life of the Mind*, Arendt (1971) begins by tracing her preoccupation with mental activities to her attendance at the Eichmann trial in Jerusalem. What struck her most profoundly was "the banality of evil" (p. 3) that went counter to any previous philosophical, literary, or theological conceptualization of evil as something demonic, acted out of envy, resentment, weakness, or hatred. It was the sheer *absence of thought* that Arendt found most surprising, the fact that the uncontestable evil on trial was as

much a result of the sins of omission as it was the sins of commission. Arendt (1971) observes:

...I was struck by the manifest shallowness in the doer that made it impossible to trace the uncontested evil of his deeds to any deeper level of roots or motives. The deeds were monstrous, but the doer...was quite ordinary, commonplace, and neither demonic nor monstrous. There was no sign in him of firm ideological convictions or of specific evil motives, and the only notable characteristic one could detect in his... behavior...was something entirely negative: it was not stupidity but *thoughtlessness*. (p. 4, emphasis in the original)

This thoughtlessness, Arendt proceeds to describe, seemed adequate in dealing with routine court and prison proceedings, much as one would imagine Eichmann functioned under the Nazi regime. When questioned, however, Eichmann appeared helpless, resorting to “cliché-ridden language produced on the stand, as it had evidently done in his official life, a kind of macabre comedy” (p. 4). Arendt explains:

Clichés, stock phrases, adherence to conventional standardized codes of expression and conduct have the socially recognized function of protecting us against reality, that is against the claim on our thinking attention that all events and facts make by virtue of their existence. If we were responsive to this claim all the time, we would soon be exhausted; Eichmann differed from the rest of us only in that he clearly knew of no such claim at all. (p. 4)

In reading Arendt’s assessment of the absence of thinking as a necessary condition for evil, I am reminded of Mr. Keating in Peter Weir’s film “Dead Poets Society.” Keating embraces Shelley’s Romantic idealism that poetry can light the way to

lead his students “from their inward sight the film of familiarity” (Shelley, 1821/1965, p. 74). Throughout the movie, we observe Keating’s continuous efforts to get students to “break step” and get them to look at the world differently, to pay attention to the claim the images and emotions in response to poetry make on their thinking. The transformational power of literature is not to be found in the standard textbook interpretations, but rather, the awakening lies in thinking about what is read. Keating wants to make poetry the focus of his students’ thinking attention. Frye held a similar view, convinced of the social, moral, and educational value of literature and its civilizing power. His entire opus might be considered a justification for fostering a literary imagination through an oscillation between engagement and detachment, that is to say, between a direct participatory response to the text and a critical response. His theory of an educated imagination however, depended on separating criticism from reading—from seeking unity or coherence in the text prior to any aesthetic response to foster literary literacy.

Moffett (1988), on the other hand, adopts a more integrative approach to literature education advancing the idea that a text has to be both understood and undergone. Undergoing relates to the reader’s submission to the emotional impact of the text. Moffett saw the potential of fostering democratic ideals through a poetics of pluralism. Reminiscent of cultivating the habits of social imagination in Dewey’s moral communication, Moffett suggested that raising the consciousness of our students depends upon the chance to identify with a wide range of literary genres, authors, situations, and characters. In the existentialist tradition of de Beauvoir (1948), Moffett saw the aim of literature education as creating an appreciation for moral ambiguity. Despite their

philosophical differences, both Frye (1963) and Moffett (1988) fought against the allure of stock responses to literature and believed that the primary aim of literature education was to break down resistance to knowing. Whether through the unity of symbolic imagery and archetypes or through empathetic identification, breaking down the resistance to knowing depends upon first being able to form mental images.

Centrifugal and Centripetal Forces at Work in Reading the Literary Text

The heteroglossia in Bakhtin's (1981) dialogism might prove helpful in understanding readers' resistance to the text and their apparent inability to *imagine* and *feel* in order to reach beyond the surface of things. According to Bakhtin, language is constantly subjected to the centralizing or *centripetal* forces and the decentralizing or *centrifugal* forces resulting from social interaction. The locus where centripetal and centrifugal forces collide is conceptualized as heteroglossia or the condition that ensures the primacy of context over text for "[a]t any given time, in any given place, there will be a set of conditions—social, historical, meteorological, physiological—that will insure that a word uttered in that place and at that time will have a meaning different than it would have under any other condition" (Holquist, 1981, p. 428). Accordingly, "all utterances are heteroglot in that they are functions of a matrix of forces practically impossible to recoup" (Holquist, 1981, p. 428). As such, ambiguity is the hallmark of a dialogic consciousness, for language is neither static nor neutral.

Multi-voiced and indeterminate, the text can create "dialogic spaces" (Kristeva, 1980, p. 66) in which the reader engages in an act of self-realization and self-determination in opposition to perceived "others." However, the rule-governing centripetal forces can easily destroy dialogism as discourse's primordial condition and

render the reader a relatively passive participant in the construction of meaning. Bakhtin (1981) attributes the existence of monologism to a philosophy of language and systemized linguistics in which traditional stylistics

...locks every stylistic phenomenon into the monologic context of a given self-sufficient and hermetic utterance, imprisoning it, as it were, in the dungeon of a single context; it is not able to exchange messages with other utterances, it is not able to realize its own stylistic implication in a relationship with them; it is obliged to exhaust itself in its own single hermetic context. (p. 274)

Bakhtin/Volosinov (1929/1973) argues that monologism is pure abstraction, where the meaning of the text is already predetermined and the response to the text is calculated as “one link in a continuous chain of speech performances” (p. 72). In this sense, monologism bears a striking resemblance to the description of amodal proposition building in computational theories of cognition and reading comprehension.

Azar Nafisi: *Reading Lolita in Tehran*

Resistance to knowing and the liberating power of literature are equally documented in Azar Nafisi's (2003) recent bestseller, *Reading Lolita in Tehran* which exemplifies the inevitable dialectic between the centripetal and centrifugal forces at work shaping readers' responses. Early in her book, she illustrates how the empty rituals depicted in Nabokov's *Invitation to a Beheading* epitomize the “banality of evil” (Arendt, 1971, p. 3) and help readers identify the tragedy and the absurdity of the conditions under which people of the Islamic Republic were forced to live and die. Once a week for two years, a group of young female students met clandestinely at Nafisi's Tehran apartment and held their own “Dead Poets Society” to examine the claims forbidden Western

literary works—Jane Austen, F. Scott Fitzgerald, Henry James, and Vladimir Nabokov—made on their thinking attention. In the face of Islamic morality squads, widespread censorship of artistic expression, and fundamentalist control of universities, the story of the students in Nafisi’s classroom and of the women who met in secret demonstrated the value of the novel as a source of moral inquiry.

At the University of Tehran, where Nafisi began her teaching career as the youngest member of the English Department at the Faculty of Persian and Foreign Languages she introduces students to Fitzgerald’s *The Great Gatsby* and the American obsession with the promise of the future. In the spirit of undergoing the text, Nafisi (2003) implores them not to chase after “the grand theme...as if it is separate from the story itself. The idea or ideas behind the story must come...through the experience of the novel and not as something tacked on to it” (p. 109). In *Gatsby*, she tried to help students see beyond the surface of things—beyond the adultery and a capitalist love of money—and rather, seek to disrupt the seemingly immutable traditions and expectations that form the “film of familiarity” (Shelley, 1821/1965, p. 74). In those fleeting seconds at the end of class, in the midst of chants of “*Marg bar Amrika!*”—“Death to America!,” Nafisi (2003) adeptly conveys the emotional undergoing of the text and its potential for moral communication:

A novel is not an allegory, I said as the period was about to come to an end. It is the sensual experience of another world. If you don’t enter that world, hold your breath with the characters and become involved in their destiny, you won’t be able to empathize and empathy is at the heart of the novel. This is how you read a

novel: you inhale the experience. So start breathing, I just want you to remember this. That is all; class dismissed. (p. 111)

But Nafisi's readers are often asphyxiated by fundamentalist indoctrination, political ideologies, and utilitarian efforts to mask ambiguity. Her account makes it plain to see that authoritative discourse, defined as the "privileged language that approaches us from without" (Holquist, 1981, p. 424) operates at the expense of dialogue. Animating the moral imagination through literature might begin by understanding

...the fact that no behavior is ever authorized to begin with, and one of the concrete consequences of existentialist ethics is the rejection of all the previous justifications which might be drawn from the civilization, the age, and the culture; it is the rejection of every principle of authority. (de Beauvoir, 1948, p. 140).

Before Western readers become all too comfortable in their false consciousness about their freedom of expression, we might consider that for the most part, Canadian and American students have been fed the same literary canon for generations, indoctrinated into a cultural literacy (Hirsch, 1987) aimed at reproducing Judeo-Christian morals and values. Canonization, or the effort to "elevate the existing norms to a model that resists change" (Holquist, 1981, p. 425) constitutes yet another form of authoritative discourse that determines readers' responses to literature and any action associated with those responses. In pursuit of Moffett's (1980) poetics of plurality, I am left asking when was the last time one of us picked up a work of classic Persian literature with our students and made it the focus of our thinking attention?

Historical Agency and an Emerging Sense of Self

Literature's potential for moral communication inheres in historian Lynn Hunt's (2004) quest for a post-Foucauldian history of personhood. Hunt argues that human rights are comprised of "a set of feelings about how bodies should be treated (and were experienced) and about how selves worked (and were experienced)" (p. 3). A feminist, a *dix-huitièmiste*, and an expert on the French revolution, Hunt contends that the epistolary novel played a critical role in the development of human rights. Her recent work also happens to benefit from the interdisciplinary field of consciousness studies and its emphasis on feelings. She suggests that the current academic furor surrounding emotions relates to the fact that emotions are both bodily and mental, experienced as biological change and as a mental event. Based in both Merleau-Ponty's (1942) and Damasio's (1999) "materialist understanding of the self in which...consciousness grows naturally out of sensation" (Hunt, 2004, pp. 6-7), Hunt rejects the idea that the self is either freestanding or completely socially constructed, but rather exists embedded in the body and is cognizant of its role as an agent of the body's action.

Hunt (2004) explains how moral autonomy and its corollary human rights depend on individuals experiencing a separateness of self associated with the body's bounded space and at the same time, maintaining a conviction that others experience this same sense of self. In other words, the affective energy associated with democracy and the development of human rights requires the belief that all people have the same kinds of inner experience including similar experiences of bodily pain. Hunt notes that during the eighteenth century, something remarkable occurred to advance this understanding of

separateness or self possession and the empathy that comes with knowing that all others are equally self possessed.

Without discounting other factors which invariably contributed to the emergence of human rights, for example, changes in natural law theory, the growing spread of consumerism, commercialism, and urbanization, and the Enlightenment, Hunt traces the development of human rights in part, to the appearance of the epistolary novel in the mid-eighteenth century. She points out that the three great psychological novels—Richardson's (1740) *Pamela* and (1747-48) *Clarissa* and Rousseau's (1761) *Julie*—more or less coincided with the appearance of the phrase “rights of man” in Rousseau's (1762) *Social Contract*. More importantly, the epistolary novel, Hunt argues, produces a “sense of interior likeness” (p. 14) whereby we are able to identify empathetically with individuals imagined to be fundamentally like ourselves. Similarly, Watt (1957), in his study of realism in the novel pointed to Richardson's “use of the letter form that induced in the reader a continual sense of actual participation in the action which was until then unparalleled in its completeness and intensensity” (p. 25).

Hunt's (2004) theory connecting the epistolary novel with the origins of human rights would appear to support my argument that that images and emotional responses emerging from the literary experience contribute to a developing sense of self and an expanding moral consciousness. Basically, Hunt maintains that reading epistolary novels produced somatic effects that once mapped and stored in the brain came back out as new concepts about the organization of social and political life. This reorganization entailed new ways of empathizing. Ultimately, Hunt is arguing that social and political change occurs not just because people inhabit a particular social or cultural context, but more so,

because through their interactions with each other (and reading) they share similar experiences. Many of these experiences alter individual minds that contribute to a changing social context.

Not surprisingly, the recognition of the novel's power to arouse bodily sensations and take possession of its readers resulted in its condemnation by both Catholic and Protestant clergy. And perhaps their fears were well founded inasmuch as the novel began to provide a new form of religious experience. The fiercest of criticisms however, only served to confirm the affective impact of the novel. To my mind, the French abbé Jacquin's (1755) exhaustive attack on the novel correctly assumed that "novels offer us all on their own, everything that is most seductive in love and at the same time everything that is most criminal" (p. 305).

Empathy depends on the reader's capacity to form the necessary images of a particular character and affectively project upon those images, common traits and experiences that promote feelings of interiority, that is to say, the feelings that suggest that this character is in possession of a sense of self equal to that of the reader. In other words, empathy requires identification. Hunt (2004) summarizes Diderot's compelling description of empathy and identification evoked during reading that prefigures Dewey's dramatic rehearsal:

You recognize yourself in the characters, you imaginatively leap into the midst of the action, you feel the same feelings that the characters are feeling. In short you learn to empathize with someone who is not yourself and can never be directly accessible to you and yet, who in some imaginative way also yourself. (p. 19)

Diderot was also one of the first to recognize how readers can be drawn into oblivion through identification with a novel's characters and how this unconscious participation (Dewey's and Moffett's "undergoing") could lead to moral inquiry without the didacticism associated with explicit moralizing. In response to Richardson's *Pamela*, Diderot commented: "One feels oneself drawn to the good with an impetuosity one does not recognize. When faced with an injustice you experience a disgust you do not know how to explain to yourself" (cited in Hunt, 2004, p. 20).

In sum, Hunt's account reflects the idea of pragmatist reciprocity and an epigenetic account of consciousness and the brain's morphology. She contends that important changes must take place in people's brains before new social practices can begin. The self is not, as we read in Foucault, simply a product of body disciplines imposed from without. Historicity of personhood, Hunt (2004) claims, works in more than one direction. Reading the epistolary novel in the eighteenth century led to new individual experiences. The bodily sensations associated with these experiences translated into perceptions of individual personhood and subsequently to new social and cultural practices. Such changes do not occur all at once, and historical change is bound to be a messy process but one in which narrative plays a critical role. Hunt's theory and a neurobiology of consciousness go a long way to providing a plausible explanation for Kearney's (2002) following observation:

It is, in short, only when haphazard happenings are transformed into story, and thus made memorable over time, that we become full agents of our history. This becoming historical involves a transition from the flux of events into a meaningful social or political community – what Aristotle and the Greeks called a polis.

Without this transition from nature to narrative, from time suffered to time enacted and enunciated, it is debatable whether a merely biological life (*zoe*) could ever be considered a truly human one (*bios*) (Kearney, 2002, p. 3).

Conclusion

In this chapter, I have attempted to demonstrate that the moral value of literature exists in its potential to embody the paradox of the human condition. In *The Ethics of Ambiguity*, de Beauvoir (1948) explains how ambiguity is the hallmark of human existence and that philosophical attempts to overcome or to eliminate our fundamental ambiguity have only aggravated feelings of helplessness, vulnerability, and isolation causing us “to treat one another as instruments or obstacles, or means” (p. 2). Dewey’s emphasis on the imaginative and the affective in moral deliberation suggests that literature provides fertile ground for exploring both good and evil and trying out solutions to morally problematic situations.

Our ability to form images is critical to the human capacity to conduct ourselves according to an awareness of the consciousness of others and contributes to our emerging sense of self (Bakhtin, 1981; Mead, 1934; Hunt, 2004). The imaginative formation of a “generalized other” (Mead, 1934) accounts for the ability of authors to maintain an imagined audience and the ability of readers to project themselves into the thoughts, feelings, and motives of characters. Where the meaning of the text is constructed intersubjectively, that is to say, in the dialogic relationship among author, text, and reader, the literary transaction becomes a mode of moral communication. The text’s potential for dialogue and moral communication is often impeded by authoritative discourse in which truths come already calculated. Examples of authoritative discourse

include dominant political ideologies, fundamentalism, rationalism, and canonization. A neurobiology of consciousness (Damasio, 1999, 2003; Edelman, 1992) described in earlier chapters suggests that literature provides a common experience for readers to cultivate habits of social imagination that may eventually lead to social and cultural change.

CHAPTER VII

CONCLUSION

The only laws of matter are those which our minds must fabricate and the only laws of mind are fabricated for it by matter.

-Maxwell, cited in Edelman, *Bright Air, Brilliant Fire*

This week, I decided to begin my Friday morning Models of Education class by showing what has become a National Film Board of Canada (1993) classic, “Spaghetti Story.” This film short which originally aired on the BBC on a 1957 broadcast of the television news program “Panorama” is part of a NFB series titled “The Politics of Truth” and is widely used to introduce students to the idea of how reality is constructed.

Distinguished BBC broadcaster, Richard Dimbleby narrates this documentary travelogue featuring a family from the Swiss town of Ticino carrying out their annual spaghetti harvest. The scene opens onto the alpine countryside burgeoning into spring. Flowers are in bloom and the air is thick with bees while women of the village are diligently at work plucking strands of spaghetti from the trees and then laying them down to dry under the warm alpine sun. Viewers are informed of the precise climatic conditions that have made for a record harvest this year, the careful attention of generations of growers that have contributed to the uniform length of the spaghetti, and the scale of the Swiss harvest in comparison to the harvest carried out in neighboring Italy.

Early in my investigation into the structure and function of imagery and affect, I compared dual coding theory’s embodied view of cognition with rationalist theories based on abstract knowledge structures or schema. In light of the recent developments in

neuroscience that facilitate a growing understanding of human consciousness, I remain convinced that the mind is indeed embodied and that imagery and affect play a critical role at every conceivable level of the reading process. More importantly, Edelman's (1992) demonstration that "[n]o relationship is necessary between this collection of algorithms [transformational grammar] and what goes on in a person's head" (p. 245) supports the contention in Sadoski and Paivio's (2001) dual coding theory of reading and writing that "[a]bstract entities are not theoretically necessary to explain reading phenomena" (p. 135). In light of what we now know about the structure and function of imagery and affect within a neurobiological account of consciousness, the pervasive presence of schema theory in reading research and the reverence it continues to be accorded in instructional materials causes me to think that the reading field has been carrying out its own spaghetti harvest.

For example, propositions grow into schemata that are the result of an elaboration of precise growing conditions we have come to describe as amodal propositional networks. If, like the generations of spaghetti growers, teachers pay close attention to activating prior knowledge in just the right way, we are closer to ensuring that students will uniformly comprehend the text. The spaghetti harvest is enhanced and extended by the authoritative voice of distinguished scholars who have maintained the illusion that we knew more about cognition in reading than we actually did (Sadoski, Paivio, & Goetz, 1991).

At this point, however, I feel it necessary to state that I believe in many ways, these theorists were guided quite rightly by the same desire to understand how readers' experience contributes to their understanding of the text. Neuroscience makes obvious a

problem that perhaps two decades ago was less definable in concrete terms. It now seems apparent that any theoretical model of reading seeking to establish the critical role of prior knowledge by adopting the view that the brain is hard wired to contend with every possible contingency *preempts* the infinite diversity of human experience. Such a theory, therefore, in application, effectively negates the underlying premise upon which that theory is based. In others words, computational models of reading are incongruent with both the phenomenon they wish to investigate and the practice they wish to promote. In demonstrating my point, I have elected to once again highlight Kintsch's (1998) comprehension-integration model because it has undergone considerable revision and Kintsch appears earnest in his attempt to account for multiple forms of mental representation.

Kintsch (1998) proposes an architecture of cognition that relies on the proposition as the single form of representation to incorporate all other multiple codes of mental representation including imagery and emotions. Kintsch's decision to represent imagery and emotions propositionally is not based on any conviction that imagery and emotions are in any way propositional but because propositions are practical and easily programmed into computers. Convenient single-code approaches to understanding cognition are designed to demonstrate and test the theory using artificial intelligence. Kintsch's architecture of cognition is supposed to operate without the benefit of the raw data of experience. Such theories make irrelevant the contribution of human interaction to the evolutionary development of the brain because the architecture of these theoretical models is constructed independently of the structure and function of the nervous system.

Kintsch's (1998) choice of propositions however, is rendered all the more perplexing by his proclaimed adherence to Aristotelian perception and experience. To further confound matters, Kintsch briefly introduces Damasio's (1994) theory of emotions to suggest that other factors beyond the text contribute to the construction of meaning. It remains to be seen to what extent rationalist concepts can be stretched to reconcile the materialist view of the mind in Damasio's (1994, 1999, 2003) neurobiology of consciousness with a propositional architecture of cognition. I have identified in Kintsch's theory what I see as a laudable attempt to account for the broad range of reading phenomena previously accounted for by dual coding theory. I am left however, thinking that Kintsch's (1998) model is not so much a paradigm for cognition but rather, a model struggling to be free of one.

As Edelman (1992) explains, what scholars like Kintsch are still missing is "the idea that a description of the mind cannot proceed "liberally"—that is, in the absence of a biological description of the mind" (p. 14). He adds, "that the entire structure on which the cognitivist enterprise is based is incoherent and not borne out of the facts" (p. 14). As I have attempted to show, an embodied mind cannot reduce imagery and affect to a mere proposition without sacrificing the richness of experience and human intentionality.

The idea that imagery and affect are integral to the reading process at every conceivable level suggests that response is built into the actual act of reading itself. Reading instruction that continues to assume a linear progression moving from literal to inferential to critical forms of comprehension has an unfortunate tendency to scorn seductive detail arguing that it distracts readers from what is important. Approaching reading research and instruction from an embodied perspective might begin with the idea

that we *read* for reasons far more fundamental to our existence than to produce “scientifically based evidence” (National Research Council, 2001) and these reasons have not been adequately captured by the convenience of propositional accounts. Succumbing to the “traps of language have made it difficult to tease out the connections between mental events and events in the nervous system” (Edelman, 1992, p. 7). Sadoski (1999) expresses concern about the ephemeral nature of the proposition itself. Propositions “are not seen as actual language; they have no form and are assumed to be in the abstract, mental meaning base of language.” To this I add, that propositions can no more “be experienced directly” or have any “objective reality” (Sadoski, 1999, p. 495) than spaghetti can grow on trees.

In closing, I return to the question of the relationship between the moral and aesthetic value of literature. I believe that the power of the senses evoked during the act of reading endows literature with its potential for moral inquiry. Literature provides us with a shared experience revealing to us some unknown, never before discovered part of ourselves and the world in which we live. As for whether teachers of literature should first instruct students in the structural elements that contribute to the reader’s literary literacy or encourage them to assume critical perspectives associated with more poststructural attitudes, I find myself in agreement with Kundera (1995) who is adamant in his disdain for “those who look for a position (political, philosophical, religious, whatever) in a work of art rather than searching it for an *effort to know*, to understand, to grasp this or that aspect of reality” (p. 91). First and foremost, the aesthetic brings forth “a mode of pleasure, satisfaction, comfort that is quite distinct from any utility. But it nonetheless possesses a positive power for humanity, allowing us to share the same

emotion, to better understand each other” (Changeux, in Changeux & Ricoeur, 2000, p. 308). It is for this reason that I am advocating a poetics of pluralism whereby students undergo the affective impact of the text and a literature education that facilitates the necessary opportunities to make the images and emotions evoked by literary works the focus of their thinking attention. In this manner, the positive value of literature is realized in confronting the fundamental ambiguity and diversity of human existence.

Narrative consists of linking images together to make sense of an otherwise inchoate and episodic existence. Through the imaginative projection into the consciousness of the characters, the narrator, and the poet, we are invited to explore our existential freedom. As we have seen, the nature of human consciousness is such that no two persons are likely to ever experience a text in precisely the same way. Imagery and affect however, do work to connect varying experiences to produce responses that might serve to unite us in our humanity.

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