Understanding Difficulty: 
Reader Response and Cognition Across Genres

by

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Abstract

Reader response and reader reception theories of the twentieth-century have left one area of research curiously unexamined—readers. From the Russian Formalists (Victor Shklovsky), to the Constance school (Hans Robert Jauss and Wolfgang Iser), to the poststructuralists (Roland Barthes, Jacques Derrida), the focus of theorists has always been on texts and the characteristics that define their literariness. Readers—in actuality, a multitude of real individuals with various aptitudes, experiences and tastes—have been abstracted into “the reader,” a hypothetical everyman. As such, a vast section on the spectrum of possible reader responses, which may include interest, intrigue and enjoyment, but also frustration, boredom and annoyance, has been regretfully ignored in the discipline of literary studies. Texts that present readers with difficulties—either linguistic or logical—highlight especially well the wide array of possible reader responses, for experimental art (whether visual or written) sets out to defy expectations, aiming precisely to incite controversy and divide opinions. This dissertation therefore takes up works published in the late 1960s and early 1970s that are known for their difficult, experimental styles and studies how readers respond to them, taking particular interest in the cognitive processes that are involved in the act of reading. Under the lens are Thomas Pynchon’s *Gravity’s Rainbow*, John Barth’s *Lost in the Funhouse*, Julio Cortázar’s *Rayuela* and Macedonio
Fernández’s *El Museo de la novela de la Eterna*. To consider the impact of readers’ expectations surrounding genre, responses to Jacques Derrida’s *De la grammaïologie*, a text of theory that employs similar formal games, are also compared. Numerous advances in the cognitive sciences over the past two decades have granted previously unfathomable insights into the functioning of the human brain where language and reading are concerned. The purpose of this thesis is twofold: 1) to promote a new framework for the study of reader response that is informed by the cognitive sciences; and 2) to acknowledge that texts elicit various responses from readers and thus argue that cognitive factors such as attention, long-term and working memory and emotions, as well as readers’ expectations of coherency, shape these responses.
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Introduction

A text depends not just on its author to come into existence, but also on its reader. Argentine author Jorge Luis Borges, who has explored the nature of text at length in his short stories, poems and essays, nicely captures the importance of this dynamic. He writes,

A book is more than a verbal structure or series of verbal structures; it is the dialogue it establishes with its reader and the intonation it imposes upon his voice and the changing and durable images it leaves in his memory. A book is not an isolated being; it is a relationship, an axis of innumerable relationships.¹

While the relationship between “verbal structures” and readers may be fundamental to texts and thus to the discipline of literary studies, because of the decidedly introspective nature of the act of reading, it is a rapport that is necessarily difficult to observe, to study and to understand. Texts have the ability to move readers, to persuade them, to entertain and delight them and even to frustrate and bore them. The spectrum of reader responses is vast, and a given text will not invariably elicit the same reaction from all of its readers, nor even draw the same response from the same reader on different occasions. A complex web of personal experiences and cognitive factors underlie the forking paths of possible permutations in readers’ responses. To comprehend the relationship between texts and their readers, then, it is important to have a sound grasp on how this network functions.

When texts present readers with difficulty, they tend to highlight especially well the varied nature of reader responses. Difficulty is of course relative for each reader, but the term is here employed in the manner that it is used by Leonard Diepeveen in The Difficulties of Modernism, to designate experimental forms that subvert conventional norms of language and logic.² Games with orthography, syntax, semantics and typography, for example, as well as disjointed narratives and paradoxical puzzles toy with readers, attempt to engage them, and are thus an apt


focal point in looking at reader response. Such play can be found in a wide variety of works that range in tone, message, and complexity. Among the most canonical examples are perhaps Lewis Carroll’s children’s tales, with their invented language Jabberwocky and fantastical worlds with inverted logical rules, and James Joyce’s equally inventive but more erudite fictions, with their multilingual word play, erratic syntax and stream-of-consciousness narration that foregoes teleological plotlines. Such subversions, generally intended to bring awareness to the conventional rules of language and logic, challenge readers, thus eliciting a wide array of responses as they engage to varying degrees with the formal play. The question we must ask ourselves as literary critics, then, is how well equipped are we to understand such a phenomenon? Do we truly comprehend how and why readers respond in the way they do to the stimuli presented to them by authors? What is more, are our existing reader response theories wide-reaching enough to satisfactorily address and explain the wide spectrum of responses across audiences and genres? Particularly over the past half century, literary studies has grown to recognize that various interpretations of a text are both possible and valid, and yet, for the most part, it has ignored that readers will also inevitably experience different responses to a text. Anything short of engagement and enjoyment—such as frustration, boredom, and discouragement—is rarely acknowledged in literary analyses and the theoretical foundations that underpin them. The cognitive and empirical reality of reading, one whose natural heterogeneity of responses is especially emphasized when difficulty is at the fore, is today largely ignored.

Unfortunately, when the topic of cognition is indeed addressed by literary critics, it is often only loosely grounded in scientific research, usually shaped by introspection or anecdotal evidence. In some cases, the application of medical psychology even borders on the prejudicial, with analogies of serious psychological ailments used to qualify the logical subversions found in a text. For example, in his structural analysis of the fantastic, a genre that is largely defined by the formal games noted above—an overturning of accepted common sense in an other-worldly setting—Tzvetan Todorov describes the dissolution of the boundary between the real and the imaginary that characterizes the genre through the use of what he deems abnormal psychological
Appealing to the psychiatry of the nineteenth century (despite writing in the mid-1970s), Todorov notes that the “psychotic [. . .] confuse[s] the perceived with the imaginary,” and suggests that this paradigm is representative of the “collapse of the limits between matter and mind” that is apparent in the literature of the fantastic (115-116). The “madness” on which Todorov focusses is schizophrenia, but he also notes the same blurring of the limits between the real and the fictional in the drug user, and even the developing child, according to the psychology of Jean Piaget. While these references to psychological states allow Todorov to better describe the features of the texts that he wishes to highlight in his structural analysis, it must be remembered that they are not an accurate and factual explication of how the mind responds to illogicality. Like so many of his fellow literary critics, Todorov also dips into Freudian terminology and concepts to perform his textual analysis, in this particular case using the psychoanalytical constructs of neuroses and psychoses to define what he calls the “themes of the self” and “themes of the other” in the fantastic. While Freud can be credited for his seminal contribution to the discipline of psychology, his theories have today largely been discredited, replaced by more modern approaches. In a 2008 report, the American Psychological Association even characterized psychoanalysis as “desiccated and dead,” noting that Freud’s theories find more recognition in academia within humanities than in psychology departments. And so, not only does Todorov appeal to an outdated body of knowledge and inappropriate psychological conditions to explain the curious logical anomalies found with the pages of a fantastic text, but he also risks romanticizing serious afflictions (schizophrenia, drug addiction) in using them to illustrate how texts explore the bounds of the possible and expand the limits of the imagination. His approach—it must be noted—is not uncommon for literary critics in general, particularly when what are under the lens are texts that employ subversions of language and logic.

Literary critics are of course not alone at fault for the unsuitable or incorrect usage of medical and scientific knowledge on cognition, for authors themselves often work the allusions directly

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into their fictions. In addition to madness, the less polemical sensation of vertigo, a diagnosable psychological condition, finds itself frequently called upon in scenes and passages that explore and confront the illogical, the paradoxical and the infinite. In its strict medical definition, vertigo is a sensation of disorientation resulting in dizziness, but in common parlance, the term is often used to depict a fear of heights. Both designations are regularly cited in texts that subvert the conventional rules of logic. Taking, for instance, two of the authors noted above, Carroll and Borges, we see references to vertigo abound in their work. Carroll invites this idea when he has his title character Alice cross over to Wonderland—a place where the rules of language, grammar and logic are tested and inverted—through a seemingly interminable fall down a rabbit hole where she becomes disoriented in both time and space: “Down, down, down,” Carroll writes, “[w]ould the fall never come to an end! ‘I wonder how many miles I’ve fallen by this time?’ [Alice] said aloud.”

Borges, meanwhile, often uses vertigo as a leitmotif, mentioning it outright in describing the effects of simulacra, where the basis of what is apparently real is in fact fiction, illusion, reflection or copy, an incongruous reversal of cause and effect that questions conventional rules of order and teleology. In the short story “Tlön, Uqbar, Orbis Tertius,” for example, when Borges as the narrator discovers a volume from an elusive encyclopaedic series that describes in precise detail an entirely fictional world that eventually materializes on earth, he says, “I began to leaf through it and experienced an astonished and airy feeling of vertigo.”

Similarly, in “The Circular Ruins,” a tale in which a man dreams into reality a son, only to later discover that he himself is dreamed by another, this dreamer prophetically laments the eventual discovery of his chimerical origins with the words, “Not to be a man, to be the projection of another man’s dream, what a feeling of humiliation, of vertigo!” Perhaps it is not surprising that authors describe the effect of having the common rules of logic challenged, undermined and


dismantled with the notion of vertigo, for it is comparable to having the solid ground beneath one’s feet shift and fall away. The implication is that as characters in the tale experience this unnerving sensation, readers too, who are being exposed to the very same probes into the logical framework that dominates their lives, face a similar feeling. However, it must be made clear that it is not in fact vertigo that readers experience, as vertigo has a very real and distinct cognitive imprint, involving the fluids of the ear, as well as the physical sense of balance—not an ontological one. The impact of play with words and logic on the brain is indeed real and definable, but it is of a different nature altogether.

Tremendous developments have been made in psychology and neuroscience over the past two decades that can allow us today to better understand how it is that the mind responds to linguistic and logical puzzles, and to thus to have a firmer grasp on reader response. The rapprochement between the cognitive sciences and literary theory is not new, nor limited to this specific area of inquiry. As the sciences of the mind developed at the end of the twentieth century, with magnetic resonance imaging (MRI), magnetoencephalography (MEG), electroencephalography (EEG), and eye tracking technology, adventurous literary critics took interest, and carved out a field of literary theory that has come to be known as cognitive literary criticism. This “new interdisciplinarity,” as Mary Thomas Crane and Alan Richardson have famously referred to it, explores the same interests as traditional literary theory—narratology, poetics, rhetoric—but with a view on the cognitive realities behind these textual elements. Though the field is still young, significant contributions have been made, touching on a number of topics. On narrative, there

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8 MRIs produce images of brain activity using magnetic fields and radio wave pulses, MEGs map naturally occurring magnetic fields of brain activity, and EEGs record electrical activity along the scalp.


is Mark Turner’s *The Literary Mind*, which argues that stories and parables are the basis of everyday human experience and thought, and David Herman’s *Story Logic*, which provides synopses of the various understandings of narrative within cognitive sciences, linguistics and literary theory with a view to sharing the insights of each field so that it may be leveraged by others.\(^{11}\) Patrick Colm Hogan, meanwhile, has defended the idea of “cross-cultural invariants” in stories (or, universals in literature), based on our evolutionary history and biological make-up.\(^{12}\) On representation, there is Robert Storey’s *Mimesis and the Human Animal: On the Biogenetic Foundations of Literary Representation*, which attempts to uncover the biological (Darwinian) basis of literary representation, Elaine Scarry’s *Dreaming by the Book*, which examines the notion of beauty and how writers teach readers to imagine, or mentally compose an image, and Ellen Spolsky’s *Gaps in Nature: Literary Interpretation and the Modular Mind*, which studies gaps in representation with a view to demonstrating how evolutionary cognitive sciences fit with poststructuralist understandings of representation.\(^{13}\) On authoring, there is Mary Thomas Crane’s *Shakespeare’s Brain: Reading with Cognitive Theory*, which posits that certain aspects of the mindset of an author can be deduced through careful analysis of the patterns formed by the words on the page.\(^{14}\) Much has also been written on reading and reader response. For instance, there is Reuven Tsur’s *Towards a Theory of Cognitive Poetics*, which studies the effects of poetry, and Ellen Esrock’s *The Reader’s Eye: Visual Imagining as Reader*.


Response, which looks more broadly at the senses and the experience of art.\textsuperscript{15} Norman Holland, whose long career first saw him apply psychoanalytic psychology to reader response in the 1960s (especially his 1968 publication The Dynamics of Literary Response), has more recently in Literature and the Brain leaned towards neuroscience to seek to explain the response to art and literature.\textsuperscript{16} David Miall, sometimes with co-author Donald Kuiken, has also published extensively on the neuroanatomy of reading, even bringing empirical research to literary studies.\textsuperscript{17} The present thesis looks to add to the existing body of knowledge in cognitive literary criticism and reader response, with a particular focus on works that are considered difficult to read due to subversions of language and logic.

While linguistic and logical play does not limit itself to any particular era or genre, the modernist pursuit of innovation that shaped the arts of the twentieth century has resulted in a slew of highly experimental and often deeply self-reflexive and metafictional texts. Those published around the late 1960s and early 1970s will be studied here. What is especially interesting about this period is how difficulty began to cross over into the genre of theory. The Modernist works of art and fiction created at the beginning of the century that challenged their audiences received deeply mixed responses.\textsuperscript{18} However, over time, they influenced culture and their subversive style earned more unanimous appreciation and recognition, often demonstrated in the form of literary prizes. Certainly a testament to the growing ubiquity of difficulty as an aesthetic, by the late 1960s, formal experimentation had become so ingrained within the arts that it even crossed over to the realm of literary theory, with the poststructuralist works of thinkers such as Jacques


\textsuperscript{18} The history of the reception of Modernist art will be discussed in more detail in Chapter 1, drawing primarily from Diepeveen’s The Difficulties of Modernism (cited above).
Derrida, Julia Kristeva, Luce Irigaray, Michel Foucault, and Gilles Deleuze featuring many of the self-reflexive styles and games of language and logic common to texts of fiction. Not surprisingly, the public reaction to this new form of persuasive writing was mixed, echoing the original response to experimental forms in fiction. Even today, while poststructuralist thought has earned itself a remarkable and significant following in the discipline of literary theory, the controversy around the style that characterizes its seminal theoretical texts is ongoing, with biting commentaries and frustrated dismissals in book reviews and publications by fellow literary critics. Poststructuralist theory has even prompted mock “bad writing contests” and elicited scalding obituaries for its authors.

The polarity of the possible reactions to a given text here noted—both at a given moment in time and over the course of history—should remind us of the truly varied nature of reader response. We must remember that these responses are shaped by a multitude of variables, which include culture, prior experiences and preferences, and also cognitive abilities. In literary studies to date, the latter is by far the most understudied. This thesis will therefore draw on research in the cognitive sciences to attempt to remedy this oversight and to better understand why it is that readers respond the way they do to texts that present formal difficulties in language and in logic. The dimension of genre will also be taken into account, with both texts of fiction and texts of theory under the lens. Expectations of coherency inevitably help shape response, and so it is important to consider how generic expectations come into play.

In taking up texts of theory and subjecting them to the same kind of analysis as is performed on texts of fiction, the issue of literariness and its defining characteristics is inevitably raised. Yet, in this discussion, the topic will be placed within parentheses. The current thesis concerns itself with uncovering general principles of reading and the responses of the brain before games of language and logic, which could—let it be clear—present themselves in any number of formats, from fiction to theory, to the visual arts, to movies and even to print and television advertising. It does not set out to attempt to delineate the parameters of “literature” or “art” in any explicit way, nor concern itself with the categorization of works as either literary or non-literary. Whether a text of theory is classified as literary or not is here besides the point, especially given the acknowledgement of the vast array of possible responses to a given text. While one reader could be moved by or respond to a text of theory in a manner that would make a strong case for the literariness of that text, another reader will certainly respond in a different fashion, perhaps
providing fodder for precisely the opposing argument. The classification of a given text is an issue that could be endlessly debated, and so this is not a discussion that will dominate these pages. Instead, the focus will be on how the brain carries out the act of reading, and, more specifically, how it responds before texts and passages that are especially complex, challenging, and linguistically and logically subversive. If any position at all need be taken on the matter, it is that literariness can be viewed as a relative rather than an intrinsic quality. In this way, this thesis largely sets itself apart from existing theories of reader response in literary theory, and, as will be seen further in Chapter 1, from some approaches that align themselves with cognitive literary criticism as well.

The purpose of the present work is to contribute to and to update existing reader response theories by looking to the cognitive sciences. It argues that difficulty in texts elicits responses that vary from reader to reader, and that these responses are observable in a growing number of ways thanks to recent advances in the cognitive sciences where language comprehension and reading are concerned. For example, eye movements can now be tracked, retention in memory can be tested, and even brain activity can be monitored. Difficulty, as will be seen in the following four chapters, is grounded in cognitive functions and abilities (long term and working memory, attention, emotion, etc.), and reader response theories in literary studies ought to acknowledge this reality. While experimentation is outside the scope of this study, existing empirical research is nevertheless drawn on heavily to attempt to better understand readers’ analogous reactions to particular formal features of texts. In the end, the overarching goal of this dissertation is to further develop the dialogue between literary theory and the cognitive sciences, a field that is itself relatively young and full of promise. Given that they have common objects of study—language and comprehension—both have much to offer each other, and any underlying paradigmatic differences should not prevent a healthy exchange of ideas.19

19 The compatibility of the two disciplines and thus the fate of the cognitive literary criticism movement was discussed at length during its infancy, especially in the pages of the journals Poetics Today and Philosophy and Literature. For more on this debate, see Tony Jackson, “Questioning Interdisciplinarity: Cognitive Science, Evolutionary Psychology, and Literary Criticism,” Poetics Today 21, no. 2 (Summer 2000): 319-47; and Alan Richardson, “Cognitive Science and the Future of Literary Studies,” Philosophy and Literature 23, no. 1 (1999): 157-73.
The corpus of texts selected for this study spans three different geographic regions and linguistic and cultural traditions, but these texts are united by both their time of publication—the late 1960s, early 1970s—and their highly experimental nature. Subversions of the conventional rules of grammar and logic dominate their pages. Works from the American, Latin American, and French contexts are featured. The American texts consist of John Barth’s *Lost in the Funhouse* and Thomas Pynchon’s *Gravity’s Rainbow*. Both books are generally associated with early postmodernism and thus feature playful challenges to linguistic forms, teleology, and linearity. *Lost in the Funhouse* is a collection of short stories perhaps best known for its meta-narrative elements, while *Gravity’s Rainbow* is a lengthy novel that presents readers with a complex and tangled web of interweaving storylines composed of hundreds of characters set within fleeting vignettes. In the Latin American context, the label “postmodern” does not apply in the same way, but the texts selected—Julio Cortázar’s *Rayuela* and Macedonio Fernández’s *El Museo de la novela de la Eterna*—present comparable games with language and logic. *Rayuela* is crafted to resemble the structure of a hopscotch, with short sections within which readers are invited to skip, so that the text functions a lot like a choose-your-own-adventure book. *El Museo de la novela de la Eterna*, meanwhile, is notable for its long series of prologues that defer the onset of the novel, as well as its highly metafictional narrative that offers a rich commentary on the various possibilities of reader responses. Although the author began composing it in the 1920s so that it perhaps more properly belongs to the Argentinian vanguardista movement of the time, it was first published posthumously in 1967, and is remarkably in tune with the literary style of this latter era. Responses to these texts are examined in the context of one of the most seminal texts of the poststructuralist movement in literary theory, which saw its roots in France: Derrida’s *De la grammatologie*. *De la grammatologie*, while a text of theory, engages in linguistic and logical subversions in its questioning of logocentrism that strongly resonate with

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those found in the fictions penned by Barth, Pynchon, Macedonio and Cortázar, published contemporaneously.

Chapter 1 serves as an introduction to chapters 2 through 4, outlining the context and theoretical backdrop to the analyses that follow. It stresses the different possible reactions to texts, with a special focus on the way similar games with language and logic elicit various responses and emotions when located within different generic contexts, such as fiction and theory. The polarity of the responses to the subversive style of writing commonly used by poststructuralist thinkers is addressed at length, contrasted with the historically increasing acceptance of works of fiction that feature similar play. A closer look at difficulty and some theoretical approaches to it to date helps puts these responses into context. A synopsis of reader response and reader reception theories in the discipline of literary studies is also offered, with a view to highlighting the gaps they leave unaddressed, particularly where cognition, the empirical reality of reading, and the diversity of responses are concerned. Finally, Chapter 1 makes a case for the appeal to research in the cognitive sciences to better understand how linguistic processing and reader response work, and presents the basic framework for cognition that underlies the analyses taken up in the following chapters.

Chapters 2 and 3 examine the formal play located in the works of Barth, Pynchon, Cortázar and Macedonio, and its implications for reader response. Local level difficulty, such as games with orthography, grammar, syntax are grouped under the rubric of “microstructure” and studied in Chapter 2; play at the narrative—or “macrostructural”—level, meanwhile, is taken up in Chapter 3. In both chapters, actual reader responses are pulled from a variety of sources, including footnotes, scholarly articles and online commentaries, with a view to identifying the characteristics of the text that are found to be difficult and on highlighting the diversity of responses to formal play. Responses from both academic sources and the general public are considered and treated as equally informative. The objective is to paint as realistic a picture of the reception to the texts as possible, and it must be remembered that this reception naturally includes a much broader audience than those individuals who are trained in literary criticism. Relevant studies in the cognitive sciences are then addressed to provide insight into how the linguistic and logical subversions located within these texts may affect the mind and the reading process, judging in part by how audiences have generally reacted to the texts. The chapters are structured so as to pair topics in cognition with texts that most prominently feature the formal
complexities that underscore them. In Chapter 2, which focuses on microstructure, Cortázar is studied in the context of orthographic processing; Barth, syntactic processing; Pynchon, vocabulary and word acquisition; and Macedonio, paradoxical puzzles at the linguistic level. In Chapter 3, which turns to macrostructure, the same texts are taken up once again but here, their narrative level subversions form the focus of the inquiry. Cortázar’s *Rayuela* is looked at for the lessons it can offer on inference generation and the roles of the two hemispheres of the brain. Barth’s *Lost in the Funhouse*, meanwhile, provides insight into what is known in the cognitive sciences as “embodied cognition,” a theory that suggests that brain functions such as reasoning are based on prior experiential knowledge provided by the body and senses. Macedonio’s *Museo de la novela de la Eterna*, with its long series of prologues that defer the telling of the main story, is studied with an eye on suspense and attention, and Pynchon’s *Gravity’s Rainbow*, best known for its labyrinthine plotlines, is at the basis of a discussion on memory (working memory, long term memory) and text comprehension.

Chapter 4 takes up these themes and lessons in cognition once again and applies them to Derrida’s *De la grammastrologie*, a text of theory that employs similar linguistic and logical subversions as the above-mentioned texts of fiction. At the microstructural level, eye movements, semantics, and syntax are studied in the context of Derrida’s linguistic subversions, which include, among others, puns, long breathless sentences and sometimes erratic syntactical structures, crossed out words, and unclear and often paradoxical denotative meanings. The play that he explores at the macrostructural level includes, on the other hand, ambiguous argumentative positions, paradoxical logic, long and often indefinite deferrals of meaning, and overall taxing argumentative structures. These features may be studied with a view on the cognitive elements noted above—-inference generation, embodied cognition, attention and suspense, memory and text comprehension. What is especially worth noting in this analysis of a work of theory is how the formal complexities of the text often call for immediate (or online) responses similar to those elicited by texts of fiction—that is, responses that take place within the first few milliseconds of linguistic processing. Genre indeed plays a role in how readers respond to texts, but its influences appear more pronounced in the later (offline) responses, when readers have moved their eyes from the text and mull over what they have just read.

While this dissertation takes up texts chosen from the late 1960s and early 1970s, and in part frames the discussion of reader response around issues raised by genre, what it mostly attempts
to bring to the fore are the new possibilities for reader response theories in literary theory raised by the latest advances in the cognitive sciences. The lessons learned here are meant to be broadly applicable to a variety of texts, from different eras and from different generic contexts (beyond simply fiction and theory). The emphasis is not on generating innovative textual analysis of the works featured but on encouraging a better understanding of the reading process, linguistic processing and text comprehension, given the tools, research and knowledge available today.
1 The Reception of Difficulty

The publication of works like *After Theory*,1 *Reading After Theory*,2 *Post-Theory*3 and *Rethinking Theory: a Critique of Contemporary Literary Theory and an Alternative Account*4 at the turn of the millennium marked a period of evaluation in literary studies assessing the status and direction of what has come to be known on North American campuses as “Theory,” or, more specifically, as “French Theory.” It was in 1982 that Jonathan Culler had first suggested in *On Deconstruction: Theory and Criticism after Structuralism* that “theory” had become a recognizable genre. While the New Critics, with their “criticism of criticism,” had generally been regarded as the creators of literary theory up until this point, this new genre that Culler identified included a broader, “puzzling mix” of thinkers from a variety of scholarly fields.5 The landscape of literary study was shifting, and the term “literary theory” had begun to adopt a new, wider signification. Culler writes:

Recently […] there has been increasing evidence that literary theory should be conceived differently. Whatever their effects on interpretation, works of literary theory are closely and vitally related to other writings within a domain as yet unnamed but often called ‘theory’ for short. This domain is not ‘literary theory,’ since many of its most interesting works do not explicitly address

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literature. It is not “philosophy” in the current sense of the term, since it includes Saussure, Marx, Freud, Erving Gottman, and Jacques Lacan, as well as Hegel, Nietzsch, and Hans-Georg Gadamer. It might be called ‘textual theory,’ if text is understood as ‘whatever is articulated by language,’ but the most convenient designation is simply the nickname ‘theory.’ (8)

Theory, Culler says, comprises some of the “most original thinking of what the French call les sciences humaines,” and it is sometimes referred to as “critical theory” or “literary theory” because of the role literature departments in England and America have played in spreading its views (9). Given its French roots, the term “French Theory” was also adopted. The thinkers especially in focus in this case include academics like Jacques Derrida, Michel Foucault, Jean Baudrillard and Gilles Deleuze, among others, whose ideas swept across North American campuses in the early 1970s thanks to an appearance by some of these theorists at a John Hopkins symposium entitled “Structure, Sign, and Play in the Discourse of the Human Sciences” in 1966, and to an interest in their collective works by a group of Yale academics.⁶

Today, what the term Theory denotes exactly, and what theorists are suggested by it, can be ambiguous. The 2005 anthology Theory’s Empire: An Anthology of Dissent attempts to define Culler’s coinage in a contemporary context. In the introduction, editors Daphne Patai and Will H. Corral broadly define Theory—“emblazoned with a capital T,” as they say, borrowing the capitalized version of the term from anthology contributor Valentine Cunningham—as the developments that come after structuralism.⁷ Theory, according to them, includes contributions from a variety of thinkers, such as Fredric Jameson, Louis Althusser, Terry Eagleton, Homi Bhabha and Judith Butler, the lot of French thinkers and French feminist critics such as Julia Kristeva, Hélène Cixous and Luce Irigaray, and generally any scholar included in the bevy of theory anthologies that have surfaced in the last few decades, including Hazard Adams’s Critical Theory Since Plato (1992), The Edinburgh Encyclopaedia of Modern Criticism and Theory (2002), Julie Rivkin and Michael Ryan’s Literary Theory: An Anthology (second edition, 1997), and Philip Rice and Patricia Waugh’s Modern Literary Theory: A Reader (2001). Valentine

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⁶ Sylvère Lotringer and Sande Cohen, French Theory in America (New York: Routledge, 2001), 140.

Cunningham, in the article “Theory, What Theory?” highlights Theory’s postmodernist connotations. For Cunningham, Theory is what is indicated by a list of “115 deplorable Theory items” the U.S. National Association of Scholars used to identify postmodernist literature departments by studying their curricula (24). The list was printed in the London Times Literary Supplement in October of 2000, and includes the words:

agency, AIDS, Baudrillard, bodies, canonicity, Chomsky, cinematic, classism, codes, color, contextualism, decentered, Deleuze, de Man, Derrida, discourse, dominant, erotic, Eurocentric, feminism, feminisms, feminist, Foucault, Freud, Freudian, gay, gayness, gaze, gender, gendered, Guattari, gynocentric, hegemon, hegemonic, heteronormative, heterosexism, historicist, homoeroticism, identity, ideology, imperialism, incest, Lacan, lesbian, lesbianism, logocentric, Lyotard, maleness, marginalized, Marxism, modernism, oppression, otherness, patriarchal, patrimony, phallocentric, postcolonialism, postmodernism, poststructuralism, power, praxis, psychosexual, queer, queered, queering, race, sex, sexism, sexualities, slavery, structuralism, subaltern, subjectivism, theory, transgendered, transsexual, voice, whiteness, womanism, womyn.

Cunningham admits that the term Theory is “vague, ultra-compendious, a huge flag of convenience,” but says that “in practice we know more or less what it covers” (26). Theory, then, generally designates the writings of a broad spectrum of mostly twentieth-century thinkers, but it has a decidedly poststructuralist and postmodernist slant to it. For some, the list is more extensive than others. For instance, Culler includes in the category of theory French thinker Saussure—one of the seminal figures of structuralism. Saussure would also be on Patai and Corrall’s list, given that he figures in contemporary Theory anthologies. But one might hesitate in assigning Saussure to Cunningham’s list of Theory contributors, given that it is generally concerned with poststructuralist and postmodernist thought. His understanding of Theory, then, seems somewhat narrower than Culler’s, although there is much overlap. The expression “French Theory,” which is at the root of Theory, is of course far more precise. The term itself is an American invention, as Sylvère Lotringer and Sande Cohen remind us in French Theory in America: “The French themselves never conceived it as such,” they point out, adding that “[i]n

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France, French theory was considered philosophy, or psychoanalysis, or semiotics, or anthropology, in short any manner of ‘thinking’ (*pensée*) but never referred to as *theory*” (125). While the terms Theory and French Theory, then, have somewhat nebulous boundaries, most critics today are in relative agreement as to which thinkers the expressions generally denote.

French Theory in particular is especially known for its distinct style, for it often illustrates the points that it seeks to make through creative uses of language rather than the employment of clear explanations. In other words, it prefers to exemplify rather than to describe. The works of Foucault, Derrida, Kristeva, and Deleuze, for instance, are often dense, filled with neologisms and syntactical complexities such as long-winded sentences, and at times evidence much self-reflexive play. With Derrida, as we will see in further detail in Chapter 4, the form of the argument in many ways mirrors the content, so that the written language essentially performs the message it is conveying. Derrida’s conception of “différance,” for example, which suggests that written language both acquires and withholds its significance through an endless deferral of signifiers, is itself a play on words that indulges in paradoxical logic. It both enacts and describes the slippery and malleable nature of written language. In *French Theory: Foucault, Derrida Deleuze & Cie et les mutations de la vie intellectuelle aux États-Unis*, François Cusset describes at length the distinct style of French Theory, underscoring its opacity and the challenge it thereby poses to readers:

> les plus exigeants défendent jalousement son intransmissible difficulté, sa rigueur impartageable, moins par réflexe élitaire que par fidélité au souci ontologique qui l’inspire. Il faut dire que ses éléments récurrents—apories, mises en abyme, figures négatives, signifiants en excès—ne sont ni facilement accessibles conceptuellement ni aisément repérables dans les textes, littéraires ou théoriques qu’ils sont censés corroder.⁹

Form almost poetically conveys content through rhetorical figures such as aporia and *mise en abyme*. As form and content are therefore inseparable, it is perhaps not surprising that it was not only French ideas that took hold in North America, but also French style. This distinct mode of

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expression was certainly not lost on enthusiasts of poststructuralist thought outside France, as Lotringer and Cohen note:

American adherents tended to delight in this feature of much French theoretical language from Derridian wordplay to Baudrillardian hyperbole. Everyone involved in French theory and literary criticism learned to some extent its poetics by playing with words, ‘unpacking’ and splicing them with dashes and slashes.  

Theory, then, which arises around the late 1960s and which has made its mark by the early 1980s when Culler writes *On Deconstruction*, has its origins in French poststructuralist thought, and often takes its stylistic cues from the playful wordsmithing of thinkers like Derrida. It is this particular brand of Theory—that which manipulates the conventions of expository prose and thwarts possible expectations of a straightforward delivery of a message—that will interest me here.

Defining the precise boundaries of the genre which is here under the lens does present some complications given that the terminology delineating the group of thinkers writing in this particular, self-reflexive style is somewhat tangled, as noted above. On the one hand, the term French Theory is neatly precise for it points specifically to the group of scholars who originated the poststructuralist trend on North American campuses, and who set the tone for the direction literary of studies after the late 1960s (namely, Derrida, Foucault, Barthes, Baudrillard, Lacan, Deleuze), but on the other hand, it is inconveniently exclusionary for it overlooks the contributions of scholars of non-French origin whose writing styles have been influenced directly or indirectly by French thinkers, or whose ideas resonate strongly with their poststructuralist stance (Jameson, Homi Bhabha, and Butler, for instance). Whereas the term Theory is perhaps in many ways inconveniently broad, given that Patai and Corral identify it as any approach to literature covered in the newly popular theory anthologies, the term deconstruction is of course too narrow for it refers specifically to the method of analysis of Derrida and of those he influenced. The term “postmodern” (or “postmodernist”) comes with its own share of

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10 Lotringer and Cohen, *French Theory in America*, 219. Lotringer and Cohen add that critics “condemned the style as not only unidiomatic but also profoundly unpleasurable” because “[i]t seemed that too many native English speakers writing on or applying French theories were sounding a lot like French philosophers in translation, endlessly ‘turning back on themselves’.” (219)
 complications, with its wide-ranging connotations, unintended nuances, and complex history,\(^1\) but it is also necessary to the discussion, for, as Cunningham makes clear above, it does seem to identify a certain brand of literary theory. Alan Sokal, a physicist who has offered an important commentary on contemporary literary theory and has sparked a heated debate on the merit of its style, one which will be examined in detail below, similarly stresses the postmodernist connotations of the term Theory. In his attack against certain contemporary philosophers and literary theorists, namely French thinkers such as Derrida, Irigaray, Kristeva, Lacan and Foucault, he specifies that by “Theory”—the term he uses throughout his writings—he means “postmodernist literary theory.”\(^2\) The term poststructuralist theory probably most accurately denotes the brand of literary theory to which Cunningham and Sokal are alluding, but the term postmodern happens to fit their arguments better as they mean to address theoretical works not just directed at literature but in the social sciences in general. Sokal says that it is with “postmodernist literary theory” that he is preoccupied; however, as the title of his article expressing his views makes clear—“A Physicist Experiments with Cultural Studies,” his attack is not limited to literary theory.

In my own discussion, although I am referring primarily to poststructuralist theory, I will also use the terms Theory, French Theory, and postmodernist theory where appropriate. By Theory, I mean the narrower slice of contemporary theoretical works that display a postmodernist approach to literature and logic, and whose style often self-reflexively performs the arguments put forth. It is therefore Cunningham and Sokal’s collective interpretation of the term that I am adopting. Because so many critics of Theory—such as Sokal—use the term postmodern so prominently in their discussions, I will also readily employ this descriptor. This is especially appropriate given that my aim in this work is to contrast fictional works that fall into the category of postmodern (especially in the American context) to works of theory that are stylistically comparable. Fiction, of course, is not generally referred to as poststructuralist—only

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approaches to literature are described as such. Other scholars have alternated between the terms poststructuralist and postmodernist just as comfortably in referring to theoretical pieces. For instance, Madan Sarup, in “An Introductory Guide to Post-Structuralism and Postmodernism,” notes the affinity between the two terms: “In my opinion poststructuralists like Foucault, Derrida and Lyotard are postmodernists,” he writes, clarifying, “[t]here are so many similarities between poststructuralist theories and postmodernist practices that it is difficult to make a clear distinction between them” (131). Taking my cue from Sarup, then, I will use both terms to indicate the works of a similar grouping of thinkers, namely the French Theory group and those whose style of theoretical writing resonates with the self-referential, performative language its proponents employ—Derrida’s oeuvre being the textbook example, and Homi Bhabha, Irigaray, and Deleuze, for instance, providing further contributions with their own individual stylistic nuances.

French Theory met with much interest and acclaim when it was first introduced in North America, and thinkers like Foucault, Baudrillard, and especially Derrida enjoyed a fame the likes of which had not before been seen in the humanities. In fact, what they became are “academic stars,” a phenomenon which David. R. Shumway describes as “a fundamental shift in the profession of literary studies” (90). While in France, the thinkers’ popularity waned, in North America, their ideas quickly established themselves as the central discourse in literary studies. “[A]u moment où Foucault, Lyotard, et Derrida devenaient incontournables dans l’université américaine, leurs noms connaissaient en France une éclipse systématique,” writes François Cusset (22). Despite its warm reception on most campuses, however, French Theory—and of course Theory generally—has had its share of critics along the way. For instance, although French Theory was born out of philosophy departments abroad, it never found its niche there in Europe. Many have also accused French Theory of being too nihilistic. According to René Wellek,

The creed of deconstructionism makes […] preposterous claims or pushes some arguable doctrines to absurd extremes. No self, no author, no coherent work, no relation to reality, no correct interpretation, no distinction between art and non-art, fictional and expository writing, no value judgment, and finally no truth, but
only nothingness—these are negations that destroy literary studies.  

Interestingly, many attacks against Theory and French Theory are not aimed necessarily at their polemics, but at the language in which they convey their arguments. Derrida and deconstruction have of course borne the brunt of the assault. As Lotringer and Cohen write, Derrida, “singled out as the one responsible for disseminating poststructuralism’s most pernicious strain of obfuscatory prose, was familiarly referred to as Derridoodle or by those who really resented his work as Derridooodoo” (217-18). Theory has generally been repeatedly chided for the difficulty of its writing style, not only within, but also outside academia.

Three relatively recent events exhibiting this disdain have even made popular headlines outside the academy, in The Times and the New Yorker, for example: the Sokal Hoax, Philosophy and Literature’s Bad writing contest, and the petition against Derrida’s honorary degree from Cambridge. In 1996, American physicist Alan Sokal submitted to Social Text, a poststructuralist peer-reviewed journal, an article entitled “Transgressing the Boundaries: Toward a Transformative Hermeneutics of Quantum Gravity” for its Spring/Summer issue themed “Science Wars.” Sokal’s article was in fact a ruse, a parody of postmodern rhetoric written by a scientist who later admitted to be “unable to make head or tail of jouissance and différance” (“Physicist Experiements,” 62). Primarily concerned with the way postmodernist theory treated the sciences as a manipulable “text,” borrowing from them with little understanding or regard for accuracy, Sokal submitted the article for publication as an experiment intended “to test the prevailing intellectual standards” in the humanities (62). The article cited some of the dominant


15 In a book he co-authors with Jean Bricmont, Impostures Intellectuelles (published in France a year after the scandal), Sokal dwells on the issue at greater length, exposing some more erroneous and preposterous uses of science in the works of certain key contemporary theorists in the humanities: Kristeva and Lacan on mathematical logic, Irigaray on solid and fluid mechanics, Deleuze and Guattari on differential and integral calculus and quantum mechanics, and Baudrillard on Euclidean and non-Euclidean geometries. Alan Sokal and Jean Bricmont, Impostures Intellectuelles (France: Éditions Odile Jacob, 1997).
poststructuralist thinkers of the day (Derrida, Lacan, Irigaray, among others), and rigorously footnoted its scientific contributions. However, as Sokal later admitted, it was “liberally salted with nonsense,” and meant only to “[flatter] the editors’ ideological preconceptions” (62). The article was written in a difficult language that mimicked what Sokal considered to be the “obscure and pretentious” style of the postmodernists ("Physicist Experiments," 64). To Sokal’s surprise and dismay, the bogus article indeed passed Social Text’s peer-review process and was published. On the same day the journal was released, Sokal published another article in the journal Lingua Franca to expose the hoax. In this article, “A Physicist Experiments with Cultural Studies,” Sokal laments,

It’s understandable that the editors of Social Text were unable to evaluate critically the technical aspects of my article (which is exactly why they should have consulted a scientist). What's more surprising is how readily they accepted my implication that the search for truth in science must be subordinated to a political agenda, and how oblivious they were to the article’s overall illogic. (63-64)

The hoax was revelatory, and proof, for Sokal, that postmodern theory is so incomprehensible and nonsensical that even those already initiated in its convoluted language do not really understand what it is saying. In his Lingua Franca disclosure, Sokal pointed out some of the illogical leaps he made between assertions and citations throughout his paper. Mostly frustrated by the way postmodernist theorists “blur obvious truths” by “presenting the world’s physical properties” as “social constructions,” Sokal charged that postmodernists value artistry at the expense of common sense: “[i]ncomprehensibility becomes a virtue,” he accuses, as “allusions, metaphors and puns substitute for evidence and logic” (64). In a cheekier tone, Sokal challenges, “anyone who believes that the laws of physics are mere social conventions is invited to try transgressing those conventions from the windows of my apartment. (I live on the twenty-first floor)” (62). For Sokal, not only does postmodernist theory defy common sense, but—even worse—it conceals this very irrationality in an inaccessible prose, one that proliferates throughout the academy thanks to its resulting illusion of profundity.
The Sokal Hoax is part of a larger reaction against the rhetoric of postmodernist theorists in the 1990s. A more pointed attack was directed at Derrida and his deconstruction in 1992. A group of philosophers, as concerned as Sokal with sophistry, petitioned against Derrida’s award of an honorary degree from Cambridge University. In a now famous letter published in London’s *The Times*, Barry Smith, Ruth Barcan Marcus, Willard van Orman Quine, and some twenty other philosophers attacked Derrida’s style for being laden with “tricks and gimmicks similar to those of the Dadaists.” Whereas Sokal worried about French Theory’s abuse of science, the Cambridge group questioned the status of Derrida’s work as philosophy. Yet, although the philosophers were concerned that Derrida’s contributions to the field were “either false or trivial,” the bulk of their attack was aimed at the unnecessarily convoluted language in which he conveyed these ideas. “M. Derrida’s work does not meet accepted standards of clarity and rigor,” they argued, insisting that many of his writings “consist in no small part of elaborate jokes and the puns ‘logical phallusies’ and the like.” Charging that “his works employ a written style that defies comprehension,” they concluded the petition by chastising his oeuvre for being “little more than semi-intelligible attacks upon the values of reason, truth, and scholarship.” It is evident that it is primarily with Derrida’s style, rather than his philosophy, that the group took issue.

In the end, Derrida was indeed awarded the degree by Cambridge, but the scandal was imprinted on his memory, even garnering mentions in his obituaries in the *New York Times* and the

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16 The Sokal hoax alone did not have the impact on the humanities that the physicist had hoped. As John Guillory explains, “The Sokal hoax shares with other controversies of our time the typical feature of erupting suddenly with the threat of dire consequences, only to disappear quickly and nearly completely from public consciousness.” But, according to Guillory, this is more a reflection of the academy and the nature of criticism than of the importance of Sokal’s experiment. John Guillory, “The Sokal Affair and the History of Criticism,” *Critical Inquiry* 28, no. 2 (Winter 2002): 471.


18 Ibid.

19 Ibid.

20 Ibid.

The unintelligibility of Derrida’s style became one of his legacies.

In yet another famous attack on postmodernist theory, from 1995 to 1999, the journal *Philosophy and Literature* conducted its annual “Bad Writing” contest. Denis Dutton, the editor of the journal, less concerned with discrediting bad science and bad philosophy than with attacking obscurity in and of itself, asked readers to submit “the ugliest, most stylistically awful passage found in a scholarly book or article in the last few years” that they could find. Like Sokal and the Cambridge group, Dutton was alarmed by the unseemly proliferation of the postmodernist mode of expression in the humanities. In the call for submissions for the contest, meant very much as a tongue-in-cheek affair, Dutton declared, “There is an endless ocean of pretentious, turgid academic prose being added to daily, and we’ll continue to celebrate it.”

Journalism, fiction, parodies and translations were not eligible as entries, and so Derrida, Kristeva, and other French philosophers were exempt from the contest. Entries from their English-speaking disciples, however, were invited. Some of the more notorious winners include Judith Bulter, Homi K. Bhabha, and Frederic Jameson, whose works were described as “anxiety inducing” and “like swimming through cold porridge” by contest contributors.

Naturally, the *Philosophy and Literature* contest garnered considerable attention from scholars and the public at large, as well as a fair amount of angry feedback from the academics it derided and their supporters. One of the most formal and complete responses is Jonathan Culler and Kevin Lamb’s 2003 collection of essays titled *Just Being Difficult?: Academic Writing in the Public Arena*, which sets out to defend the kinds of obscure and difficult prose the contest

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23 Ibid.

24 Ibid.
attacks.\textsuperscript{25} The collection includes articles from Culler himself, Judith Butler, Barbara Johnson, and Rey Chow, among others, as well as an interview with Gayatri Chakravorty Spivak. Two main lines of defence stand out throughout the essays: first, the obscure rhetoric of postmodernist theorists is deliberately difficult in order to be politically subversive; and second, the style in question is in fact literary and thus deserving of further study.

Most essayists in Culler and Lamb’s collection invariably align what Dutton calls “bad” writing with the “deviant,” politicized writing of post-colonialist, feminist, and Marxists scholars who set out to question common sense.\textsuperscript{26} Contributor Peter Brooks, however, does make a distinction between “bad” and “difficult” writing in the sense that Dutton means. He writes: “I want to evacuate the question of ‘bad writing’ and leave it for what it is, bad writing, to get on to the more interesting question of difficult writing.”\textsuperscript{27} Book reviewer Mark Bauerlein elaborates on the distinction based on his own understanding of it, offering the following examples of “bad” writing, a passage taken from a statement of purpose written by Judith Butler in the MLA ballot for At-Large Member of the Executive Council (2001-04):

The MLA has an obligation to make clear the value of literary studies to the broader public and to counter the anti-intellectualism and sloganeering that threatens the critical thought within the academy. Perhaps most important is to show that a culturally

\textsuperscript{25} Some have criticized that this response may have been so late in coming that it proved to be inconsequential. Reviewer Mark Bauerlein explains, “five years have passed since the Bad Writing Contest hit the press, and the time lag is unfortunate. The back cover [of Just Being Difficult?] says that the volume ‘provides scholarly, thought-provoking examination of the debate over difficult academic writing,’ but in truth there is no more debate. Outside the tiny group of academic theorists, the question is closed.” Mark Bauerlein, “Bad Writing’s Back,” review of Just Being Difficult? Academic Writing in the Public Arena, eds. Jonathan Culler and Kevin Lamb, Philosophy and Literature 28, no. 1 (2004): 183.


complex range of writing and thinking compose the world of literary studies today.\textsuperscript{28}

Bauerlein notes, “Two sentences, two subject-verb disagreements” (184). He offers us a passage by another candidate, Rey Chow:

\begin{quote}
It is against this unfriendly global trend that the MLA must continue to reconceptualize its leadership for scholars specializing in the study of languages and literatures. Such leadership should consist, as it always does, in fostering a strong sense of community among its members at a critical time.\textsuperscript{29}
\end{quote}

Bauerlein criticizes, “An organization reconceptualizes its leadership for scholars (whatever that means), a process confounded by the nonsensical phrase ‘should consist, as it always does’” (184). It is not “bad,” but “difficult writing”—if a distinction can in fact be made—that will interest me here. This is the kind of writing associated with postmodernist theory. It is not necessarily “bad” by virtue of grammatical incorrectness, but for reasons of coherency, as it appears to attempt to transgress conventional logic not only through content but also through form. Convoluted logic, word play, specialized terminology, long-winded sentences and other kinds of syntactic and orthographic oddities all come into play to make the writing difficult. As Culler and Lamb explain and defend, “difficult” writing is “a criticism that aspires to find language about language yet is always already working through and with the tools about which it seeks to perform its explanatory magic.”\textsuperscript{30} Culler and Lamb are here attempting to reappropriate the term “bad” from Dutton to make it mean “difficult” invariably. “Difficult” writing is “theory [that] resists \textit{itself},” as they more succinctly put it (5). The “always already” of Culler and Lamb’s definition—is it worth pointing out—is a quick allusion to Derrida, indicating whom they have in mind when defining the term. “Difficult” writing, then, has both a political component—it sets itself up as “a provocation to think outside received categories,” as

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\textsuperscript{28} Bauerlein, “Bad Writing’s Back,” 184.
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\textsuperscript{29} Ibid.
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contributor David Palumbo-Liu puts it—and an important formal one, whereby play and indeterminacy challenge readers as they move through the text. Because postmodernist theorists generally adopt the view that transparent language dangerously conceals its underlying ideologies (Derrida, for instance, deconstructs this façade), “difficult” writing, as the book’s introduction explains, “must call attention to itself as an act that cannot be seen through” (9). Obscurity is deliberate and meaningful, and confusion before postmodernist texts is something to work through and with, according to Culler, Lamb, and others who take issue with what they see as Dutton’s simplistic understanding of “bad academic writing.”

The other major line of defense that the collection puts forth is that, for being less forthright with its signification, the opaque language of postmodernist theory is in itself a literary object proper. This type of text, then, should be appreciated and studied for its complexity rather than reproached for its lack of clarity, as with poetry and other art forms. Culler and Lamb question the generic disparity they see between the treatment of fiction and theory: “when the object under consideration inhabits the literary canon, difficulty is treated as richness and intricacy, the very qualities that make literature an object of exegetical energy and classroom study,” they write (2). The same difficulty, they point out, when located in theoretical texts, is somehow scorned.

Accordingly, many essayists in the collection (namely, Culler, Brooks, Rey Chow, and Robert Kaufman) make the analogy between the opacity of postmodernist theoretical texts and the inaccessibility of high modernist works. The comparison always revolves around the fundamental assumption that difficulty—and the work it requires from readers—is both valuable and constructive. For example, Brooks explains:

As someone educated when the avant-garde of high modernism still held sway, I was initiated into the belief that difficulty was a

31 Palumbo-Liu, however, goes on to doubt the supposedly ideologically-subversive powers of linguistic play all on its own. He writes: “It is all very well to argue that some kinds of difficult writing might be good, even politically necessary. But is difficulty a virtue in itself or an effective strategy for defamiliarizing common sense? To defend academic writing on such grounds is to assume that defamiliarization works all by itself. One falls into the same mistake as those who believe in transparency, saying nothing about context, audience, ways of reading, or mediation by form. How does writing defamiliarize common sense?” Palumbo-Liu, “The Morality of Form; Or, what’s ‘Bad’ about ‘Bad Writing’?,” 117.
positive value in art and that the explication of that difficulty was a worthwhile enterprise. It was worthwhile first of all because unpacking, making perspicuous, and trying to understand the difficulties of a Mallarmé sonnet or Eliot’s *Four Quartets* took one to what those poems were ‘about.’ (131)

Brooks suggests that history was not kind to postmodernist theory, as postmodernist theory never found its niche as an art form worthy of its own analysis. Scholars of decades past, he insists, failed to respond to French Theory with the same fervour, curiosity and diligence as they did to European modernism.

The coming to America of continental ‘theory’ in the 1970s created a new avant-garde of sorts—a genuine one, I think—and a new exegetical enterprise. Yet its fate was different because there was never a public consensus that the work in question constituted art objects whose public exegesis was important. (Witness the almost total neglect by the *New York Review of Books*, founded in the early 1960s, of the work of Lacan, Derrida, Barthes, Foucault, etc.) The need for exegetical criticism, it seems, was linked to poetry and novels. Expository prose of a challenging order could be left to take care of itself. If not immediately comprehensible, to hell with it. (133)

In other words, in striking contrast to critics like Sokal and Dutton who have called for an end to Theory, Brooks thinks that the problem with the response to Theory is that there has not been *enough* commentary on it.

In many ways, these scholars are right in pointing out the gap between the reaction to difficult fictional works and that towards difficult theoretical texts. Whereas challenging academic essays find themselves in the winners’ circle of “bad writing” contests, works by James Joyce, Kurt Vonnegut, and Thomas Pynchon consistently head lists celebrating the best novels ever written. *Ulysses* topped the Modern Library’s list in 1999, and *A Portrait of the Artist as a Young Man* followed closely in third. The selections did meet with some criticism. For example, CNN’s interactive message board reported reader Howard Paul Burgess as decrying,

*Ulysses* as the greatest novel of the century? [...] *Ulysses* is the biggest pile of gobbledygook ever perpetrated on the reading

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32 In addition to *Philosophy and Literature*’s contest, *Lingua Franca* put out its own call for entries in 1999.
public. I defy anyone to make sense of anything in that (admittedly, sometimes poetic) flow of words, words, words.  

However, most of the discontent was aimed at the list’s lack of representation where women and minority authors were concerned. In fact, when the Modern Library compiled a corresponding “Reader’s List” alongside their “Board’s List,” Joyce still fared well in eleventh place. He also placed similarly on lists compiled by Time magazine, the BBC, and the Norwegian Book Club. Three of his opening lines even made the top 25 of American Book Review’s “100 Best First Lines of Novels,” including Finnigan’s Wake’s unconventional “riverrun, past Even and Adam’s, from swerve of shore to bend of bay, brings us by a commodius vicus of recirculation back to Howth Castle and Environs.”

Culler et al.’s charge that opaque language is treated differently in fictional and theoretical texts therefore rings quite true. Just Being Difficult?, then, more than simply a response to Dutton and the contest enthusiasts, is perhaps also a call to academics and the public to read differently. Spivak, for instance, in her interview, encourages readers by saying, “It’s like going to the gym for me. Have you seen the people who are really trying at those machines—groaning but pushing? No pain, no gain? We know that in terms of the body. Why have we forgotten that in terms of the mind?” By insisting that postmodernist theory is akin to a literary object, Spivak

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33 The amusing quote is not chosen at random. The emotion behind the response and its irreverent tone are far from insignificant, but this will be dealt with more lengthily in the following section. Jamie Allen, “The top 100?: 100 best novels list draws heavy dose of criticism,” CNN, July 21, 1998 (posted May 6, 1999), http://www.cnn.com/books/news/9807/21/top.100.reax/index.html.


37 The bodily implications of Spivak’s commentary are significant, but this too will be addressed in the following section. Gayatri Chakravorty Spivak, “The Politics of the Production of Knowledge: An Interview with Gayatri Chakravorty Spivak,” by Stuart J. Murray, in Just Being Difficult? Academic Writing in the Public Arena, eds. Jonathan Culler and Kevin Lamb (Stanford, CA: Stanford University Press, 2003), 182.
and others are essentially making a case for its inherent value. If something is difficult, they argue,—fiction or theory—it must extend a certain reward for the effort it demands.

Yet, when viewed through a wider lens, even this bit of common sense may be challenged. The valuation of difficulty is not absolute, as Leonard Diepeveen reminds us in *The Difficulties of Modernism*. Instead, like any other response, it is historically grounded, in this case based on the events and artistic productions of the twentieth century. Modern art had to earn its acclaim, and the effort its difficulty demands from readers was not always seen as the “worthwhile enterprise” that Brooks recalls (131). Diepeveen recounts that when the modernist movement first began to take hold in literature, some readers expressed concern:

beginning in the second decade of the twentieth century one starts to hear the complaint that difficulty is everywhere. Earlier, and in the previous century (except, possibly, in painting), comments about difficulty are directed at individuals, such as George Meredith or Joseph Conrad. Around 1915 difficulty starts to be discussed as a *movement*, and a large movement indeed, for readers begin to comment on how difficulty had overtaken all the arts.\(^{38}\)

It is only by 1950 that “a fairly impermeable canon of high modernism had been established in the university curriculum,” Diepeveen explains (xiii). Modern literature’s early reception, he reminds us, was not exactly unanimously favourable. Reviews of Joyce, for instance—the author who now sits comfortably on critics’ and the public’s reading lists alike—were far from reverent. For example, a reviewer for *Time* magazine in 1923, in an article whose title begged “Shantih, Shantih, Shantih: Has the Reader Any Rights before the Bar of Literature?”, blasted, “There is a new kind of literature abroad in the land, whose only obvious fault is that no one can understand it,” explaining, “To the uninitiated it appeared that Mr. Joyce had taken some half million assorted words—many such as are not ordinarily heard in reputable circles—shaken them up in a colossal hat, laid them end to end.”\(^{39}\) Similarly, Holbrook Jackson, reviewing *Ulysses* for *To-Day* in 1922, protests, “The very format of the book is an affront. Bloom could


have been drawn effectively in a quarter of the words. There are the deadliest of Dead Seas in this ocean of prose. You get becalmed in them—bored, drowsed, bewildered.” As these early responses to Joyce’s work make evident, difficulty as an aesthetic was never an absolute. When it surfaced at the beginning of the twentieth century, it endured its share of growing pains. In the end, difficulty did take hold of the arts, and it is perhaps a testament to the firmness of its grasp that it now seems so naturally valuable. But as Diepeveen reminds us, relishing in opacity is a modernist invention. In fact, it is precisely what defined modernism in art and literature. “No difficulty, no high art,” as he puts it (34).

Over the course of the twentieth century, difficulty reshaped the arts and criticism, and, at the dawn of the twenty-first century, we are still in the wake of its inheritance. According to Diepeveen, we are today merely “acting out a modernist script”—we have only “tinkered” with the “twentieth-century’s default aesthetic” (228, 227). Culler et al.’s celebration of difficult writing would seem to confirm Diepeveen’s assertion. In defending the eccentric style of postmodernist theory, the authors of *Just Being Difficult*?—as well as other academics similarly outraged by the “Bad Writing Contest,” the Sokal hoax, and the reaction against Derrida’s Cambridge degree—are in fact merely attempting to extend the recognition of the modernist aesthetic of difficulty to yet another genre—to theory. Accordingly, some of the same arguments are being made, whether the recycling is conscious or not. For example, the distinction that Brooks makes between “good” and “bad” difficulty, where “bad” difficulty is perhaps accidental, and “good” difficulty is invariably meaningful, was also made by the early defenders of


41 Echoing Brooks, Diepeveen reminds that the New Critics’ enterprise was built on modernist difficulty: “Most notably, modernism changed what criticism did. It may be true that for the first time in history, criticism’s routine activity became not to articulate affect, but to elucidate meanings that the art work obscured, and show in what manner these meaning concealed and presented themselves. New Criticism was built for that job, a job that required substantial effort. It also required instant attention. Because modernism’s difficulty was apparent at very basic levels of comprehension, it produced an immediate crisis in reading, one to which the necessary professional service of New Criticism responded” (224).
modernist fiction. Diepeveen recalls that some critics even “reveled” in distinguishing between the two kinds (34). Similarly, as Diepeveen also attests, “to win over [...] lazy readers” modernism’s defenders encouraged that “works that initially seem difficult eventually become easier to understand” (26). This is an appeal that strongly resonates with Spivak’s “No pain, no gain” attitude, and her plea to readers to remember that the mind is an organ as in need of exercise as the rest of the body. The debate over the merits of “difficulty” is not new to postmodernism. It is just that the object on trial has shifted over the course of the century, from fiction and poetry to the theoretical text. What is especially important to note in the alignment of the modern and the postmodern eras, however—and this is a sentiment that is difficult to notice outright when Culler, Lamb, and the other essayists in the collection position themselves as the David to Dutton’s Goliath, fighting against common sense and its hidden ideological agenda from the margins—is the elitism inherent to their privileging of the “difficult.”

One of the accusations most sounded against the convoluted language of postmodernist theory is that it is—quite simply—“pretentious bullshit.” Faced with this condemnation, however, the admirers of postmodern rhetoric are left unharmed, and in fact, the charge only strengthens their position and status, as a rapprochement with the modernist reception of difficulty that Diepeveen uncovers would suggest. It is often felt that postmodernist theory is not meant to be a genuine communicative act. For instance, Raymond Tallis, an academic who defends Sokal and his experiment, writes:

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42 Interestingly, this same distinction between ‘good’ and ‘bad’ difficulty was first used against the modern aesthetic, which attests to both the malleability and the endurance of the claim. Diepeveen explains, “For the most part, those who used history to distinguish between bad and good difficulty distrusted modernism. These readers claimed that there used to be good difficult writing, but modern difficulty wasn’t it, for it was too extreme, or it was the wrong kind—perhaps it was deliberate, professionally crafted difficulty instead of the inevitable difficulty of the sublime, or of the genius, or even the new” (23).

43 For example, as Culler and Lamb defend in the introduction, “The claim not to understand might seem an innocent posture that people would seldom adopt willingly, but in fact it is one of considerable power [...] The person who does not understand or declines to understand, the interlocutor who has or pretends to have the less broadly knowledgeable understanding gets to determine the terms of the encounter. This is particularly salient in laws on rape, where Sedgwick writes—with some overstatement, one hopes—‘it matters not at all what the raped woman perceives or wants, so long as the man raping her can claim not to have noticed’ or understood” (3).

The Great Postmodernist Thinkers and their representatives make no concession to their auditors or readers. Even if the passages from Kristeva, Irigaray and others cited by S&B [Sokal and Bricmont in *Impostures Intellectuelles*] did not turn out to be nonsense scientifically, it would still be obvious that they were never intended as acts of communication, any more than the demented and aphasic mumblings of Lacan in old age, listened to with respect and awe by his anguished disciples, were genuine acts of communication. Communication requires not only that one knows what one wants to say but also that one has an idea where one’s audience is at and how best one can reach them. Kristeva, whose aim was not to communicate but to show off, to impress, to terrorise, knew very well that her audience would be unable to understand [sic] the pseudo-mathematical garbage she was imposing on them.\(^{45}\)

If critics get the sense that postmodernist theorists are speaking only to those within their circle, it is because, in many ways—as the analogy with modern literature suggests—they are. According to Diepeveen, the difficulty of modernist works acted as a “cultural gatekeeper,” where “knowing how to respond properly to difficult art became a way of indicating one’s membership in high culture” (xv). He writes:

> Difficulty is a nexus of attitudes and scripts that, to be literate in the arts, one needed—and still needs—to be able to negotiate instinctually. People admitted to the arena of high culture have become adept not so much at solving difficult work, but at knowing how initially to respond to the texture of the difficult experience. As soon as you know, for example, that difficult works are ‘serious’—and that ‘serious’ implies a host of behaviors and attitudes, from avoiding the gaucherie of laughter or anger, to eschewing ‘easy,’ nonproblematic pleasures, to beginning one’s understanding of difficult works with the assumption that difficulty is central to them and is tied up with these works’ large cultural ambitions—you have entered the arena of twentieth-century high art. (224)

Diepeveen insists that difficulty continues to be our “gatekeeper” today. Laughter and anger in the face of opacity, while perfectly natural responses, are also markers of exclusion. They

delimit a group that supposedly has a deeper understanding of the significance of difficulty for being the token responses of those outside of it.

We see this dynamic at work in Culler and Lamb’s collection of essays defending the difficulty of postmodernist theory. By suggesting that Dutton, Sokal, and similar critics have failed to understand and appreciate the complexity of postmodernist theory (not only explicitly, but also implicitly with the very creation of the collection which communicates a perceived need for explication), they are asserting the exclusivity of their group, of those “in-the-know”—and this positioning is what creates the aforementioned impression of marginality, when this distinction is in fact a source of authority. In uncanny accordance with Diepeveen’s finding that “[f]or difficult modernism’s supporters, laughter and anger were stupid responses, the mark of philistinism,” Culler and Lamb slight Philosophy and Literature’s contest as popular and trivial, belittling it as nothing more than “an academic version of Entertainment Weekly’s ‘worst dresses’ of the Oscars,” and accuse critics of postmodern rhetoric of not being “curious about the concealed or possibly missing meaning but angry at the obscurantism.” With these defenses, rather than encourage understanding—which is what they profess to be doing—Culler, Lamb, and the others, are in fact helping reinforce the polarity of the two groups—those who understand theoretical language versus those who do not. In doing so, they are placing Sokal, Dutton, and the analytical philosophers from Cambridge distinctly outside their circle, difficulty having enacted its role as the “cultural gatekeeper” that Diepeveen identifies.

In fact, it seems they do: Sokal, for instance, along with co-author Jean Bricmont in Impostures Intellectuelles, points out how Kristeva’s account of certain scientific principles are meaningless, such as ‘pl’ and the Axiom of Choice (42). Reviewer Raymond Tallis neatly summarises, “Among the numerous (and to them elementary) errors that S&B expose in Kristeva’s text are (a) her belief that Godel asserted the opposite of what he actually did assert in his famous theorem; (b) her misunderstanding that the axiom of choice implies a notion of constructability; and (c) her mistranscription of a definition of the set of functions Co (R^2) in a way that would hit anyone who knew about the necessary field in the eye” (38). Similarly, Sokal and Bricmont reveal some of Lacan’s own errors, confusing, for instance, irrational and imaginary numbers or the universal and existential quantifier—“the latter kind of mistake a first week student in mathematical logic would not perpetrate,” Tallis comments (38).

Diepeveen, The Difficulties of Modernism, 45; Culler and Lamb, Just Being Difficult?, 4. (my emphasis).

Their mission, as stated in the first page of the introduction, is “less about proving innocence than contesting the terms of the allegations, exposing to interrogation the history, conventions, and assumptions underlying the designation ‘bad writing’ and its almost inarguable efficacy” (1). In other words, they make no apologies for ‘bad writing,’ but seek only to explain it to those who fail to understand it.
The response to difficulty, then, is relative, and its privileging is grounded in high modern fiction, which prompted a shift in the value it was accorded. What is also important to note, however, is that laughter and anger are inextricably bound into the equation. That is to say, difficulty elicits a response that is overtly physical. Although reading always involves the body (the eyes, the brain), a challenging text—one that subverts expectations of coherency at one, or many levels (orthographic, syntactic, narrative, for instance)—will especially bring this reality to the fore.\(^49\) Yet, where reader response theories are concerned (namely, those of Wolfgang Iser, Hans Robert Jauss, Victor Shklovsky, as well as the views of the interpretive process of Roland Barthes, as will be examined in detail below), before difficulty or otherwise, this materiality (in the sense of the body and its physical context) is outright ignored.\(^50\) The following section will therefore take up Diepeveen’s understanding of difficulty at length to show the value and necessity of accounting for the physical in examining reader response, both within and across genres.

2 Difficulty Defined

There were few developed theories on difficulty available to modern critics, Diepeveen points out. Samuel Taylor Coleridge and Samuel Johnson were the two “major stopping points” for thinkers of the day, including Cleanth Brooks, I. A. Richards, and T. S. Eliot, who usually

\(^{49}\) In a passage that echoes Tallis’s complaint that postmodernist rhetoric is often not meant to be a true communicative act, Carlin Romano humourously plays on the more sensuous aspects of good communication and the disconnect that sometimes takes place between reader and writer. The article is suggestively titled “Was It as Bad for You as It Was for Me?”: “It’s poor chemistry between and reader (pontificator and pontificate, in the academic version), like lack of sizzle between jaded full professor and enthusiastic asst. prof. It’s the failure of Interrogator A to make the noises and gestures that work for Hegemonized Reader B. It may be Defamiliarizer A’s clumsy attempt to shake up the ideological/emotional/instrumental reflexes of Overly Essentialized Reader B. It may be the sheer incompetence at nouns, verbs, and adjectives” (B11). Though the bodily implications of understanding are here expressed in jest, they are nevertheless significant, as we will later see in more detail. Carlin Romano, “Was It as Bad for You as It Was for Me?,” *Chronicle of Higher Education* 50, no. 9 (October 2003): B11.

\(^{50}\) The term “materialist” is here and elsewhere meant to indicate the physical reality of the reading process (the body, the brain, and the environment in which the act takes place). In *Shakespeare’s Brain*, Many Thomas Crane uses the term in a similar fashion, as she examines texts and specifically the authoring process by drawing from the cognitive sciences. Mary Thomas Crane, *Shakespeare’s Brain: Reading with Cognitive Theory* (Princeton: Princeton University Press, 2001).
discussed them in relation to John Donne’s poetry (31). Difficulty as a topic, although frequently addressed, remained “untethered to rigorous analysis” (48). Accordingly, its terminology was varied and inconsistent, and “difficulty” was interchangeably referred to as “nonsense,” “obscurity,” “erudition,” “opacity,” “complexity,” “esoteric,” “unintelligible,” and “incoherence,” among others. What remains consistent, however, is that difficulty—under whatever moniker—is always construed as an experience. It is always “bewildering,” “confusing,” “baffling,” “perplexing,” or “challenging,” so that the affect of the reader and the formal features of the text work and are discussed in tangent (63). I return to the example of an early response to Joyce’s prose, where the reader insists, “You get becalmed in them—bored, drowsed, bewildered.” An anonymous reader of Gertrude Stein’s Tender Buttons in 1914 is even more graphic about this interplay between the text and the physicality of the mind:

After a hundred lines of this I wish to scream, I wish to burn the book, I am in agony. It is not because I know that words cannot be torn loose from their meanings without insulting the intellect. It is not because I see that this is a prime example of the ‘confusion of the arts.’ No, my feeling is purely physical. Someone has applied an egg beater to my brain.”

Difficulty is bodily experience, insists Diepeveen through these examples, and this is true for all texts—including both the early modern ones and the more contemporary.

For the purposes of his work, Diepeveen concentrates mostly on laughter and anger as the primary outward manifestations of the anxiety readers feel before modern texts or works of art because they function as the polar responses that turn difficulty into a “cultural gatekeeper.” But Diepeveen does not deny that an entire spectrum of responses—a “continuum of reactions”—to difficulty exists (243). For example, he offers the following 1910 cartoons by Frank Reynolds,


52 Jackson, “Ulysses à la Joyce,” quoted in Diepeveen, The Difficulties of Modernism, 76.

which humorously catalogue the varied responses elicited by post-Impressionist art, in order to defend his argument about the physical nature of the response.\textsuperscript{54}

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Diepeveen uses these caricatures to show that different types or patterns of behaviour exist before difficult works. Although the idea of a typology of responses seems reductive, Diepeveen only gestures to the general categories of possible affective responses to identify the role of difficulty in modern art, and by no means attempts any kind of taxonomy of responses. He looks for certain trends and patterns in the responses to artistic works of the twentieth century to generalize about the modern period, but he actually opens up and disentangles the idea of that a same text or work of art can elicit varied responses, from “praise” and “a smile,” to “scorn” and even “sleep,” as the Reynolds piece identifies—the latter (or forms thereof, such as boredom, putting the work aside, or simply skimming through it) being some of the most under-analyzed responses in literary theory.

If exercising the mind in reading is analogous to exercising the body, as Spivak insists, then everyone has different capabilities and limits before reaching a point of exhaustion. “Difficulty starts where one’s own understanding stops, where there’s no attempt at wanting to exercise one’s own critical capacity,” she explains in her Just Being Difficult? interview, noting that the point of exhaustion is individually determined (185). Her assertion echoes Diepeveen’s own view. He writes:

The line between pleasure and unmanageable anxiety is personally determined, occurring in an interaction between reader and text. For some, the difficult text is just too far along the curve; the argument about difficulty turns out to be one about whether there is too much difficulty. (243)

For Diepeveen, difficulty induces an anxiety in readers that—when it grows to be too much—will result either in “fight” with or “flight” from the text (74). Indeed, readers will either be put off—as were Sokal, the Cambridge group, and Dutton—or feel inspired to engage with the puzzles of the text—as was the Culler camp.

It is worth pointing out, also, that the materiality of the circumstance of reading extends far beyond the physical body, and necessarily includes the book as a tangible and manipulable object and the physicality of the context of reading. Margaret Ferguson, in Just Being Difficult?, makes this clear. Admitting that she herself has felt “irritation” before certain texts, and sometimes thought that “life is just too short to wade through one more convoluted sentence by (for instance) Luce Irigaray, or Jacques Derrida, or Theodor Adorno, or Cicero, or Milton,” she
begins to identify the sources of this difficulty, most of which exist outside of the text. She suggests the following:

[the] complex set of interactions between the features of a text (its grammar, its lexicon, its habits of allusion, but also, perhaps, the size of its print and the quality of its paper), on the one hand, and, on the other, variously educated and socially positioned readers whose tolerance for certain kinds of unfamiliarity may vary not only according to their education and social class but also according to their health and mood on a given day (16).

Although many literary scholars today already readily acknowledge that factors such as experience, education and social positioning influence readers’ interpretation of texts, the “health and mood on a given day” of readers, as well as the type of print and paper which bring written texts into being, have received far less attention. No reader response theory in literary studies to date—concerned with difficult texts or otherwise—takes these factors fully into account. The sketch that we as literary scholars have drawn ourselves of the reading process, then—that which lies at the centre of our discipline—is therefore incomplete in several important ways.

Readers, more than simply interpret texts differently—as is currently understood in literary theory post-Barthes, Derrida, and other poststructuralists—, also respond to them differently. The idea is simple enough, but perhaps because it is so basic, it tends to get easily ignored, treated inadequately or as peripheral in literary studies. It is my intent, then, to take into account the materiality of the reading circumstance in order to better understand reader response before difficult postmodernist works, especially those of Theory that have so perplexed and polarized scholars and the public alike, and which seem to have been treated differently than their fictional analogs, though both toy with language and logic in similar fashions.


56 Stanley Fish’s concept of ‘interpretative communities’ stands as the most renowned model of this sort. Stanley Fish, Is There a Text in this Class? The Authority of Interpretive Communities, (Cambridge, Massachusetts: Harvard University Press, 1980).
The danger with forgetting that readers invariably respond differently to the same text is the creation of a model of reading that employs an abstract, ideal, and singular reader inevitably based on the critic him or herself that does not reflect all readers. The meanings of a text may be teased out satisfactorily, but questions about what happens between the text and readers in any real way are left unanswered. Granted, our discipline studies literature and not psychology, but a model of reader response that properly takes into account the varied possibilities of readers’ reactions to texts, given that this relationship is the basis of the field, could lead to more refined and carefully-worded critical interpretations. As is, many exegeses of texts that purport to elucidate something of the difficulty therein forget not only that the texts “baffle,” “bewilder,” “perplex” and “challenge” readers in a real way—to recall some of the terminology Diepeveen identified—but also that they “baffle,” “bewilder,” “perplex,” and “challenge” differently across the spectrum of readers.

For example, a 1976 article by Roger Moss entitled “Difficult Language: the Justification of Joyce’s Syntax in Ulysses” addresses precisely this issue of reader response and difficulty. Despite Moss’s pretense of elaborating on the relationship between the text and its readers, the focus of the article is invariably on the text itself, which would not be so bad if the picture Ross painted of the readership of the novel was not so skewed. Ross explains that with this article, he is attempting to get at the “empirical sense of what is ‘difficult’ (what is hard to read)” in Joyce’s text. However, any real understanding of how readers actually respond becomes lost, as a generalized “we” or “the reader” takes over and veils what is actually an “I”—the critic—reading and responding to the text. The article begins with the sentence, “Confronting a difficult book the reader resists it by insisting that the difficulty stands in the way of his reading and must be disposed of before he can proceed” (131, my emphasis). Already in this opening sentence, what is surely meant to be a universal “the reader”—an everyman reading—becomes a specified and singular reader, tailored to the critic himself, as the masculine pronouns suggest. However, even if we brush this aside and consider the spirit rather than the letter of the statement, we are confronted on the next page by a change of focus, as “the reader” becomes a “we” (a group that at least more honestly includes Ross himself): “To single this one word out as ‘the word’

punctuates it: *we* are made conscious of its different status” (131, my emphasis). The problem lies not with the game of pronouns, but with the actions that these pronouns purport to accomplish. In the latter example, “*we*” are “made conscious.” Later in the article, “*we*” “turn to ‘the word’ as an active principle,” “*we*” “naturally read ‘Chrysostomos’ as a parenthesis,” “*we*” “learn, in coming to terms with the difficulty, that the shape of language and the shape of the world are distinct,” and “*we*” “sense in ‘Proteus’ Stephen’s own relief in solitude” (131, 132, 135, 138). Elsewhere, Ross writes that the “alliterative pressure makes us aware of the *sound* of language over its sense” and, “[o]f course we ‘correct’ that reading” (140, 141). My concern is that, surely, not all readers are “made conscious,” “turn to ‘the word’ as an active principle,” “read ‘Chrysostomos’ as a parenthesis,” “learn […] that the shape of language and the shape of the world are distinct,” or “sense in ‘Proteus’ Stephen’s own relief in solitude.” Readers’ responses to the text—especially to this notoriously difficult one—are far more varied than Ross lets on here, as Diepeveen and the Reynolds cartoons would remind us.

Formally speaking, the lines from *Ulysses* in question may encourage such responses, but they do not necessarily achieve them. When Ross points these out to us, he is most likely recounting his own experience of reading (maybe over multiple sittings), and assumes the response to be an inherent property of the text, a feature of its formal or rhetorical devices. Where Ross “learns,” “senses,” and “is made conscious,” other readers may in actuality feel annoyed or angered by the difficulty of the text, or—quite likely—have missed the point altogether, either still absorbed in what they have just read, already concentrating on what is to come, or, quite simply, refusing to play Joyce’s game altogether and skimming the words until something more comprehensible arises. There is no guarantee that all readers’ attention levels and focus will be the exact same as Ross’s. And, in fact, it is incredibly likely that the average readers’ responses will vary from those the critic outlines, given that the goal of published scholarship is some kind of advancement of the field—that is, the presentation of a new and original contribution to the collective interpretation of a work. If the responses Ross points out are so common, there would be no reason to comment on them.

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58 Victor Shklovsky’s principle of ‘defamiliarizing’ formal devices will be explored in depth in the following section.
The language that is used in this article and others like it is therefore persuasive, not descriptive. Ross writes that we “naturally read ‘Chrysostomos’ as a parenthesis,” and insists that “of course we correct [a certain] reading” (132, 141; my emphasis). These simple markers that point to the supposed naturalness of the actions Ross is identifying are examples of subtle but strong language designed to convince readers of what they ought to have felt—perhaps even by making them feel inadequate if they did not come to the same realizations (that is to say, difficulty is being made to enact its role as “gatekeeper”). They conceal under another yet another layer—beyond the everyman “reader” or the supposedly all-inclusive “we”—the fact that it is invariably only the critic who may infallibly respond in the way that is described.

Real readers can be addressed in a more careful and inclusive way in literary analysis, especially in works like Moss’s that purport to examine this intersection between them and the text. All that is needed is a change in focus and a new understanding and appreciation for a materialist view of reading, one which takes into the varied circumstances of reading of actual readers.

Reading involves a number of expectations about coherency, many of which are based around genre. Supporting this idea, in “Towards a Theory of Non-Genre Literature,” Jonathan Culler says that genre is more than simple abstract taxonomy, and that it is instead “a set of expectations, a set of instructions about the type of coherence one is to look for and the ways in which sequences are to be read.”59 He writes:

> Whether or not a text makes sense depends on the possibility of reading it as an instance of one of the types of intelligibility one has learned to look for. “Sense” is not a unitary category: what makes sense as a haiku would not make sense as instructions for a cake-mix. (255)

As the passage suggests, genre may refer to classical literary categories such as tragedy, comedy, and romance, but also to larger groupings of works, such as poetry, fiction, and expository prose. It is this latter categorization that interests me, especially in terms of the generic divide between fiction and theory.

Louise M. Rosenblatt has suggested that texts signal to us in which way we should approach them. According to her model, readers do not read a fictional narrative and an expository text in one of two set ways, but may shift their selective attention to read either text differently. Significantly, it is not the text that dictates how it ought to be read. It will influence readers, suggest a given approach, but not force a particular reading. According to Rosenblatt, there are two different modes of reading: in the “efferent” mode, readers are focussed on what to take away from the text, and in the “aesthetic” mode, they are focussed on the experience of reading it. The purpose of reading may fall along a continuum anywhere between these two poles. Although I suspect that reading modes do not limit themselves to just these two opposing poles, I agree with the agency Rosenblatt places in the reader. “A ‘reader’ is such by virtue of a relationship with a text,” she writes, “[a] ‘text’ is simply ink and paper unless a reader—be it only its first reader, the author—transforms its marks into verbal symbols.”

Rosenblatt, in essence, believes that reader response involves a dynamic relationship between texts and readers. What she puts forth is a “transactional” model of reading in which the text offers feedback as to how it can be read, but cannot guide the process in full. Cognitive principles naturally come into play, expectations going into a text and transformed by the text taking on a major role in the reading process.

Susan Stewart, in her book *Nonsense: Aspects of Intertextuality in Folklore and Literature*, discusses expectation in reading at length, especially before formally challenging or experimental texts, those which would thwart expectations most. She argues that, we, as individuals and as readers, sometimes box off that which appears problematic to us as something that is allowed or supposed to be problematic as one way to cope with “nonsense”—another word for “difficulty,” to recall Diepeveen’s terminological note. About formally irreconcilable contradictions, Stewart says,

> we can regard members engaged in sense-making activities to have three ways of dealing with contradiction: (1) they can resolve them according to some sense-making principle, (2) they can put them off to a later date when ‘more information’ will be available, or (3)

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they can classify them as nonsense and thereby limit their influence to another domain, a domain that is not any ‘real world.’

Stewart suggests that the dominant mode of the human mind is the meaning-making mode, where meaning is individually determined, and identifies coping methods that we appear to use before difficult or incomprehensible logical structures. Elsewhere, she states more directly, “Sense making may be seen as a primary activity of every life, that is, as an activity that is a feature or goal of a wide range of social behaviors” (8). This does not mean that nonsense is not an important category with a vital function. In fact, as Stewart points out, “nonsense rescues common sense by providing a residual category for storing disorder” (6). But, even the very act of separating sense from nonsense is, in the end, a sense-making activity. It seems then, that we generally approach the world—texts included—with a view to trying to understand it, whatever “understanding” constitutes for us on an individual basis. These expectations of relative coherency, then, come into play in reading. It is not that we go into a book expecting it to make sense, but that, given our different training and experience, we have varied notions of what “sense” is in a given textual context. For some readers and in some instances, it makes “sense” that a book presents them with “nonsense,” so to speak. Encountering the slippery language and logical acrobatics of Jacques Derrida may therefore frustrate and discourage a reader who has approached the text with the view that theoretical works ought to put forth arguments sensically and straightforwardly, by virtue of being non-fictional texts. Expectations may change over the course of time and the reading of a work, but they are involved in the reading process at every level, as Culler, Rosenblatt and Stewart insist, each in their own way.

Culler suggests that the works of modern authors such as Lautréamont, Mallarmé, Joyce, Raymond Roussel, Robbe-Grillet and Sollers are “unreadable”—in a favourable sense—for they exist between genres and defy our expectations. They present us with pleasurable puzzles to disentangle, if we wish to engage with them. Theory, too, is able to “resist” our reading. This, in fact, is precisely what irked Sokal, Dutton, and the Cambridge philosophers, though the term


“unreadable” for them would here take on its usual negative connotations. If Derrida, Kristeva, Bhabha, Cixous are “unreadable,” in either sense, it is because they have effectively challenged the perceived limits of their genre, subverting readers’ expectations of transparency and coherency in playfully exposing the malleability of language and logic. These limits necessarily vary according to the audience of a work—academic or otherwise, for instance—and depend on the specific historical and cultural context in which the work is located. They also depend on the cognitive faculties of individual readers, grounded in personal experiences and abilities. Readers, of course, do not approach a text as a blank slate.

Texts that engage in self-referential play present certain linguistic and logical difficulties that can be especially revelatory in terms of studying the reading process, readerly expectations, and affect. Fictional and theoretical texts that formally engage in such play, toying with logic and dabbling in the nonsensical, generally receive very polarized responses from readers. There is thus a great emphasis on the body, as difficulty acts out its role as “cultural gatekeeper.” The word “nonsense” even calls on the body from an etymological point of view: “sense” and “nonsense” are, of course, cognates of the word “sensation.” It is somewhat inappropriate, then, not to study both these meanings—the physical experience, and the (perceived) logical coherency of a text—in tandem.

Fictional and theoretical texts may toy with language in similar fashions, employing some of the same figurative language and rhetorical strategies, to the extent that many critics, such as the contributors to Just Being Difficult?, as we have seen, have said that Theory can be literary. The texts of Derrida, Kristeva, and Cixous, for example, self-reflexively draw attention to the conventions of language, logic, and the medium of print through the use of puns, non-teleological arguments, neologisms, and, quite plainly, unconventional or deliberately difficult prose, much in the same way those of James Joyce, Thomas Pynchon, and Julio Cortázar do, for instance. This play, however, for reasons yet unaccounted for by current models of reader response in literary studies, is often responded to very differently according to its generic context. Naturally, the paratext which announces to readers that the text is either theoretical or fictional comes into play in generating readerly expectations. A cross-generic study, then, may emphasize the need to take the body and emotion into account in reader response theories, and literary criticism in general.
Advances in the cognitive sciences over the past few decades now permit us to analyze the reading process in a way that was unimaginable earlier this century, at the time when scholars were expounding their models of the reading and interpretive process. Formalists such as Victor Shklovsky, for instance, reception and reader response theorists such as Hans-Robert Jauss and Wolfgang Iser, structuralists such as Todorov (who posited that readers “hesitate” between natural and supernatural explanations before strange events, so that the cognitive principle of doubt is involved in the Fantastic), and early poststructuralists such as Roland Barthes and Derrida who drafted notions of the active reader and “jouissance,” did not have the kind of data and cognitive models at their disposal that we have today when addressing the issue of the processing of texts. Although the import of information from the cognitive sciences to literary theory is somewhat unconventional, it is far from irrelevant given that our objects of study are the same: language and text. If we are to make any real attempt at answering, at least in a practical way, some of the questions that have long plagued reader response theorists about the reading process, the cognitive sciences is an opportune place to turn, especially since reading—and particularly the experience of difficulty—is a bodily activity.

When Dutton, Sokal, and the Cambridge group spoke of the unusually difficult prose of some contemporary literary theory, they were invariably dismissive. When Culler and the other contributors to Just Being Difficult addressed the matter, their bias swung to the other direction, and they unapologetically championed the aesthetic. There are few discussions of the topic to date that do not indulge in the kind of value judgments exhibited by either group. It is therefore my aim in the present thesis to offer an account of the reception to the early postmodern aesthetic without engaging in this kind of favouritism, either defending or attacking the style. Instead, I will task myself with analyzing precisely these loaded responses, contextualizing them historically and culturally, while seeing what can be gleaned about the cognitive faculties involved in reading along the way.

This approach demands a fair evaluation of the reception to early postmodern texts both within and outside academia. The responses of the general public—as Diepeveen argues throughout his study—are just as valid as any other. Reader response models to date barely take these into

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account, and when they do, they are invariably critical of the supposed passivity of these readers who apparently do not wish to work through the text to better engage with its puzzles (as were Culler and the other contributors of *Just Being Difficult*). I therefore hope to put forth a useful and practical model for the understanding of reader response that is not only more inclusive but also less biased against the general reading public than those offered in the past.

My overall goal is twofold: to study the response to difficulty in cognitive terms, and to present such an approach as a viable alternative to existing models of reader response, one which addresses the same concerns, but that factors in more than just the formal aspects of the text. Ease of reading—or, “difficulty”—I argue,

i) depends on the formal features of the text and on its reader.

ii) differs from the perspective of one reader to the next, as it depends on individual characteristics (experience, age, educational and cultural background, et cetera).

iii) depends on the material circumstance of reading (lighting, font size, manipulability of the document in print or on the screen, et cetera).

iv) can be measured (via *online* processes [responses during reading] such as eye movements and event-related potentials, and *offline* processes [responses after reading], such as comments made about the reading experience in journals, reviews, and critical analyses, for instance. This point will be further studied in the following section).

v) depends on general cognitive principles (attention, long term and working memory, emotions, et cetera).

vi) depends on expectation of coherency at the local and global levels of the text, which result from a combination of the factors outlined above.

One of the goals of this research is to rethink in a conscious way this interrelation between texts and readers. This study will very specifically attempt to do away with the idea of a singular ideal

64 Barthes’, Iser’s and Schlovsky’s models all critical of passivity in reading, as we will see.
reader, like the one employed by Moss in his analysis of the difficulty of a Joycean text, and instead focus on a more comprehensive audience in literary analysis. Simple tactics like switching the use of the expression *the reader*, in the singular, to *readers*, in the plural, will encourage this approach, as it begs for an awareness of the plurality of readers and multiplicity of possible responses.  

It is not the reader’s *role* that is under the lens, but readers’ *reality*.

3 Difficulty and Reader Response in Literary Studies

As Diepeveen had noted of the modern period, today, too, the study of difficulty lacks a guiding framework. A few contributions have indeed been made, but they are either lacking where an understanding of cognition is concerned, or not tailored specifically to fictional and theoretical prose. Several works on riddles, puzzles, and paradoxes in literature take on, to a certain extent, questions of how the mind behaves before challenging texts. For instance, Susan Stewart’s *Nonsense: Aspects of Intertextuality in Folklore and Literature*, Rosalie Colie’s *Paradoxic Epidemica: the Renaissance Tradition of Paradox*, and Eleanor Cook’s *Enigmas and Riddles in Literature* all look at play and logical trickery in literature while addressing their impact on readers. While their works do not draw on studies in the cognitive sciences proper, they do offer a number of insights into how play is generally received, and proffer hypotheses to try and account for these responses. Cook, for instance, states that “Reactions to riddles and the riddling mode depend not only on current taste, but also on generic and rhetorical assumptions.” Her study, though, focuses primarily on genre and rhetoric in a formal sense, and does not take into account how cognition per se is intertwined into the equation. What is more, Cook’s work, along with the others on puzzles and games, evidences the same favoritism as Culler’s work did when addressing readers’ responses to challenging puzzles in literature: they mostly task themselves with explaining why it is readers experience *pleasure* when they come across challenging

65 It also avoids the often convoluted pronoun constructions he/she, or ‘he or she.’

passages and logical trickery. Boredom and frustration are rarely addressed more than in passing.

Marcel Danesi’s *The Puzzle Instinct: the Meaning of Puzzles in Human Life* and Douglas R. Hofstadter’s *Gödel, Escher, Bach: an Eternal Golden Braid* make more of an effort to understand the human component behind the understanding of logical nonsense and disentangling of puzzles, especially paradoxes. Danesi’s work, as the title indicates, proposes that humans seem to be instinctually drawn to puzzles. Danesi notes that “people simply cannot ignore a challenge, no matter what the costs are in time and energy,” and posits several explanations to account for this (191). He suggests that logical puzzles are “diagrammatic in nature,” so that success in solving them depends on the ability to recognize their syntax and deduce their form via “mental imagery.” Danesi admits, however, that he does not use the word “instinct” in the rigid, evolutionary sense that Darwin envisioned. Instead, he specifies that he means it only in the loose sense commonly adopted in everyday discourse. Therefore, although Danesi’s observations on human behaviour before puzzles are pertinent, his explanations are necessarily conjectural.

Given his training in information systems, cognitive science, and philosophy of mind, Hofstadter is perhaps more equipped than Danesi to answer the kinds of questions—at least where the mind is concerned—that Danesi puts forth. Hofstadter’s focus is on the logical paradox, specifically,

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67 Cook apparently comes to some of the same conclusions as Danesi, and posits, although rather tentatively and only in passing, an instinctual basis to the enjoyment of puzzles. She writes: “Thinking through a trope means thinking in a different way, expanding the brain, enlarging its energies. Thinking through a scheme does the same thing, in a lesser way. Why do people like cryptic-crossword, acrostic and similar puzzles? In these games, we are challenged to make sense of things, to piece them together (‘compose’ in its root sense). Something in us finds the process of riddle-solving satisfying. Perhaps humans are riddle-solving and problem-solving creatures. Perhaps we like fictive or game encounters with riddle and enigma for atavistic reasons. The brain remembers or imagines life-threatening situations; it knows that riddle-solving keeps our wits alert” (246). Cook’s passage shows an interest in the cognitive basis of the apparent human interest in puzzles, but her study lacks the evidence needed to substantiate her claims.

68 Danesi also proposes that what Charles Piece called “logical utens” (‘insight thinking’) and “logical docens” (which must be learned) are necessary for puzzle-solving. Marcel Danesi, *The Puzzle Instinct: the Meaning of Puzzles in Human Life* (Bloomington: Indiana University Press, 2002), 211.

69 Danesi states explicitly, “The thesis espoused in this book is that the appearance of puzzles in human history cannot be easily explained away by some overarching theory of genetic evolution” (35).
on what he calls its “strange loop” structure, where “by moving upwards (or downwards) through the levels of some hierarchical system, we unexpectedly find ourselves right back where we started.”  

Hofstadter takes up not just the formal aspect of the structure and its place in art (Escher), music (Bach), and mathematics (Gödel), but also its processing, by both the human mind and artificial intelligence systems. However, as his focus is quite broad, Hofstadter’s model of understanding is not tailored specifically to literature. That being said, both his work and Danesi’s—equally broad in scope—serve as a useful bridge for thinking about reading within a larger web of semiotic activity.

George Steiner’s 1978 essay “On Difficulty” is the work perhaps most familiar to literary scholars on the topic. Steiner establishes a taxonomy of difficulty that separates difficulties along “contingent,” “modal,” “tactical” and “ontological” lines. “Ontological” difficulties are Steiner’s most abstract classification. He explains that they “confront us with blank questions about the nature of human speech, about the status of significance, about the necessity and purpose of the construct which we have, with more or less rough and ready consensus, come to perceive as a poem” (41). These difficulties seek to “shake off” any expectations the audience may have based on the literary canon, and they generally pertain mostly to poetry after Mallarmé (42). Most problematically, however, Steiner’s model for the study of difficulty, despite its popularity, is too abstract to provide any insights of a pragmatic nature into how the minds of readers behave before technically difficult passages. Although Steiner indeed grasps at the reader’s psychology before difficulty, namely, with his “modal” category, his concern is


71 Hofstadter studies the human mind and information processing in Part II. Chapters XI and XII are specifically devoted to the brain, while the others cover mostly information sciences and artificial intelligence.

72 Contingent difficulties are based on the lexicon while modal difficulties are of an affective nature. As Steiner puts it, “modal: difficulties make the work seem “alien” to us, as we fail to see a justification for its composition. Tactical difficulties lie with the writer, as he or she hopes to convey something of “supreme intensity and genuineness,” yet has at his or her disposal but ordinary language, worn out by clichés (34). Said differently, the poet—as Steiner speaks primarily of poetry in his essay, though his categories can naturally apply to other texts— “may choose to be obscure in order to achieve certain specific stylistic effects”(33). George Steiner, “On Difficulty,” in On Difficulty and Other Essays (Oxford: Oxford University Press, 1978), 18-74.

73 Steiner deals with the author’s psychology, and to a certain extent, with ‘tactical’ difficulties as well.
primarily with taxonomy and—it can be extrapolated—with defining the inherent value—or literariness—of certain works. What is more, Steiner’s categories seem incremental, where the difficulty quotient becomes more and more significant until it reaches a philosophical quality with “ontological” difficulties. It is evident, then, that Steiner, as did Spivak, Culler, and the others, subscribes to the idea that the more difficult a work, the more rewarding. Interestingly (and perhaps even not surprisingly), he even appears to privilege the same type of modernist works as Culler—those written by Mallarmé and later writers—, reserving his most artistically complex and thus apparently deserving category for them.

Wallace Chafe also presents a system of classification for difficulty, in the article “Sources of Difficulty in the Processing of Written Language” (in the collection The Idea of Difficulty in Literature, edited by Alan C. Purves). Though lesser known than Steiner’s, this text offers a viable alternative to Steiner’s system of categorization. Chafe identifies and outlines several causes for difficulty in reading, including problems of language and culture, interruptions in information flow, problems with reference, subjects that express new information, negation, involvement and detachment, paragraphing, and values. His approach, although admittedly less imaginative than Steiner’s, is usefully systematic and pragmatic. Moreover, it appears to sidestep value judgements and assessments of the literariness of a given text. It does not necessarily incorporate what is known about the reading process in the cognitive sciences, but in terms of offering a factual and realistic look at reading, it is an encouraging beginning.

Difficulty and our response before it appear to be topics of interest in a number of disciplines, including literary studies, philosophy, semiotics, and information processing. Because our response to difficulty is so intimately linked with general questions about the human mind and human nature, perhaps this is inevitable. Amid this plethora of approaches, however, what is needed is a model tailored to literary studies for the purpose of the analysis of texts. At present, as I have been insisting, literary studies do not have a model of reader response that adequately treats the topic of difficulty in reading because the bodily nature of the activity is ignored. Diepeveen accounts for it, but his scope is limited to the modern period. Moreover, his study is a historical one, focussed on how difficulty became a “cultural gatekeeper” that defined the era. He does not concentrate on expounding a precise and complete cognitive model to explain the response. A few allusions are made to studies in the cognitive sciences, but many of these are
already outdated.\textsuperscript{74} A model to account for the varied responses to difficulty, then,—especially across generic contexts when linguistic and logical play is comparable—is still lacking.

If a model for understanding the cognitive aspect of difficulty has yet to be presented, it is likely because reader response theories and models of the interpretive process in literary studies today generally do not account for the body either, at least in any practical sense. The models that do consider the physicality of the body and the mind either employ a psychology, medicine, or biology that is already outdated or discredited (such as Aristotle’s catharsis or Freud’s unconscious), or, as is most often the case, treat the reader as a singular, abstract, and ideal entity, much in the same way Moss does in his explication of the relationship between the Joyean text and its readers.

Aristotle’s notion of \textit{catharsis}, drawn from theatre but well-known to scholars of prose, figures little in reader response and reader reception theories of the twentieth century. What is lamentable about this reality is the neglect not so much of the classic model itself, but of its focus on human emotion. Scholars from the Constance school, such as Hans Robert Jauss, and Wolfgang Iser, who studied \textit{Rezeptionästhetik}—the “aesthetics of reception”—, focus on the historical relativity of the reader; the Russian Formalists, such as Boris Eichenbaum, Yuri Tynianov, and Victor Shklovsky, examine the formal features of the text; and, poststructuralists such as Roland Barthes and Jacques Derrida tease out the infinite possibilities of the text rather than concentrate on its actual affective consequences for readers. The emphasis on emotion that is fundamental to \textit{catharsis} is absent from each of these approaches to critical literary analysis.

The term \textit{catharsis} is derived from Greek, meaning “to clean” or to “purify.” Though Aristotle first suggested it in the context of the tragic play, it was J. Bernays who re-popularized the concept in the nineteenth century.\textsuperscript{75} \textit{Catharsis}, in essence, is the restoration of a balanced state


\textsuperscript{75} Jacob Bernays, \textit{Zwei Abhandlungen über die aristotelische Theorie des Dramas} (1857; Berlin, 1880).
after an emotional climax has been reached through the experience of staged drama which brings to the surface emotions such as pity and fear. Many questions, however, surround the term, the ambiguity mostly resulting from the fact that Aristotle uses it only once in the Poetics, in the sentence \textit{di’ eleou kai phobou erainousa tén tón toioutón pathematon katharsin}. Scholars have shifted between interpretations contending \textit{catharsis} means either to “purge” or to “purify” negative emotions from the body.\footnote{Donald Keesey, “On some Recent Interpretations of Catharsis,” Classical World 72 (1978): 193.} Bernays interprets it as meaning “to purge,” as did some of its early interpreters in the sixteenth century, such as A.S. Minturno, one of the first to comment on it, in \textit{De Poeta} in 1559.\footnote{Leon Goldman, “The Purgation Theory of Catharsis,” The Journal of Aesthetics and Art Criticism 31, no. 4 (Summer 1973): 473.} Other debates surrounding the term include whether Aristotle used the expression to designate a genre of tragedy (or a specific kind of tragedy), or—a view that is often held today—whether he simply used it in a colloquial or metaphorical sense.\footnote{Frederick A. Pottle, “Catharsis,” Yale Review, 40 (1951): 621. Francis Sparshott also criticizes the attention that has been given the term: “Neither the amount of scholarly discussion of what Aristotle meant or should have meant or the prominence of the term \textit{katharsis} in our less formal discourse bears any reasonable proportion to the part it plays in Aristotle’s treatise: \textit{katharsis} is invoked once, in a subordinate clause for which nothing prepares us, which is not explained, and which is not referred to in the rest of the \textit{Poetics}. There is something absurd in devoting such reams of exegesis to what has almost the air of a passing comment. But once discussion has started it is hard to end it. It is the very brevity of the remark that tantalizes.” Francis Sparshott, “The Riddle of Katharsis,” in Centre and Labyrinth: Essays in Honour of Northrop Frye, ed. Eleanor Cook (Toronto: University of Toronto Press, 1983), 14.} In either instance, however, the term \textit{catharsis} has distinctly medical connotations. As Aristotle’s father was a physician, it is not surprising that Aristotle would think of using the expression in describing drama. According to Frederick A. Pottle, \textit{catharsis} is a “rather quaint metaphor for the operation of literary works, one that might perhaps occur to a naturalist who was the son of a physician, but hardly to anyone else” (621). Medically speaking, \textit{catharsis} belongs to the Hippocratic tradition, in which good health is thought to result from the proper balance of the four humors: black bile, yellow bile, phlegm and blood. Specifically, catharsis is the expulsion of excessive quantities of the substances.\footnote{Pottle, “Catharsis,” 621.} Therefore, whether Aristotle meant that tragedy actually purges the emotions of pity and fear from the audience, or that it simply restores a healthy emotional balance in the individual, the meaning of \textit{catharsis} is rooted in a
medical materialism that seeks to explain the inner constitution of the body. Aristotle, in essence, created a bridge between the Hippocratic medical tradition of the day and philosophical commentary on theatre. This intimate link between biology and the analysis of art has long been lost on theories of reader response in literary studies, with the result that the physical body has been essentially effaced from the field of research. Of course, I am not proposing that scholars reinstitute the notion of catharsis in the analysis of readerly responses, given its dated, specifically Hippocratic significance, but I would encourage scholars to proceed in the empirical and biological spirit in which it was developed, and to explore what the medicine and new cognitive discoveries of our own day may have to offer.

Robyn R. Warhol, in “Direct Address and the Critics: What’s the Matter with ‘You’?,” charges that several of the most prominent models of the reader in literary studies to date squarely ignore the materialism of the reading circumstance, so that the “you” in texts is not adequately known. Her list is a lengthy one. She writes:

reader-centered critics and structuralists—from Booth to Iser to Genette to Riffaterre—have developed sophisticated ways of talking about the “you” in texts by deflecting any implications that the pronoun might ever be a signifier for real persons. The race of ‘readers’ they have spawned serve as models for the way actual people might read, but in the critical discourse where they are born, they do not represent actual readers. The textual reader may be conceived as an Implied Reader (Booth and Iser), a Model Reader (Eco), an Average Reader/Superreader (Riffaterre), an Informed Reader (Fish), a Competent Reader (Culler), a Strong Reader/Misreader (Bloom), a Perverse Reader (Barthes), a Deconstructive Reader (Derrida), a Feasting Reader (Hartman), a Resisting Reader (Fetterley), a Created Reader (Preston), a Determined Reader (Peterson), or, as Robert Rogers […] calls it, the Amazing Reader. Whatever the term (and whatever its longevity— theorists are nearly as prone to disavowing their ‘readers’ as to creating them), it never stands for the person who holds the book and reads. 80

What Warhol essentially points out is that, although there has been much scholarship on the reader (or “you”) and the reading process, this work generally addresses an abstract kind of

reader, designed with the purpose of better understanding the text itself rather than the physical body reading it. Warhol’s list spans some of the most major currents in literary studies and reader response approaches, including structuralism (Genette, Riffaterre), the Constance School of Rezeptionästhetik (Iser), American approaches to reader response (Fish, Bloom, Booth), and poststructuralist conceptions of the act of reading (Barthes, Derrida). A few more additions could be made to her inventory, such as the Russian Formalist school of thought, with Victor Shklovsky’s conception of defamiliarization. What is interesting to note about many of these contributions to the understanding of readerly response, however, is that, even though they do abstract the reading body and mind, they also evidence a certain intrigue with the possibility of studying the dynamic relationship between the text and readers from a more realist, concrete and sometimes even empirical standpoint, as we will see. There is an interesting game of push-and-pull in the history of reader response theories, with each thinker bringing to the fore what the previous generation of scholars neglected to grant about the reading process—be it the role of automation (Shklovsky), the dynamic interaction between text and reader (Iser), the existence of interpretive communities (Fish), or the pragmatic limits of interpretation (Eco). As abstract as the “you” in each of these theories may be, as a whole, reader response theories to date do provide important pieces in the puzzle of human cognition before texts.

Victor Shklovsky, along with other scholars such as Roman Jakobson, Petr Bogatyrev, Yury Tynyanov and Boris Eikhenbaum, formed the Russian Formalist school which, in Russia, experienced its apex of popularity between 1910 and 1930. Shklovsky believed that the reader experiences a certain “defamiliarization” (ostranenie) before the new and strange elements of a text. In “Art as Technique,” Shklovsky writes that art “make[s] the stone stony”—it de-automatizes the reading process, increasing readers’ length of perception by employing a series of devices that reveal or “lay bare” the technique of the author. At first glance, Shklovsky’s approach is quite valuable for a study of readers’ responses before formally challenging texts, given that it deals directly with attention, focus, and habituation—all cognitive principles. Defamiliarization has even recently been taken up by researchers David S. Miall and Don Kuiken, who have attempted to demonstrate its validity through empirical studies and to identify

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its underlying psychology, tracing the activity in the brain that could account for it. Miall’s article “Anticipation and Feeling in Literary Response: A Neuropsychological Perspective,” published in the journal *Poetics* in 1995, provides the neuropsychology behind the response. But, in keeping with Warhol’s assessment that the “you” has been improperly studied from a realist point of view, Shklovsky does make several significant abstractions in his model. At the heart of the matter is the fact that his interests lay more with the text than with cognition: literariness is his concern, and he defines and defends it from a formalist, not a materialist standpoint. His conviction that literary texts are less transparent than non-literary ones is therefore meant to be understood in terms of form only, and it only incidentally involves the reading subject and the human mind. That being said, even if his psychology of reading was never meant to be reliable from a biological point of view, defamiliarization, as he understands it, does neglect to take several important, non-biological factors into account.

First, Shklovsky ignores that different readers who bring their own experience, knowledge, and levels of comprehension to the text will respond to it differently. What can engage and enchant one reader can inevitably frustrate or even bore another. While the form of a text can encourage a certain response, it will not do so infallibly. Second, Shklovsky also ignores that context in which the defamiliarizing device appears should matter. Fictional and theoretical texts should estrange the reader *differently*, given that defamiliarization is necessarily defined by what is already familiar, expected or automatic to readers. The paratext of a work that announces either “this is theory” or “this is fiction” plays a large role in determining readers’ initial approach to it, and naturally, in shaping their expectations of the transparency of the language therein. Linguistic play, then, is differently received (and differently tolerated, as evidenced by the creation of lists of “bad” academic writers) by readers reading either for pleasure or with a specific practical goal in mind. It is impossible, in my opinion, then, to adopt Shklovsky’s model of “defamiliarization” wholeheartedly in attempting to understand the cognitive processes involved in reading (though Miall and Kuiken aim to do just this), for the relativity of the phenomenon is not taken into account, nor is the actual brain reading studied in any real way.

Another scholar of readerly response that could be added to Warhol’s list of thinkers who have advanced abstract reading models is Hans Robert Jauss. Hans-Georg Gadamer, who was informed by phenomenology, a school of thought that emphasizes the role of the perceiver’s own conscience in determining meaning, and who reasoned that meaning depends on the historical
circumstance of the interpreter, bore a great influence on Jauss. Jauss, a foundational figure in the Constance school of *Rezeptionsästhetik* writing in the 1960s, argues that readers judge texts according to their own “horizons of expectations,” which are historically-determined sets of criteria that inform their position. A reader from the past and one from the present, for instance, will not read the same text in identical ways. For Jauss, present and past interpretation are equally valid, so that these different horizons fuse together to construct a text’s meaning, granting the text a certain timelessness. But because it is impossible to view a text without a certain cultural and historical relativism, the overall or complete meaning of the text is not practically knowable. As Raman Selden and Peter Widdowson put it, “we will never be able to survey the successive horizons which flow from the time of a work down to the present day and then, with an Olympian detachment, to sum up the work’s final value or meaning” (53). What is important to note in Jauss’s reader reception is the acknowledgement of the influence of history and culture on readers, and the fact that readers will inevitably respond to and interpret texts differently. Shklovsky’s formalism would not grant this.

Interestingly, Jauss was interested in the possibility of an empirical approach to reader response to compliment his hermeneutic model. In an interview with Herbert Dieckmann published in the journal *Diacritics* in 1975, when asked what kinds of changes he anticipates in the orientation of hermeneutics, Jauss answers that he envisions future developments that could incorporate “empirical research which uses semiotic as well as hermeneutic methods.” What he has in mind is the study of the “history of esthetic experience,” and he never clarifies how empiricism would figure in the reception model, but the point about the value of empirical study is made nonetheless (61). Despite his apparent interest, Jauss, however, never did develop a reader reception model that incorporated empiricism in such a way.

Wolfgang Iser, who quite correctly, figures on Warhol’s list of thinkers who speak about a “you” reading without referring to real persons, is, along with Jauss, a leading figure of the Constance

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school. Unlike Jauss, however, Iser depersonalizes and dehistoricizes the reader. In his seminal works *The Implied Reader: Patterns of Communication in Prose Fiction from Bunyan to Beckett* and *The Act of Reading*, written and translated into English in the 1970s, Iser conceives of an imaginary, ideal, or “implied” reader who continually bridges “gaps” or “blanks” presented to him by the text. The relationship between the reader and the text is a reciprocal one in that the “virtual” text that is created in the reader’s mind shifts throughout the course of the reading. As Iser puts it, “In the time flow of reading, segments of the various perspectives move into focus and are set off against preceding segments” (24). As the term “implied” reader suggests, Iser’s reader is not meant to be understood as a real, physical being. “[T]he reading subject who emerges […] is not a specific, historically situated individual but a transhistorical mind whose activities are, at least formally, everywhere the same,” Susan R. Suleiman makes clear, insisting that we are “dealing with implied, not actual, readers.” John Paul Riquelme, too, has pointed out that Iser’s implied reader is, by very definition, an abstract entity. He says that, as Iser himself mentions in *The Act of Reading*, “Wirkung, which [Iser] usually translates as ‘response,’ can also be rendered as ‘effect.’ The German word does not carry psychological connotations.” Iser’s focus is necessarily on the role of the reader before the formal elements of the text, not the reality of actual readers.

It appears, though, that Iser may have welcomed, like Jauss, a more empirical approach to the study of the reading process. In an interview arranged by Rudolf E. Kuenzli for *Diacritics* in 1980, one which sought to put the “aesthetics of reception” in dialogue with the reader-oriented theories developed in the United States, Normand Holland, a contributor to the latter, had the

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opportunity to question Iser directly about his vision for the study of reader response. Holland wrote *The Dynamics of Literary Response* in 1968 by drawing heavily on psychoanalytic theory and then turned to experimental psychology and began interesting himself in analyzing the responses of actual readers at the Center for the Psychological Study of the Arts in Buffalo, New York. This later work culminated in the book *5 Readers Reading*, published in 1973. Holland’s materialism clearly informs his questions when he addresses Iser. He asks Iser why, in *The Act of Reading*, Iser never makes reference “to an actual reader actually reading,” even though he says he wishes to conduct “an analysis of what actually happens when one is reading a text” (58). Iser responds that his methodology is influenced by the Continental tradition, but that he has “constructed this model, not for its own sake, but in order to provide a framework which would permit assessment and evaluation of actual reader’s responses to a literary text” (65). It seems, then, that Iser was indeed interested in human psychology and actual, empirical response, only that his training in the Continental tradition did not give him the tools to present a workable model to study it.

What is known is that the cognitive sciences today, rather than completely supplant the theories and reader response models of pioneers such as Iser, Jauss, and Shklovsky, would seem to instead complement the underlying objectives of the scholars. Jauss acknowledged the relativism of the reading circumstance, Shklovsky the ability of a text to play with expectations and jolt readers out of complacency, and Iser, the gradual process of learning (in “filling the gaps”) that takes place when reading. As we will see, none of the cognitive models studied currently necessarily negate these basic premises; instead, they expand on them with empirical experimental evidence, brain imaging techniques, and more technical and anatomically-correct terminology.

Along with Holland, Stanley Fish is another major figure on the American stage for reader-oriented theories. Like Jauss, Fish is sensitive to the historical context in which a work is read. In fact, his notion of the informed reader takes not just the historical context into account, but the whole cultural environment in which an individual reader exists. An informed reader, Fish says,

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is “identified by a matrix of political, cultural, and literary determinants.” This reader is a “competent speaker” of the language in which the text is written, understands in a “mature” manner the culturally-specific configuration of the language he is reading (“lexical sets, collocation probabilities, idioms, professional and other dialects”), and has what Fish calls “literary competence”—a grasp of the literary discourse in question, including an understanding of figurative language, genres, conventions, and the like (48). The critic is tasked with “becoming” the informed reader (several, actually) in his analysis of a text (49). Fish also coins the idea of the “interpretive community” to complement this notion of the informed reader and literary competence (171). The interpretive community is a collection of readers who share learned “interpretive strategies” which enable them to give texts meaning (171). The interpretive communities model explains why it is that meaning sometimes seems stable among different readers, while a text can eventually mean differently to an individual reader. In the former case, readers belong to the same community, and, in the latter, the individual reader has become a member of a different community. Of course, as Warhol rightly points out, Fish’s model—as much as it takes into account the environment in which a reader approaches a text—still abstracts the reading process. Fish willingly concedes: “Who is the reader? Obviously, my reader is a construct, an ideal or idealized reader” (48). Elsewhere, he admits that he himself is, in a way, the reader (“When I talk about the responses of “the reader,” am I not really talking about myself, and making myself into a surrogate for all the millions of readers who are not me at all? Yes and no,” he writes) harking back to Moss’s problematic personalized reader before Joyce’s challenging passages (44). Fish says he takes issue with existing reader response theories because they “ignore” and “devalue” the reader’s activities and that he instead puts these activities at the centre of the interpretive process and endows them with meaning, asking what a text does (158). There is a tension at work, then, in Fish’s commentary on reading between the ideal and the real. On the one hand, cognition is at the fore, and is spoken of in terms of learning, development, and differentiation across individuals, but on the other, this very relativity is self-defeating from a pragmatic point of view, for the reader cannot be understood objectively without the involvement of the critic, seeing as how the critic and the informed reader are essentially inseparable. Perhaps there is a distinction to be made, then, between interpretation—

88 Fish, Is There a Text in this Class? The Authority of Interpretive Communities, 49.
what is generally focused on in literary studies—and the general reading process (what cognitive scientists often simplistically refer to as text comprehension). Fish, like many reader response critics, would be interested in the former, which involves deciding how the critic ought to approach a text and how to determine whether or not—or how—a text is literary, rather than with how it is, factually, that readers process a given text.

This emphasis on interpretation is even more pronounced with the poststructuralists. Warhol mentions Roland Barthes’ “Perverse Reader,” but the poststructuralist’s active/passive reading dichotomy warrants some attention. The idea that the mind before challenging literature is active is today generally accepted in literary studies, even if it is not always attributed to Barthes himself. It goes hand in hand with the idea that difficulty makes the mind work in a way that is rewarding to the one who accepts the challenge, and, as we have seen, this idea is readily adopted by most literary scholars, including those featured in Culler and Lamb’s collection.

Barthes introduces us to the notion of active reading in the late 1970s with the articles “La mort de l’auteur” and “De l’oeuvre au texte,” published in *Le Bruissement de la langue*. Like Shklovsky, Barthes appears more concerned with literariness than cognition, defining what sets apart literary texts from non-literary ones in a similar fashion, though the terminology he employs is of course different. Barthes distinguishes between the “work” and the “text,” defining the former as a consumer product meant to be deciphered (in other words, an easy read), and the latter as an artistic creation from which educated readers may derive pleasure by creatively disentangling or authoring. Active reading is ascribed only to “texts.”

Problematically, Barthes’ model exhibits the same elitism as Shklovsky’s because it favours the latter, and refuses to pay much heed to texts that would fall under the category of “work.” In other words, the academic’s preferences are championed, while the general public’s are largely ignored, dismissed as consumer products unworthy of significant analysis.

What is most problematic for the adoption of Barthes’s model for a materialist study of reader response, however, is the fact that Barthes was never interested in cognition in a material sense; his notion of active reading is entirely formal in nature. Although the notions of “plaisir” and “jouissance” figure in his theoretical framework for the understanding of “texts,” Barthes at the same time makes it quite clear that the reader he envisions is one that is devoid of any human psychology. In “La mort de l’auteur,” he affirms,
le lecteur est l’espace même où s’inscrivent, sans qu’aucune ne se perde, toutes les citations dont est faite une écriture; l’unité d’un texte n’est pas dans son origine, mais dans sa destination, mais cette destination ne peut plus être personnelle: le lecteur est un homme sans histoire, sans biographie, sans psychologie, il est seulement ce quelqu’un qui tient rassemblées dans un même champ toutes les traces dont est constitué l’écrit.  

In “De l’oeuvre au texte,” Barthes describes the reader as “un sujet désoeuvré.” The notion of active reading then, as Barthes understands it, is therefore somewhat elitist in that it ignores the validity of popular works and opinions, necessarily inaccurate biologically, and surprisingly too formal to lend itself easily to the study of the human mind before rhetorically, linguistically, and logically challenging texts, which is what I am investigating here.

Italian semiotician Umberto Eco, in The Limits of Interpretation, argues against the poststructuralist notion of the infinite deferral of meaning. Infinite deferral, an idea originally put forth by Jacques Derrida, works necessarily solely at the level of form, for it concentrates on the possibilities of the text rather than on the cognitive reality and inevitable limits of readers. Eco stresses the latter in his work. He grants that Derrida has a “fascinating penchant for saying things that are nonobviously true,” but argues that, often, in order to underscore these less-than-obvious truths, Derrida “disregards very obvious truths that nobody can reasonably pass over in silence.” For Eco, words do have an identifiable literal meaning, and it is only after this meaning has been acknowledged that the sphere of interpretation may expand to include metaphorical, rhetorical, or coded significations. As the title of the book plainly insists, there are practical limits to the deferral of meaning. For example, though the word fig, in a given context,
may have a larger figurative meaning, “even in this case,” Eco argues, “the addressee should rely on certain preestablished conventional interpretations of fig which are not those foreseen by, say, *apple or cat*” (4-5). Eco contributes a distinctly pragmatic angle to the notion of “différance”: it would seem that signification is not infinite, but indefinite—dependent on context and the thought processes of the person reading. Eco’s take on meaning, though it still inevitably emphasizes the text over the physical reader as it is literature that is at the fore, presents a counter-approach to deconstructionist views on language which more readily agrees with the pragmatic approach to comprehension taken by the cognitive sciences.

Regrettably, many studies that deal specifically with linguistically playful texts—namely, studies of metafiction (such as those by Linda Hutcheon, Patricia Waugh, Mark Currie, Robert Scholes)—directly employ readerly response theories like those of Schklovsky and Barthes that appeal to cognition in but an empty way, which is unfortunate for the understanding of how auto-referential and self-aware texts—fictional or theoretical—may affect readers. At first glance, it may appear that an explication of the variance in response before fictional and theoretical texts that toy with language and logic, highlighting the arbitrariness of the sign and the written word in a self-reflexive fashion, would require a simple widening of the scope of studies on metafiction, to include a commentary on the comparable linguistic play of literary theorists. However, upon closer inspection, it becomes evident that several of their underlying assumptions prevent such an easy manoeuver.

In *Narcissistic Narrative: The Metafictional Paradox*, for example, arguably the most influential study of metafiction, Linda Hutcheon makes generalizations about the reading process that are misleading if taken literally, for they are based the model of reading proposed by Iser, Barthes, and Shklovsky. Hutcheon says that one of the “focuses” of metafiction is “the role of the

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92 From Iser’s *The Implied Reader*, Hutcheon takes the idea that “[r]eading and writing are both active, creative exercises and always have been; it is perhaps merely the degree of self-consciousness regarding their quasi-parallel natures that has increased.” Linda Hutcheon, *Narcissistic Narrative: The Metafictional Paradox* (New York: Methuen, 1984), 37.

93 Hutcheon also borrows the notion of defamiliarization from Shklovsky. She writes, “Another operation is at work in metafictional parody, however, and this the formalists called ‘defamiliarization.’ The laying bare of literary devices in metafiction brings to the reader’s attention those formal elements of which, through over-familiarization, he has becomes unaware” (24). Not only was Shklovsky not interested in the psychology of the reader in any real
reader,” but this is wholly different from the cognitive functioning of the reading mind. The distinction between the role of the reader and the actual reader is easily lost when Hutcheon speaks of the reader (as do Barthes and others) as conscious or aware, a state that depends on the cognitive phenomena of attention and focus. For example, she states that the reader, before the self-referentiality of certain texts, is “forced to acknowledge the artifice, the ‘art,’ of what he is reading” and that “the reader is made aware of the fact that he too, in reading, is actively creating a fictional universe” (6, 36, 28). Formally, this works, but cognitively, it is conjectural. Patricia Waugh, author of *Metafiction: The Theory and Practice of Self-Conscious Fiction*, similarly draws on Barthes and Shklovsky. In speaking about the “aleatory writing” and parody of experimental novels like John Fowles’s *The French Lieutenant’s Woman* and Robert Coover’s *PrickSongs and Descants*, Waugh states that, “the defamiliarization proceeds from an extremely familiar base,” referencing Shklovsky’s formalist understanding of literature, and reasons that the texts of these authors “refus[e] to allow the reader the role of passive consumer or any means of arriving at a ‘total’ interpretation of the text,” alluding to Barthes active/passive dichotomy. Even the problematic elitism against consumerist culture that Barthes evidences is contained in the latter statement. Like Hutcheon, Waugh’s focus is on the *role*, not the reality of the reader, as is evident in the above-mentioned statement, but also in the following: these experimental novels, she says, “remain in the consciousness of a wide readership which is given a far more active role in the construction of the ‘meaning’ of the text” than is offered in more realist novels (13). Although the notion of consciousness is at the fore in this statement and elsewhere, it is but an empty construct not meant to be understood in a completely material sense, for it is underscored by the wholly different and primary focus on the role of the reader, which blunts the differences that exist between the various reading experiences of the same text by different readers. As for Robert Scholes, his analysis of metafiction does not concentrate much on readers

sense, as suggested above, but it is also unclear how metafictional texts may ‘defamiliarize’ differently or similarly to what Shklovsky had in mind, given that his version of the term was meant to apply not only to self-reflexive texts (which did it best), but to all literary texts.

94 The second focus of metafiction is “its linguistic and narrative structures” (6).

at all—neither their role nor their reality—at least in any direct manner.\textsuperscript{96} Instead, Scholes develops a relative typology to categorize some of the metafictional narratives of the day. Certain works comment on particular textual features: for example, John Barth’s \textit{Lost in the Funhouse} deals primarily with the formal aspect of fiction; Robert Coover’s \textit{Pricksongs and Descants}, the structural; Donald Barthelme’s \textit{City Life}, the behavioural; and W. H. Gass’s \textit{In the Heart of the Heart of the Country}, the philosophical. Scholes’s take on metafiction concentrates on its formal aspects and play, rather than on its effect on readers. In general then, although it would seem that studies on metafiction would lend themselves well to a project tackling difficulty in reading across genres, given that difficulty often involves a certain meta-level in some way, their use is in fact quite limited, at least where understanding cognition is concerned.

My intention with this project is to revive the reader—abstracted since long before Barthes declared his supposed birth at the expense of the author—and to highlight both the plurality and the varied nature of a text’s readership, from the generalist audience to the ivory tower academic. The analytical tools and terminology of today’s models for reading in literary studies are centred solely on the text and its formal features (and by extension, the “role” of the reader) rather than on the actual relationship between readers and the formal features of texts. It is practically impossible to discuss how it is that reader process texts that use “defamiliarizing” devices or present “gaps” to fill without falling in to a rhetoric based around the overarching question of whether or not said text is literary. If the ontological status of a work does not interest us—if demonstrating that a given text is or is not literary is not our aim—we should therefore see what other tools are available to us, and to see what can be learned about the reality of the reading process.

4 Reading and the Cognitive Sciences

When a text is difficult, it is not so only for formal reasons (be it obscure terminology or logical trickery) but also for cognitive ones, as it is the reader who is meant to make sense of it. A basic understanding of how the brain works and how it processes knowledge may therefore help to

shed some light on the reading process and how difficult passages and texts may affect readers. Technological advances such as magnetic resonance imaging (MRI) scans, electroencephalography tests (EEGs), and eye tracking technology allow for an unprecedented look into the functioning of the mind as it processes language and written texts. To speak of these studies in the context of literary theories on reading will serve to underscore the bodily nature of the activity, which few literary critics, save Diepeveen, have discussed at length. The body and brain, their actions and their emotions, are indeed knowable. The following outline of major theories, studies, and methodologies in the field of language comprehension in the cognitive sciences sets out to highlight just that. It also forms a foundation for understanding the material on cognitive processes that will be taken up in subsequent chapters.

4.1 Anatomy of the Brain

Classic models for linguistic processing attributed language production and comprehension to Wernicke’s and Broca’s areas, respectively, citing the involvement of the motor cortex as well. Today, researchers are far more aware of the role that the rest of the brain and the body play in language processing. Evelyn C. Ferstl, Jan Neumann, Carsten Bogler and D. Yves von Cramon (2008), for instance, have with neuroimaging studies offered evidence on the full extent to which the brain is implicated in text comprehension—the “Extended Language Network,” as they call it (ELN). When subjects conducted inference and interpretation tasks, the researchers noted activity in the lateral prefrontal cortex, in both right and left anterior temporal lobes, in the middle and posterior temporal lobe, and in the medial wall of the left hemisphere. Dorit Ben Shalom and David Poeppel have also suggested that the temporal lobe is implicated in memorizing (learning new and retrieving stored knowledge), while the parietal lobe is involved in analyzing (accessing subparts of stored information), and the frontal lobe in synthesizing

97 Wernicke’s area is located in the superior temporal lobe, and Broca’s area, in the inferior frontal lobe. The areas are connected by nerve fibres called the arcuate fasciculus.

Importantly, language processing functions are distributed throughout the brain and involve numerous cognitive mechanisms that researchers are working to better understand.

The exact role of the right hemisphere is in language comprehension is still under study. Historically, linguistic processing had been attributed almost exclusively to the left hemisphere, but recent studies suggest that the right hemisphere may be far more involved than it was previously believed. Mark Jung-Beeman has proposed that the brain processes language bilaterally (that is, in both hemispheres), citing a number of studies that report greater right than left hemisphere activity when subjects perform certain high-level language tasks, including “comprehending metaphors, getting jokes, deriving themes, and drawing inferences, generating the best endings to sentences, mentally repairing grammatical errors, detecting story inconsistencies, and determining event sequences.” In what he terms the BAIS model (bilateral activation, integration, and selection), Jung-Beeman posits that coarser semantic activation takes place in the right hemisphere, given that research shows semantic fields to be seemingly more focused in the right hemisphere and more diffuse in the left, so that the left hemisphere is more “sensitive” to literal interpretations and the right, to metaphorical ones (513). Jung-Beeman questions if this could perhaps be explained by differences at the level of microcircuitry, as neurons in the right hemisphere—the cells that transmit information—branch further from the soma (the body) and ultimately connect with more cells on average than in the left hemisphere. Interestingly, Jung-Beeman notes that there is an increase in neural activity in the right anterior temporal lobe when subjects are faced with information that is inconsistent with the global context (for example, a change in character emotion or a violation of temporal order),

99 Dorit Ben Shalom and David Poeppel (2008) present their model as an alternative to Indefrey and Levelt’s (2004), who place lemma (linguistic entries) retrieval and selection in the middle temporal gyrus, phonological code retrieval in the posterior middle and superior temporal gyrus, syllabification in the posterior inferior frontal cortex, and articulation in the inferior precentral and postcentral gyrus. As Sahlom and Poeppel point out, however, Indefrey and Level’s model is based on word production and thus cannot fully account for general language comprehension. Moreover, they point out how the authors exclude almost all parietal regions in their model, probably because they neglected to include studies involving either semantic or phonological decisions in their research. Dorit Ben Shalom and David Poeppel, “Functional Anatomic Models of Language: Assembling the Pieces,” The Neuroscientist 14, no. 1 (2008): 120.

when they mentally repair grammatical errors, and when the title of a text is omitted. The right hemisphere, then, it seems, could play a special role in the comprehension of difficult texts that employ such formal subversions. Other studies, however, question the level of involvement of the right hemisphere in language comprehension and the suggestion that literal and “non-literal” language are qualitatively different and treated separately by each hemisphere (see Coulson and Van Petten, 2007). 101 Coulson and Van Petten note, however, that the right hemisphere nevertheless does appear to play an important role in joke comprehension.102

4.2 Involvement of the Body and Emotion in Cognitive Processing

High-level cognitive processes including reasoning and language processing appear to involve much more of the brain and the nervous system, which extends throughout the body, than once thought. The “sciences of mind and brain,” as Antonio Damasio has noted, until approximately the mid 1990s, when his book _Descartes’s Error: Emotion, Reason, and the Human Brain_ was published, tended to ignore the role of emotion and feelings in the study of reasoning.103 Damasio sums up the oversight—which has ruled the sciences and the humanities for centuries—as “Descartes’ error”: “the abyssal separation between body and mind, between the sizable, dimensioned, mechanically operated, infinitely divisible body stuff, on the one hand, and the unsizable, undimensioned, un-pushpullable, nondivisible mind stuff” (250). Perhaps, then, literary critics cannot be too faulted for ignoring the role of the body and emotion in their study of literature, interpretation, and reader response, seeing as how the sciences has done the same for years. But given all of the new data amassed on the role of emotions and feelings in general high-level cognitive processes, we ought now to revise our models to account for this research.

101 The “literal”/“non-literal” language distinction is essentially that between denotative and figurative language for literary scholars.

102 Coulson and Van Petten hypothesize that “[t]his may reflect the fact that appreciation of a joke requires listeners to suppress previously computed inferences and to exploit non-salient aspects of contextual knowledge that may be more prominent in the right hemisphere.” Seana Coulson and Cyma Van Petten, “A Special Role for the Right Hemisphere in Metaphor Comprehension? ERP Evidence from Hemifield Presentation,” in “Mysteries of Meaning,” special issue, _Brain Research_ 11, no. 46 (May 2007): 142.

It was long believed, Damasio recounts, that reasoning involved only the cerebral cortex, the grey matter that covers the rest of the brain and that is evolutionarily more modern than the subcortical part of the nervous system (27). Damasio explains that it was thought that “the old brain core handles basic biological regulation down in the basement, while up above the neocortex deliberates with wisdom and subtlety. Upstairs in the cortex there is reason and willpower, while downstairs in the subcortex there is emotion and all that weak, fleshy stuff” (128). But the brain is not so cleanly divided, nor are its parts dedicated so strictly to singular functions. Instead, it seems that brain structures below the cortex responsible for basic biological regulation (the hypothalamus, the brain stem, the limbic system) are involved in higher cognitive processes as well. In other words, the part of the brain traditionally attributed to reasoning and judgement does not function independently from the rest of brain and the body.\textsuperscript{104}

Theories of “embodied cognition,” which are gaining ground today, suggest that knowledge is grounded in human experience. Paula M. Niedenthal points out the role of the body in cognitive processing:

the grounding for knowledge—what it refers to—is the original neural state that occurred when the information was initially acquired. If this is true, then using knowledge is a lot like reliving past experience in at least some (and sometimes all) of its sensory, motor, and affective modalities: The brain captures modality-specific states during perception, action, and interoception and then reinstANTIATES parts of the same states to represent knowledge when needed.\textsuperscript{105}

In other words, emotions and feelings, in the form of partial reactivations of states in sensory, motor, and affective systems—whether conscious or not—play a large role in all kinds of high-

\textsuperscript{104} More specifically, Damasio posits that “somatic markers,” which he describes as a “special instance of feelings generated from secondary emotions” felt through the body either consciously or unconsciously, are intimately involved in the process of decision-making (174). He defines the decision-making process thus: “When a negative somatic marker is juxtaposed to a particular future outcome the combination functions as an alarm bell. When a positive somatic marker is juxtaposed instead, it becomes a beacon of incentive” (174). According to Damasio’s hypothesis, we appear to make decisions based on how our body responds to perceived future scenarios it imagines. The whole body—more than just the material brain—is involved in the decision-making process, and emotions and feelings play a large role—much larger than was previously thought or studied—in reasoning.

level cognitive processes, including thought, reasoning, and language processing. Dorothee J. Chwilla, Herman H.J. Kolk, and Constance T.W.M. Vissers have proposed that knowledge—which is based on previous experience—is represented in a large semantic network in long-term memory, and that novel meanings, when they are presented, are understood using what is known about the human body. It seems, then, that the ease with which a sentence is understood, measured by the time that is needed to process it, depends largely on what we know about the “possibilities and limitations” of our bodies.

4.3 “Constructions” as a Guiding Framework

A language processing model based on “constructions” is at the forefront of psycholinguistics today. Early contributors to constructions grammar include Fillmore & Kay, Fillmore, Kay & O’Connor, Lakoff, Brugman, and Lambrecht. Constructions are akin to bits of information

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107 Ease of processing can be measured with the use of EEGs which monitor the N400, to be discussed at length in the following section.

108 Chwilla, Kolk and Vissers conclude that “meaningfulness resides in our knowledge about the possibilities and limitations of the human body” (118). Their use of the words “meaning” and “sensible” are arguably simplistic, but it occurs in the context of distinguishing between sentences such as “They let the canoe into the water and paddled with *Frisbees*” (novel sensible) and “They let the canoe into the water and paddled with *pullovers*” (novel senseless), and “The boys searched for *branches* with which they went drumming and had a lot of fun” and “The boys searched for *bushes* with which they went drumming and had a lot of fun.” The implications of encountering sentences that Chwilla, Kolk and Vissers would deem “senseless” in the context of fiction are not discussed in their study. However, the suggestion that knowledge is grounded in experience and that ease of linguistic processing depends on our perception of the limits of the human body may have great ramifications for the understanding of language comprehension, especially in the context of difficulty. Chwilla, Kolk and Vissers’ models oppose classical Abstract Symbol Theories that argue that “meaning arises from the syntactic combination of abstract, amodal (i.e., nonperceptual) symbols that are arbitrarily related to entities in the real world” (110). In brief, Abstract Symbol Theories believe that “for each word there exists a mental list of essential features” (110). These theories, however, as Chwilla, Kolk and Vissers point out, cannot explain how it is subjects can make sense of novel sensible situations not already stored in long-term memory. Experiments show that subject perform better in processing novel sensible over novel insensible situations.

stored in the mind—specifically, they are linguistic pairings of form and function, including words, morphemes, idioms, and partially or fully filled linguistic patterns, that are stored in long term memory and learned through general cognitive mechanisms. Constructionist interpretations of language comprehension have only recently come about, in the past fifteen to twenty years or so. Prior to their emergence, Noam Chomsky’s belief that that language processing worked according to an innate “universal grammar” dominated psycholinguistics. Today, his generative grammar has mostly ceded to the view that the totality of our linguistic knowledge can be accounted for by the input of constructions. “It’s constructions all the way down,” as Adele E. Goldberg puts it (223). There is no innate mechanism that provides us a template by which we order language. Instead, language is acquired entirely through experience, and the only innate part of the phenomenon is the general cognitive processes that permit learning. Whereas Chomsky deduced that similarities across divergent linguistic traditions were evidence for an innate system of rules that orders language in the mind, constructionist approaches believe that such cross-linguistic generalities result from general cognitive constraints and the functions of the constructions involved. In fact, as Goldberg writes, “What is truly remarkable is the degree to which human languages differ from one another, given that all languages need to express roughly the same types of messages” (222). In essence, both generative and constructionist approaches to language maintain that there is a way for the mind to create novel linguistic structures, but they disagree on whether the means by which this takes place are innate or learned.

4.4 The Role of Working Memory in Language Processing

Working memory is yet another important part of language processing: it is believed to account for the temporary storage and manipulation of information. Alan Baddeley has represented working memory as a three-part model (meant to replace earlier unitary models of short term memory) that comprises two storage systems—the phonological loop and the visuospatial sketchpad—and a central executive that regulates them. He argues that working memory “provides an interface between perception, long term memory, and action.”110 The phonological

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loop, the component most studied to date, has a phonological store with a limited span which holds memory traces before they fade, and an articulatory rehearsal process that is lot like subvocal speech. There has been less evidence amassed on the visuospatial sketchpad, as Baddeley points out, but, like the phonological loop, it seems to have a limited memory capacity, up to perhaps three or four items, and is likely fractioned into separate parts according to research by Logie.\footnote{Logie, as Baddeley summarizes, “distinguishes between a visual storage component, the visual cache, and a more dynamic retrieval and rehearsal process which he terms the inner scribe. He argues that the sketchpad is not a perceptually-based store, but occurs after visual information has been processed in LTM [Long Term Memory]” (834).}

Even less is known about the central executive though it is the most important component of the model. Early models presented it as little more than a homunculus, according to Baddeley\footnote{Baddeley, “Working Memory,” 835.}—a homunculus being a miniature individual charged with operating the metaphorical pulleys and levers of the brain (leaving the functioning of his own mind unaccounted for, except by yet another homunculus, so that a regressive series of homunculi are imagined, and the inner workings of the brain never finally explained). The central executive is responsible for regulating and manipulating the information stored in the phonological loop and the visuospatial sketchpad. It appears to be associated with the frontal lobes, but researchers have found it difficult to identify the specific anatomical locations of executive processes. More research on working memory is needed, Baddeley says, pointing out, for example, that the current model does not properly take into account theories on “chunking” (grouping information together to facilitate recall), nor what drives the executive. Chunking is especially significant for understanding individual differences amongst readers, for working memory capacity tends to be more efficient with expertise, able to process larger chunks of information. For example, in an experiment where expert musicians and non-musicians were tasked with recalling musical note patterns that were presented to them visually, the skilled musicians performed better.\footnote{Later research by Alessandro Guida et al. on chess players of differing skill levels, using functional magnetic resonance imaging (fMRI) and positron emission tomography (PET), corroborates these findings. Guida et al. suggest that improved performance on working memory tasks involves a “cerebral functional reorganization” whereby part of long-term memory is used in working memory. Virpi Kalakoski, “Effect of Skill Level on Recall of}
Researcher Virpi Kalakoski reasons that the construction of representations in working memory is influenced by prior knowledge, which is stored in long-term memory. Where the executive is concerned, on the other hand, “The conative, emotional and motivational control of working memory is crucial, but large ignored,” Baddeley writes, citing Damasio on the role of emotions and feelings on reasoning (837). Baddeley consequently suggests that an “episodic buffer” be added to the model, whereby information is stored by the executive to be bound together to form integrated episodes (835). The information in the episodic buffer would be accessible to conscious awareness. Although, as Baddeley admits, the model may still be refined, for the time being, he is confident it functions well as a rough sketch of how the mind handles information outside of long term memory (837).

4.5 Eye Movements

Much information has been amassed on visual processing in reading. As Reinhold Kliegl, Antje Nuthmann, and Ralf Engbert rightly point out, “Reading is a fairly recent cultural invention. The perceptual, attentional, and oculomotor processes enabling this remarkable and complex human skill had been in place for a long time before the first sentence was read.”

These processes are fairly easy to monitor thanks to eye tracking technologies which record ocular movement, although the cognitive principles that underlie them are always up for debate and models describing them are constantly being refined.

Our eyes move not simply from left to right when they scan the page, but in a series of rapid fixations separated by movements called saccades. Fixations normally last between 150 and 300 milliseconds, and saccades, about 30 milliseconds. Saccades normally jump approximately 6 to 8 letters, and a portion of them are actually regressive saccades (so that our eyes move back in


At least fifty known factors influence the duration of fixations, but three of the most important are the frequency, predictability, and word length.\footnote{Kliegl, Nuthmann and Engbert, “Tracking the Mind during Reading,” 13.}

According to the most recent research, fixations are not a kind of tunnel-vision or spotlight where everything around the fixated word is blotted out.\footnote{Matthew S. Starr and Keith Rayner first suggested this in 2000, and the hypothesis was taken up at length by Kliegl, Nuthmann and Engbert in 2006. Matthew S. Starr and Keith Rayner, “Eye Movements during Reading: Some Current Controversies,” \textit{Trends in Cognitive Sciences} 5, no. 4 (2001): 156-63.} Instead, as Kliegl, Nuthmann, and Engbert have argued, attention in reading is distributed along a gradient. Most of our attention when we fixate a word is focussed in the middle—the foveal area—but some of it spreads outward, too, to what is referred to as the parafoveal area, which can span up to ten characters.\footnote{Kliegl, Nuthmann and Engbert, “Tracking the Mind during Reading,” 14.} It is still unsure exactly how the visual cues in the parafoveal area impact fixation times, but it does seem that they help guide the upcoming saccade, so that the eyes fall on the most optimal place in the following word. John M. Henderson and Fernanda Ferreira have suggested that the amplitude of this gradient is affected by the frequency of the fixated word. With low-frequency words, it seems that attention is far more narrowly focussed, so that less information is received from the surrounding words.\footnote{Kliegl, Nuthmann and Engbert, “Effects of Foveal Processing Difficulty on the Perceptual Span in Reading: Implications for Attention and Eye Movement Control,” \textit{Journal of Experimental Psychology: Learning, Memory, and Cognition} 16 (1990): 417-29} Kliegl, Nuthmann and Engbert also argue that processing is distributed when reading, so that the mind is ahead, with, and behind the eyes. This, they posit, is the default rather than the exception, as it was previously believed.\footnote{Kliegl, Nuthmann and Engbert, “Tracking the Mind during Reading,” 27.}

4.6 Event-Related Potentials: Semantic and Syntactic Integration

One of the most reliable ways of measuring how the brain responds to language is recording event-related brain potentials (ERPs). ERPs reflect electrical activity in the brain, and they are recorded by EEGs, which involves placing electrodes on a person’s scalp and presenting him or her with various stimuli or tasks, such as reading a word, selecting the best ending to a sentence,
or deciding whether or not a visual stimulus begins with a vowel. ERPs are recorded as waves that begin the moment the stimulus is presented. Several waveforms have been detected, such as the N1, P2, N200, N400 and N600, named based on their defining characteristics, such as their “polarity, timing (latency), of the onset or the peak, their duration, and/or distribution across the scalp, that is, at which positions on the scalp a waveform is smallest or largest,” as Edith Kaan outlines in her article surveying the development of ERP technology, “Event-Related Potentials and Language Process: A Brief Overview.” Experiments are repeated and data is collected from numerous subjects until these numbers can be averaged out for a particular event of interest, which yields the ERP.

The N400 component, which peaks between 300 and 500 milliseconds after the stimulus has been presented, is one of the most studied ERPs, as it is thought to reflect semantic integration in language processing. The term “N400” is generally used to refer to the component itself (which every content word elicits), while the term “N400 effect” stands for the difference in N400 amplitude in two events (for example, the presentation of a semantically anomalous word, then a plausible word, to a subject). Kutas and Hillyard first discovered the N400 component in 1980, and their results have been replicated by hundreds of experimenters since then. The cognitive mechanisms underlying the component are still being studied, but it is believed that the N400 reflects the degree of difficulty subjects have with semantically integrating a stimulus into the context they have been presented. For example, as Kaan notes, an N400 effect will be elicited when subjects are presented the sentences “He spread the warm bread with butter” and “He spread the warm bread with socks” (578).

As well as their role in semantic integration, ERPs are also thought to reflect syntactic processing—for example, subject-verb agreement and garden-path sentences. Kaan offers as an example of a garden-path sentence John painted the table and the chair was already finished, taken from Kaan and Tamara A. Swaab’s study “Electrophysiological evidence for serial

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120 The 200, 400 and 600 stand for the number of milliseconds after the stimulus has been presented.

sentence processing: a comparison between non-preferred and ungrammatical continuations.”

According to Kaan, “Initially, the table and the chair is interpreted as the direct object of painted. At was, however, this analysis can no longer be pursued. Instead, the chair must be reanalyzed as the subject of was” (579). The N600, which peaks roughly between 500 and 900 ms has been shown to reflect syntactic difficulty.

ERPs are used in the context of numerous studies to show neurobiological support for a particular hypothesis. Chwilla, Kolk and Vissers, as mentioned above, for instance, refer to N400 effect evidence to support an embodied view of language comprehension, as does Jung-Beeman to uphold his BAIS model. Kliger, Nuthmann and Engbert similarly refer to ERP evidence from ERPs in their eye movement tracking study in order to better explain the lag and successor effects found on fixation durations (the effects of the words prior to and following the word fixated). Evidence from ERPs is found in a host of other studies, and can provide information on how individuals process very specific linguistic features. For instance, Tali Ditman, Phillip J. Holcomb and Gina R. Kuperburg use ERPs to track how the brain processes temporal shifts in written texts (finding that temporal discontinuities lead to immediate neural integration costs); Mante S. Nieuwland and Jos J. A. Van Berkum use them to better understand how the mind behaves before ambiguous anaphoric references (a pronoun and its referent); Rachel Giora cites ERP evidence in her study on negation, which proposes that negative and affirmative statements are processed similarly, except in the case of some metaphors.

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123 Kaan also notes that a P600 component has also been found for violations of musical structure, sequencing and mathematical rules. “This suggests that the P600 occurs when a stimulus is difficult to integrate into the structure of the preceding context, regardless of whether ‘structure’ is syntactic or even linguistic in nature,” she writes (581).

4.7 Summary of Cognitive Principles

To summarize the preceding scientific contributions, we can note that, first, reading involves the eyes, the motor cortex which controls their movements, as well as processes regulating attention. There remains the question, among others, of how much para-foveal processing is actually performed at the oculomotor level. Information is then retrieved from long-term memory and brought into working memory—the phonological loop or the visuospatial sketchpad, regulated by the central executive, which may store its information in an episodic buffer. Long-term memory is probably set up like a large semantic network where items (constructions) are “stored,” and it may or may not be organized differently in the right and left hemispheres. New information not already stored, moreover, may involve the body for processing according to theories of embodied cognition, which would implicate several other parts of the nervous system, including subcortical parts of the brain generally attributed to lower functions.

Far from being deterministic, the methods used by researchers highlight precisely the variance in responses from one reader to another. Dozens, often hundreds, of empirical trials are conducted, and it is only when all of this data is compiled in order to build a general theory about the underlying cognitive mechanisms involved in the event studied that the data is averaged out and made static. In fact, what every ERP quoted, for instance, stands for is a wealth of similar waves collected from different participants in a given experiment. Eye tracking data is similarly averaged out. The experimentation conducted in cognitive sciences, then, reveals the actual relativism and individualism involved in reading, a notion to which current literary studies adheres. Work in the two paradigms is therefore perhaps surprisingly complementary.

Difficulty in reading is in many ways traceable. In experiments, the eyes may linger on a word or move unexpectedly to another location in the text, the subject may not be able to answer a researcher’s question in a reasonable amount of time or perhaps even at all, or EEGs may reveal irregularities in semantic or syntactic processing such as an N400 effect. Difficulty may affect a single reader, or represent a trend across a cross-section of readers. Literary critic Andrew Elfenbein, citing research by Linderholm, Virtue, Tzeng, and van den Broek (1977), notes that several factors are involved in reading: “the reader’s purpose, background knowledge, skill level, alertness, sense of the text’s difficulty, and relation to internal or external
distractions.” 125 Similarly, cognitive researchers Madison M. Berl et al. have examined how reading and listening skills change with age during child development.126 These factors, coupled with the formal features of the text, influence reader response. Reading and difficulty have long been studied in literary studies solely at the formal level. However, cognitive factors such as attention, the closeness of semantic networks in long term memory (which depend on previous experience), the storage capacity of working memory, and the perceived limitation of the body all come into play as well.

In his own historical study on difficulty, literary theorist Andrew Elfenbein, in “Cognitive Science and the History of Reading,” tasks himself with analyzing the response of Robert Browning’s Victorian audience before the inordinate level of difficulty of his poetry from a cognitive point of view. Elfenbein applies models of reading from the cognitive sciences in a close analysis of several written responses to Browning’s work. Drawing from the sciences, he differentiates between “online” and “offline” processes, the first encompassing responses during reading, and the latter, after reading (486). He reasons that while Browning’s readers’ online processes are mostly unavailable to him—marginalia and records of reading times, if they were kept, being the exception—their offline processes may help shed some light on them. He therefore turns his attention to “comments about reading that appear in diary entries, letters and reviews” to find out how readers generally responded to the level of difficulty of the work, both cognitively and affectively (491). Elfenbein’s methodology will serve as a model for this thesis, as I will take up and analyse readers’ “offline” responses to difficult works. Because I am working with a more contemporary audience than Elfenbein, I also have at my disposal the plethora of offline reading responses available on the internet, on webpages, blogs, and in forums. Although these are of course less formal than reviews or articles, they are worth taking into consideration in that they represent a more general reading public, and often undergo much less self-censoring than responses in print.

125 Andrew Elfenbein, “Cognitive Science and the History of Reading,” PMLA 121 (2006): 490; Elfenbein adds, “a reader’s purpose is not simply an individual choice: it is a choice conditioned by the same cultural expectations as any literacy event. It is potentially overdetermined by any number of sociological factors, including race, class, gender, region, religion, profession, and education” (490).

Although Elfenbein dismisses the possibility of studying “online” processes, I wish to bring in data from experimental studies precisely to this end. Often, these studies take up exactly the kind of linguistic and logical games and subversions authors present their readers. For example, Ruth Filik and Hartmut Leuthold (2008) study processing difficulties before anomalous words within a fictional context. Other times, research is conducted on analogous formal presentations. Inferences can then be made as to which cognitive principles may be involved in certain reading difficulties readers have expressed.

Certain myths at the heart of literary studies today ought to be dispelled. For example, the brain is *always* active when reading (as Rosenblatt affirms, but Barthes denies), as the above commentary on the functioning of the brain demonstrates. The dichotomy between an active and a passive reading mind, in fact, which centres around a prejudice against the popular audience (as Diepveen shows through the examination of difficulty as a “cultural gatekeeper”), in fact hinders rather than informs research in the area of reader response, for it denies that frustration, anger and boredom are valid responses worthy of careful analysis. The mind, it should also be stressed, is knowable, and its processes are testable. It is not the “unsizable” mass Damasio reports it was once thought to be, and to think of it as such is to seriously limit the possibilities of further research (250). Cognitive models that are presented on the basis of empirical experiments do not pretend to aspire to some kind of Truth, as some humanists may fear: first, studies readily admit their blindspots; second, models are constantly revised over time (not to mention peer-reviewed by informed scholars); and third, perhaps even more readily than literary theorists, researchers in the cognitive sciences are able to show that language processing capabilities indeed differ from individual to individual, and what these scholars are after are but the general processes that seek to explain the commonalities found.

My goal and challenge in the following chapters will not be to validate the claims of cognitive models seeking to explain the reading process, for there are far more qualified individuals for the task; instead, I will attempt to bridge the gap between literary studies and the cognitive sciences, which, despite having the same object of study—reading—have always adopted paradigmatically opposite approaches. At its most modest, my aim is simply to show the relevance of these studies to our own discipline. At its most ambitious, it will be to sketch out a valid, pragmatic, and useful framework for understanding precisely how it is that difficulty may
affect readers, one which accounts for the polarized responses difficulty elicits, within, but especially across, given genres of texts.

5 Conclusion

The following chapters will study Thomas Pynchon’s *Gravity’s Rainbow*, John Barth’s *Lost in the Funhouse*, Julio Cortázar’s *Rayuela*, and Macedonio Fernández’s *El Museo de la novela de la Eterna*. Each of these works has a notable self-referential focus on the practice of reading, and, most importantly, each formally challenges readers with narrative games and syntactic, semantic, and orthographic irregularities, breaking with the traditional mimetic contract. The works, moreover, were all published around the same time Theory began to spread across North American campuses. As Derrida’s *De la grammatologie* is one of the most important works of Theory—introducing the practice of deconstruction that has irked and enchanted so many—it will be the text I analyse here and use to compare the different responses that fictional and theoretical texts may elicit from their readers.

In order to best contextualize the response to Theory and the rhetoric of the deconstructionist school, I am selecting American and Latin American fictional texts of the same era. In North American literature, this corresponds to the first wave of postmodern authors (Pynchon, Barth, Robert Coover, Kurt Vonnegut, among others), where the term postmodern is indeed used rather consistently by critics. In Latin American literature, the use of term postmodern is far less certain. Some have argued that Latin America is still even today divided among the pre-modern,

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128 Barbara Foley describes the mimetic contract as an understanding that “any given element in a narrative […] must be scanned and interpreted as either factual or fictive in order to be read and understood.” Barbara Foley, *Telling the Truth: The Theory and Practice of Documentary Fiction* (Ithaca: Cornell University Press, 1986), 40.

modern and the postmodern. Nevertheless, I will look primarily to authors publishing in the 1960s, which, in this context, corresponds to the Latin American “boom.” The works of Cortázar and Macedonio Fernández (who is usually referred to by critics as just his first name, Macedonio) are of particular interest because of their deliberate attempts to jar the reading process and their explicit appeal to readers. Their reception in both Latin American and American contexts will be considered, especially because the response to Theory has been both so fierce and so well recorded in the latter. Although Derrida’s early work has been compared to that of the Dadaists by Quine and the other philosophers at Cambridge, as seen above in the letter they sent to discourage his reception of an honorary degree, it is useful to contrast it with postmodern and experimental fictions written around the same time and whose aesthetic it shares.

From a formal standpoint, I will isolate some of the self-referential techniques these fiction authors use—such as play with teleology, repetition, and ambiguous signifiers—in Derrida’s works, both to show where fiction and theory resemble each other, and to better study reader response by honing in on specific difficulties to see how, from a cognitive standpoint, given empirical data amassed on the topic, these formal games may affect response and reception differently across different types of works.

As seen above, by the late 1960s and early 1970s, difficulty was already entrenched as a guiding aesthetic and as a “cultural gatekeeper.” Along with modernist works that were still being studied, scholars took interest in the works of early postmodern authors who catered to this same aesthetic. Equally central to literary studies were works of Theory. Yet, as Brooks reminds us, Theory and fiction were treated differently. While difficulty maintained its role as “cultural gatekeeper” in both cases, it did not spark a “public exegesis” for expository prose, as analysis of

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130 For instance, in “Latin American Identity and Mixed Temporalities; or, How to Be Postmodern and Indian at the Same Time,” Fernando Calderón asks, “Why, in Latin America, do millions of peasants and artisans coexist with factories, computers and electronic equipment of all sorts, and now even a few nuclear power plants? […] why does the revolutionary Gabriel García Márquez write with a hygienic, electronic computer about the magic world of Mauricio Babilona and his yellow butterflies? Maybe because we live in incomplete and mixed times of premodernity, modernity, and postmodernity, each of these linked historically in turn with corresponding cultures that are, or were, epicentres of power.” Fernando Calderón, “Latin American Identity and Mixed Temporalities; or, How to Be Postmodern and Indian at the Same Time,” in The Postmodernism Debate in Latin America, eds. John Beverley, Michael Aronna, and José Oviedo (Durham: Duke University Press, 1995), 55.
form was reserved principally for poetry and novels. Accordingly, with Theory, the focus had been on the pragmatic value of the ideas it presented, rather than on the possible artistry of the presentation itself. Exceptions of course exist—for example, Peter W. Nesselroth’s article “Playing doubles: Derrida’s Writing,” or Seth Warren’s “Derrida’s Style—Beginnings and Endings”—but the focus by and large continues even today to be on the content of Derrida’s works rather than their form. In fact, when commentary is indeed proffered on the style of Theory, it generally arises specifically to condemn its convoluted rhetoric (as with Sokal and the others), or to defend it in the face of these accusations (as does the Culler camp). This study will instead provide a critical formal analysis of De la grammatologie, of the kind usually reserved for works of fiction.

Written responses from both academics and the general reading public will be considered, and published reviews, critical essays, and online commentaries posted on blogs, forums, and customer review message boards (especially at Amazon.com, Goodreads.com and WeRead.com—three of the largest such boards at the time of publication, which feature entries in various languages) will all be taken into account. Although the general and the academic reading publics both inevitably respond emotively to texts, academics generally tend to criticize early postmodern works on more formal grounds, claiming, for instance, that the “nonsense” is not well-crafted, or that the experiment is simply derivative of modern texts—Joyce, or the nouveau roman, for instance. In other words, these academics are positioning themselves as so adept with difficulty, that they can tell “good” difficulty from lacklustre difficulty. For example, Thom Seymour points out that when it was first released in 1968, Barth’s collection Lost in the Funhouse received “generally unfavourable reviews.”131 He explains that many considered some of the pieces in the collection “as mere baubles, toys for and of an exhausted imagination” (189).132 Similarly, as James E. Irby notes, when Cortázar’s Rayuela came out in the United


132 Seymour points out, however, that “this question is largely answered by the book itself” (189).
States in 1966 (translated as *Hopscotch*), its reception was “very mixed.” He singles out John Wain in *The New York Review of Books* who said that *Hopscotch* was a “‘monumentally boring’ derivation of the French New Novel and other such experiments” (64). Nevertheless, even these formal criticisms bear some traces of affect and general material responses, however concealed behind informed and objective-sounding arguments. Wain, for instance, is simply bored with Cortázar’s *Hopscotch*, as he says. The body and the physical activity of reading are generally detectable in all kinds of offline response, including those of academics who sometimes work to conceal this so-called subjectivism.

There appear to be two kinds of difficulty at play in the responses to fiction and theory. First, there are difficulties in understanding the text at its denotative level. These, barring a significant shift in reading abilities in individual readers (for instance, during child development, or in the case of brain damage resulting from an accident or a medical condition), are relatively consistent. For example, in a basic way, the elliptical narrative labyrinth and orthographic peculiarities of *Rayuela* and the semantic complexity of *Gravity’s Rainbow* are no easier to understand today than when the works were first published. The second source of bewilderment involves understanding and contextualizing the role of difficulty. It is like “getting” a Picasso painting. This is where difficulty takes up its role as “cultural gatekeeper,” a role that is of course culturally determined and individually defined. For example, in an article on Barth, critic Robert Con Davis, using Barthes’ writerly text/readerly work dichotomy, points out how the level of difficulty of a text may evolve over time. He writes:

*Moby-Dick, The Sound and the Fury, Gravity’s Rainbow, and Letters* were at first subversive and unclassifiable “fiction,” but each has become, or *is becoming*, a full-fledged Novel. This evolution from fiction to Novel marks, in fact, the degree of a


134 The complex web of specific cultural references in *Gravity’s Rainbow*, however, does show how reading may be facilitated over time or made more difficult depending on one’s store of cultural knowledge.
work’s readability, the major imitations begin at first ‘writable’— in Roland Barthes’ sense—without being entirely ‘readable.’

In other words, whereas at the literal level, difficulty never really cedes, at the greater contextual level, when the full work and its purpose are taken into consideration, difficulty may lessen—upon rereading, speaking with others, using a companion book, or, as Davis points out, letting time pass and perhaps becoming desensitized to the effect of difficulty for better understanding its cultural and aesthetic role.

Naturally, both varieties of difficulty interact with each other. Frustration at the level of textual processing, for instance, may lead to difficulties in understanding the “point” of the work. On the other hand, if readers believe a text is supposed to be difficult at the literal level (for it toys with orthography and syntax, breaks the narrative with irresolvable ellipses, or presents inconsistent character sketches), they may either engage with the text more fully, or, conversely, begin to skim what appears to them most incomprehensible, interpreting the irresolution of difficulty as part of the larger global structure of the work. In this latter case, crucial details to the plot or argument may be missed. As we will see, even careful scholars have missed important details in Pynchon’s Gravity’s Rainbow in their critical analyses.

How these two levels of difficulty work individually and with each other in the context of early postmodernist fictional and theoretical texts is precisely what will be examined in the following chapters. The works under study are experimental fictions that play not just with language but with readers as well. Many of the orthographic, syntactic and other formal games they present in many ways resemble the textoids cognitive psychologists present subjects with in laboratory testing. What literary critics and cognitive psychologists assume about the nature of meaning is of course very different—the latter speak about understanding with the view that we all comprehend what understanding is, while the former have made a scholarly field, an industry, and a living off of teasing out the meaning of meaning—but the subject of inquiry is always the same: language and how it comes to mean. The methods of study in both disciplines are widely different, but as I hope to show in the coming chapters, they complement rather than undo each

other completely. Insights from neither side should be ignored, but instead evaluated through the interpretive lens the other discipline provides, with literary studies offering tools by which to assess what cognitive scientists mean when they use words like “comprehension,” “understanding,” and “meaning,” and cognitive psychology providing checkable evidence that can ground reader response theories in literary studies.
Chapter 2
Playing with Words: Microstructure and Reader Response

1 Overview

The methodology adopted in this chapter involves assessing the critical and popular response to Julio Cortázar’s *Rayuela*, John Barth’s *Lost in the Funhouse*, Thomas Pynchon’s *Gravity’s Rainbow*, and Macedonio Fernández’s *El Museo de la novela de la Eterna*, identifying the areas noted as being difficult, and analyzing these difficulties through the lens of the cognitive sciences. The primary focus is on the way readers actually respond to the texts—both the academic and the generalist audiences, the latter usually not receiving much attention in scholarly analysis. The goal is to contrast this concept of an audience versus “the reader” of traditional reader response analyses. The responses of the members of the general reading public are inevitably not always polished, but they are responses nonetheless, and taking them into account provides us with a more realistic impression of how the work affects readers and the reading process. As Leonard Diepeveen notes, challenging works of art (whether visual or literary) tend to elicit responses that cover all extremes of the spectrum, and so it is my aim here to acknowledge both the positive and the negative reactions (some of the most revealing responses, in fact, are the strong dismissals of the work). Diepeveen’s notion of difficulty as a “cultural gatekeeper” will often be invoked in the analyses of the works.¹

This chapter has two objectives. First it introduces the novels in question, focusing on their general reception from the critical and the popular audiences, and places them within the context of postmodernism, as much of the scholarship that has been generated on them also addresses this matter. The classification is less important, however, than the consequences of the literary innovations and subversions that are implied by it. Discussions of the postmodern aspects of a work are also commentaries on its metafictional structure, and, as I am arguing, it is precisely these elements of the text that contribute to a destabilization of the reading process. The result is

¹ Diepeveen, *The Difficulties of Modernism* (see chap. 1, n. 38).
that readers are either amused by the playful tactics, or put off by the confusion that they can cause, as per Diepeveen’s “cultural gatekeeper” model.

The second objective of this chapter is to analyze in detail the microstructural elements of the words that may affect the flow of reading. These elements relate to orthography, morphology, semantics, syntax and prosody. The authors in question manipulate a number of these elements in a variety of ways, but only a selection of literary innovations have been chosen here for analysis in order to better feature the key cognitive principles that are at work. Some authors, moreover, emphasize one type of play over another, and so provide more apt examples to illustrate certain principal points on the psychology of reading. Julio Cortázar’s Rayuela features revealing examples of how word-level deformations (based on both phonetics and semantics) can affect the way the eyes move on the page, and the difficult vocabulary of Thomas Pynchon’s Gravity’s Rainbow invites a discussion of the neuroanatomy of word acquisition and the semantic integration process. The analysis of his work is also an opportunity to offer a psychological account of why readers differ in their responses to semantically challenging texts. John Barth’s Lost in the Funhouse is particularly important for understanding how syntactical play can affect the reading process, and it also touches on how the manipulation of prosody and anaphoric references can impact readers. Finally, Macedonio’s El Museo de la novela de la Eterna is used to explain how ambiguity resulting from word play can affect the reading process.

This last section leans towards an analysis of the logical processes involved in reading, and many of the concepts addressed here are also pertinent to Chapter 3, which looks at similar processing at the macrostructural level.

2 “Del Lado de Allá”: The Cognitive Effect of Julio Cortázar’s Orthographic Play in Rayuela

Julio Cortázar’s Rayuela has been dubbed by The Time Literary Supplement as “the first great novel of Spanish America.” Published in 1963, the novel is certainly one of the more

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2 Cortázar, Rayuela, 13 (see chap. 1, n. 127).
important contributions to the Latin American “boom,” along with the works of Gabriel García Márquez, Carlos Fuentes and Mario Vargas Llosa. Prior to Rayuela, Cortázar had published the novels Divertimento (1950) and Los Premios (1960), and his works thereafter grew to include 62/modelo para armar (1968), Libro de Manuel (1973) and El examen (published posthumously in 1986). He also published a number of short story collections including Bestiario (1951), Final del juego (1956), and Historias de cronopios y de famas (1962), among others, as well as poetry and other essays. It did not take long for Cortázar’s Rayuela to be translated into English, as well as other languages including French and German. The novel is not only his most celebrated, but also the one he most prefers. When prompted by interviewer Evelyn Picon Garfield in 1973, Cortázar confessed that if he were permitted to take but one of his books onto a deserted island, Rayuela would hold that honour. Yet, despite its critical acclaim, the novel is still relatively unknown to the public outside Latin America. Ciaran Cosgrove remarked in 1995 that Rayuela “is one of the most celebrated, yet, in the English-speaking world, extraordinarily unknown, novels of the last thirty-five years.” A reader in an internet forum devoted to the book also notes the surprising lack of public interest in the work. Attributing its dwindling popularity to a growing general disinterest with the modernist project of decades past, the reviewer writes,

‘Hopscotch’ is one of the greatest books ever written, and also one of the last. Yes, literature, whether of the traditional, naturalistically dumb sort or by modernists like Morelli, ended some years ago. It followed enthusiasts to the grave.

A proof, good sirs? Simply read the reviews here—and there are only 31! On Amazon! For a book such as this!—and you’ll quickly discover just how REMOTE any prospect of even


understanding Cortázar’s and Oliveira’s project has become so far as the younger generation is concerned.\(^6\)

The website includes both the Spanish and the English versions of the novel, and features reviews from around the world, in multiple languages, but the marketplace is of course dominated by English-speaking customers (this particular reviewer is from Sydney, Australia). And so, while it is firmly established in Latin American literary history and the curriculum, *Rayuela* has not necessarily achieved the same level of fame amid the English-speaking audience as the works of other experimental writers, such as James Joyce, to whom Cortázar has often been compared.\(^7\)

Especially because *Rayuela* belongs to its own Latin American tradition, it is difficult to place the work on the modernist/postmodernist continuum in the same way we would the works of North American authors like Thomas Pynchon and John Barth. Nevertheless, a number of critics have indeed attempted to contextualize *Rayuela* within these parameters. For some critics, like *Gravity’s Rainbow* or *Lost in the Funhouse*, *Rayuela* is on the cusp between the two poles, though its exact location is far less certain.\(^8\) Fernando Burgos perhaps summarizes the debate best by identifying *Rayuela* as both an “expresión de un arte de la modernidad” and “un clásico


de la literatura postmoderna hispanoamericana,” with the novel belonging to one of the last phases of hispanoamerican modernity, which featured “neovanguardista” and postmodern forms (217, 215, 207). Zunilda Gertel, too, notes the vanguardista traits of *Rayuela*, especially as they pertain to surrealism. While it may be difficult to classify the exploratory forms of *Rayuela* within the bounds of a modernist/postmodernist debate whose terms and terminology did not originate in Latin America, the work nevertheless arrives at a critical moment in history which provides a good vantage point from which to challenge the old ideas and ideologies of the modernist project, while still being able to borrow some of its innovative forms.

After Ana Barrenechea published one of the first favourable critiques of *Rayuela* in 1964, describing the book as “complejo y rico,” 9 several critics noted in later years how Cortázar’s literary efforts were initially not so well received. For example, Esperanza Figueroa commented in 1966 that *Rayuela* “no ha recibida su merecida recepción entusiasta,” adding, “[l]os libros de Cortázar no parecen ser grandes éxitos de crítica, quizá por ser demasiado avanzados para el gusto estético de las mayorías.” 10 Juan Loveluck similarly said in 1968 that *Rayuela* seems unable to escape the fate that plagues so many great works that are initially not well received nor understood by the public. Loveluck points out that works like *Lazarillo*, *Don Quijote*, *Ulysses* and *Los monederos falsos* all first produced “escándalo en el lector y más de alguna desazón en el crítico.” 11 James E. Irby notes that the reception of *Rayuela*’s translation *Hopscotch* in the United States was also “very mixed,” despite the work winning the National Book Awards for translations a year after it was published. 12 Decades later, this initial lukewarm response was almost entirely forgotten, and what became the focus of attention was instead the impact the book had on Latin American literature. 13 Whatever the public and critical opinion of Cortázar,


12 Irby, “Cortázar’s Hopscotch and Other Games,” 64 (see chap. 1, n. 133).

13 As Novillo-Corvalán puts it in 2008, the focus turned to the “unprecedented stir in the field of Latin American literature” that the work caused. Novillo-Corvalán, “Rereading Cortázar’s Hopscotch through Joyce’s Ulysses,” 59.
what is certain is that much has been written on the author. By 1983, Lucille Kerr counts at least twenty-eight single-author studies and ten collective volumes or special journal issues devoted entirely or partly to him, clearly placing the author and his oeuvre into the literary canon, and establishing what Kerr calls an “industria cortazariana.” The commentary on Cortázar and Rayuela has only continued to grow since then. The difficulty and innovation of his oeuvre, then, seem to have been both its handicap and its virtue, judging by its initial unfavourable response and its eventual acclaim.

The most characteristic aspect of Rayuela is its distinct structural form, with the author offering readers the choice between two separate reading paths, one which follows chapters 1 through 56 and which is organized in a more or less linear fashion, and the other which follows a tablero that intersperses several “expendable” chapters throughout this first reading, pieces that present varying and often remote perspectives on it. The first path is intended for the “lector-hembra,” and the second, for the “lector-cómplice.” Rayuela is the story of a complex and emotionally tortured bohemian character named Horacio Oliveira and his reluctant but eventually unshakeable love for La Maga, a woman whom he sees as an overly simplistic and hopelessly intuitive soul. After the unexpected death of La Maga’s baby Rocamadour and a lewd incident with a clocharde in the streets of Paris that garners Oliveira some unwanted police attention, the protagonist returns to his native Argentina, where he reconnects with his old friend Traveler and Traveler’s wife Talita, as well as his former girlfriend Gekrepten. Oliveira joins Traveler and Talita working for the circus, and the trio then become wardens at a psychiatric clinic when the circus is eventually sold and transformed into an asylum. In the final scene of the shorter of the two versions Cortázar presents of the story—the one without the expendable chapters—Oliveira, who has never forgotten La Maga and who is troubled by the world around him, is perched at the window, contemplating jumping, incidentally, into a hopscotch below. The novel ends there, and the scene is never resolved. It is unclear whether Oliveira jumps, or whether he retreats into


15 The structure of Rayuela will be dealt with at length in Chapter 3.

16 Cortázar, Rayuela, 565, 507 (see chap. 1, n. 127).
the asylum room which he has transformed into a labyrinth of threads to trap Traveler who he mistakenly believed was out to kill him.

The exploratory form of *Rayuela*, along with its dense prose and shifting points of view, naturally poses certain challenges to readers. The text is in many ways the “anti-novel” that its character Morelli proposes in the expendable chapters, and as such, it aims to thwart readers’ possible expectations going into the reading. Accordingly, critic Figueroa writes, “*Rayuela no es una novela fácil,”* 17 and scores of contemporary readers in book forums on the web make comments along the lines that *Rayuela* is dense, confusing, and hard to follow. Some readers confess to having attempted to read the book several times without success, 18 and one particular reader even admits to having spent ten years on the task. 19 Those who persist, however, generally say the ride is worthwhile, even if they did not necessarily understand the work in its entirety. At the other extreme, some readers grow irreconcilably aggravated with the work, and use the forum as a space to vent their frustration. One reader writes, “AAAAAAAHBBBBBBBBBB! I had to read this for a book club. I read about 80 pages of this and threw it across the room. Wish I didn’t. Maybe I could’ve gotten more for it when I traded it in.” 20 Whether this reader did in fact launch the book across the room or not, the physical nature of the response is to be noted. *Rayuela* is a book that demands a strong reaction from readers because of its exploratory linguistic and structural form. One reader sums up the debate nicely: “Where do we draw the line between the novel as an experimental art form and a

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17 Figueroa, “Guía para el Lector de Rayuela,” 261.


functional, enjoyable piece of literature?"  

Clearly, as the critical and generalist reception of *Rayuela* demonstrates, readers respond to the tensions that Cortázar himself identifies in the opening *tablero* of *Rayuela*, where he asks them to follow either a nearly linear path, or a more challenging maze-like journey.

While the form of the fiction and the density of its prose can be irritating to some readers, the story itself seems to win many of them over. This, interestingly enough, is despite Cortázar’s best intentions. In an interview with Picon Garfield, Cortázar says that the “happenings” in the story—the “long episode[s] that [have] a certain unity”—are moments where he failed his overall project, and are the sections he likes the least. The author explains,

> *Rayuela* was purposely designed to destroy the notion of the hypnotic story. I wanted a reader to be free, as free as possible. Morelli says it all the time, that the reader has to be an accomplice and not a passive reader (‘lector hembra’). In those chapters I allowed myself to be carried away a little by the drama, by the narration; I betrayed myself. I realized later on that the readers had become hypnotized by the intensity of those episodes. I would prefer those chapters didn’t exist in that way. My idea was to make the action progress and to stop it exactly at the moment in which the reader would be trapped, in order to then give him a kick so as to make him return objectively to view the book from the outside, from another dimension. That was the plan. Evidently I was not totally successful.

It is true, many readers do seem to respond to these relatively coherent anecdotes, and to the power of the story itself. For example, critic Fernando Alegría writes that the “podridísimo romance” of Horacio and La Maga moves him, and that he is above all interested in the book which, “planteando la condición humana de Horacio y su gente, responde con claridad mortal y honestidad suicida a las preguntas básicas de la acual generación en rebeldía contra el *establecimiento* burgués y sus podridas fórmulas y normas sociales.”

Similarly, the generalist

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22 Cortázar, interview by Evelyn Picon Garfield, n.p. (see chap. 2, n. 4).

audience often finds itself emotionally engaged with the storyline, and taken with the beauty of its telling. One reader writes, “Aunque por momentos su lectura se hace tediosa, la novela y sus personajes son mágicos e infunden una halo de irrealidad del que es imposible escapar.”

Another reader stresses the physical sensation of being breathless before Cortázar’s prose: “Este libro me deja sin aliento. Nunca, pero NUNCA he leído nada de semejante belleza.” Yet another notes the ability of certain passages to utterly captivate the audience: “At times [Rayuela] feels impenetrable, then drops the reader into the centre of such a human moment that the seeming impenetrability is replaced by an intense feeling that we are all tied together by the same great wound.” Many readers find themselves moved by the book not because of its exploratory literary innovations, but despite them. It is through these human episodes that they become engaged in the work, enough to take the time and effort to comment on it in a virtual public space, recommending Rayuela to other readers they do not know so that these individuals may share in what the amateur reviewers deem an unforgettable and moving experience.

As for the critical response to the work, early commentators on Rayuela were especially taken with Cortázar’s structural innovations—primarily with the tablero, but also with other formal games, such as the overlapping of two separate storylines (chapter 34), the creation of a phonetic script (chapter 69), the invention of the language glíglico (Chapter 68), and the insertion of an “h” to certain words throughout the novel. By the late 1970s and early 1980s, critics were


eager to show the work within a larger literary tradition, and to reveal how its exploratory forms are in fact not so unique—a retrospective look that never set out to diminish Cortázar’s contribution to literature, but to contextualize it. Eventually, moving past the novelty of Cortázar’s literary games, critics looked at some of the larger themes in the novel. Increasingly, Rayuela was understood through the critical lens of deconstruction, perhaps demonstrating Derrida’s influence on academia more than any inherent poststructuralist thrust in the novel’s own project. Nevertheless, this more contemporary approach did highlight the anti-logocentric vein of the novel. Later still, the advent of the internet moved the discussion of Rayuela in a new direction, and it was the hypertextual form of the novel that became the centre of attention. The dialogue eventually culminated in the introduction of a number of online version of Rayuela that allows readers to click rather than flip from chapter to chapter.

Throughout the years, Rayuela has been read through the lens of a number of reader response theories, including those of Wolfgang Iser, Victor Shklovsky, Hans-Georg Gadamer, and


Roland Barthes. The cognitive dimensions of the novel, however—at least where a scientific framework is concerned—have yet to be explored. The sciences of the mind can offer an interesting new perspective on the challenging games contained within *Rayuela*. Contained in both reading paths—the supposedly linear one and the one which contains the expendable chapters—are unconventional passages and play at the microstructural level that can offset the normal pace of reading for readers, whether they fancy themselves “lectores hembras” or “lectores cómplices.” Dense prose, esoteric references, and orthographic play all contribute to a certain destabilizing effect throughout the fiction. Barrenechea notes that among the elements that can “molestar” (disturb) readers are

la interpolación de textos extraños a la historia narrada (citas de otros autores, comentarios literarios o existenciales de Morelli, escenas de difícil localización), […] juegos con el lenguaje (letras intercaladas, capítulos compuestos como las cartas rusas o escritas en gígico [sic], párrafos con palabras seriadas del diccionario, llamado “el cementerio”, preguntas-balanzas).

Ostria González writes that these literary games “deben entenderse como intentos por descentrar al lector,” and Luis Harss and Barbara Dohmann points out that they are part of Cortázar’s

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34 Dennis L. Seager, “*Rayuela*: The Hypothesis of Antiteleology.”


37 Barrenechea, “‘Rayuela’, una búsqueda a partir de cero,” 71.

attempt to devise a “counterlanguage.” This alienating and de-centering effect mostly results from the fact that the narrative—even when it is not given in the first person point of view—is born out of Oliveira’s imagination. Brody notes that the entire fiction essentially consists of the semi-contained interior monologue (or stream-of-consciousness) of the protagonist, with the effect that “the sentence structure is somewhat jumbled and disjointed, thoughts are interrupted, punctuation is irregular” (51). The prose of Rayuela, then, as a quick survey of these critics’ commentaries shows, can present itself as somewhat jarring to readers, whether or not they are taken with parts of the storyline or the apparent beauty of its construction.

Over the past decade, the cognitive sciences have made tremendous progress in better understanding how the eyes move on the page when reading. Importantly, by toying with the conventions of language the way he does in Rayuela, Cortázar is in effect reorganizing the very visual cues that influence the way in which readers’ eyes move along the text. It should be remembered that eye movements are an important part of existing reader response theories in literary theory, and so these new studies are certainly noteworthy. Writing in the 1920s, Shklovsky suggested that defamiliarization results from a set of literary devices that “increase the difficulty and length of perception.” Today, the nature of these perceptions is understood in quite some detail, as are their underlying cognitive explanation and neurological effects. Orthographic decoding generally takes place at around 200 ms, and it is only after 240 ms that semantic priming begins. Top-down processes of attention can impact these initial stages of


42 Clara D. Martina and Guillaume Thierry also note that orthographic priming can take place at any time between 190 ms and 460 ms after a stimulus is presented. Clara D. Martina and Guillaume Thierry, “Interplay of Orthography and Semantics in Reading: An Event-Related Potential Study,” NeuroReport 19, no. 15 (October 2008): 1501-05; Alice M. Proverbio and Roberta Adorni say that research suggests lexical and orthographic processing can occur simultaneously. Alice M. Proverbio and Roberta Adorni, “Orthographic Familiarity, Phonological Legality and Number of Orthographic Neighbours Affect the Onset of ERP Lexical Effects,” Behavioral and Brain Functions 4, no. 27 (2008): n.p.
word processing according to task goals, meaning that readers can direct their selective attention to concentrate more fully on the linguistic attributes of the words they encounter in a text.\textsuperscript{43} Orthographic information also influences where the eyes land on the page—this, before the lexical component of a word is even processed.\textsuperscript{44} The detailed information on perceptions that is available today is substantial, and provides a new lens through which to view the reading process and to frame the conversation about how experimental fictions like \textit{Rayuela} work and impact readers.

Chapter 69 is written in an invented writing system called Ispamerikano, which is based on Spanish phonetics. The silent “h”s are eliminated, the hard “c”s are converted to “k”s, the soft ones to “s”s, the “v”s turn into “b”s, and so on. The chapter begins with a passage that features all of these subversions:

\begin{quote}
Ingrata sorpresa fue leer en `Ortográfi\'ko’ la notisia de aber fayesido en San Luis Potosí el 1º de marso último, el teniente koronel (asendido a koronel para retirarlo del serbisio), Adolfo Abila Sanhes. Sorpresa fue porke no teníamos notisia de ke se ayara en kama. Por lo demás, ya ase tiempo lo teníamos katalogado entre nuestros amigos los suisidas, i en una okasión se refirió ‘Renovigo’ a siertos síntomas en él obserbados. (479)
\end{quote}

In addition to introducing Cortázar’s invented writing system, this particular passage also makes an ironic mention of a news magazine called “Ortográfi\'ko”—the Spanish spelling of which would normally be “Ortográfico” (orthographic)—further highlighting the linguistic play. The phonetic writing system used in this chapter, however, does not facilitate reading in any way. Instead, precisely for defying the conventions of traditional script, Ispamerikano places unusual demands on readers, thereby slowing the pace of reading. As is well understood in the cognitive sciences today, the length, predictability, and frequency of words impact the amount of time that they are fixated by the eyes.\textsuperscript{45} With Ispamerikano, Cortázar appears to be playing with word

\textsuperscript{43} Ruz and Nobre, “Attention Modulates Initial Stages of Visual Word Processing,” 1727.


\textsuperscript{45} These variables and their effects are covered in more detail in Chapter 1.
frequency. In essence, the less conventional a word, the more time our eyes spend on it. By rearranging the spelling of Spanish words, Cortázar is in effect changing their recognizability, transforming high-frequency words to low-frequency ones, and affecting reading times.

To better comprehend the effect of Cortázar’s game, it is necessary to understand the nature of attention from a cognitive point of view. Attention, when a word is fixated on the page, is distributed along a gradient. It is mostly focussed in the middle—the foveal area—but some of it spreads outward, too, to the parafoveal area. Visual cues in the parafoveal seem to help guide the upcoming saccade, so that the eyes fall on the most optimal place in the following word. Keith Rayner has shown that word frequency affects word processing in sentences, with less frequent words being fixated or gazed at longer than infrequent words.\textsuperscript{46} John M. Henderson and Fernanda Ferreira have also suggested that the amplitude of the attentional gradient is affected by the frequency of the fixated word.\textsuperscript{47} With low-frequency words, it seems that attention is far more narrowly-focussed, so that less information is received from the surrounding words. What this means for Ispamerikano, then, is that, not only do the eyes fixate the unconventionally-spelled words longer, but the attention that is paid to them is also—quite literally—more focussed. Ispamerikano is not easier to read despite its phonetic basis precisely because it ignores the fact that the reading process depends quite heavily on convention and automation, especially at the level of visual information. Frank Smith explains:

because spelling is systematic and reflects something of the history of words, much more information is available to the reader than we normally realize [. . .] The fact that we are not aware that this information is available does not mean that we do not use it.\textsuperscript{48}


\textsuperscript{47} Henderson and Ferreira, “Effects of Foveal Processing Difficulty on the Perceptual Span in Reading: Implications for Attention and Eye Movement Control,” 417-29 (see chap. 1, n. 118).

With his phonetic writing system, then, Cortázar both obscures this information, and draws attention to its importance, increasing the length of perception while calling attention to the language itself.

Cortázar’s orthographic games in Chapter 69, moreover, have a very real impact at the neuroanatomical level. Interestingly, Martin Kronbichler et al. have found through a functional magnetic resonance imaging (FRMI) study that “letter-deviant” forms based on phonology, such as taksi for taxi—much like the forms created by Cortázar—generate more neurological activity than normal in the left-occipito-temporal region that corresponds to the visual word form area. The researchers posit that a “visual input lexicon” exists in this particular area of the cortex that gives readers direct access to phonological and semantic information through orthographic representations. The occipito-temporal regions are the same that allow for face and object recognition, as Kronbichler et al. note. In manipulating the recognizability of words in Chapter 69, then, Cortázar necessarily increases the level of activity in the part of the brain associated with recognition, and thereby affects the length of time taken by readers to focus on a word. Although the spellings are more phonetically accurate, the ease with which the passage is read, rather than increase, drops off markedly.

Whereas in Chapter 69, Cortázar deletes “h”s to create a phonetic writing system, in a second linguistic game, elsewhere in the novel, he sometimes adds an initial “h” to words that begin with a vowel. The genesis of this deformation is revealed in chapter 90, when Cortázar clarifies that his protagonist Oliveira often likes to indulge in this kind of play in his own writing, especially when he is agitated. A few examples of his creations are given within quotation marks, but the play extends beyond these, and Cortázar’s own text is peppered with free-floating “h”s, inserted seemingly haphazardly in this chapter and elsewhere in the novel. The following excerpt offers three such conversions: “[. . .] Hojo, Horacio,’ hanotó Holiveira,” with a superfluous “h” input before the words “Ojo,” “anotó,” and “Oliveira” (269). This is a game that

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both Cortázar and his protagonist are playing. What can be disconcerting for readers, however, is that this game is not explained until the ninetieth chapter (one that the “lector hembra” may never even get to). The handful of additional “h”s until this point, then, may appear somewhat mysterious upon first reading, especially since they are often introduced into otherwise relatively straightforward sentences and chapters. In the English translation, Gregory Rabassa translates the “h” with a “wh” where possible. However, two fragments are especially difficult to translate using this paradigm: “algo hincalificablemente hasombroso” becomes “something that defies descrumpion,” and “¿me hapasiona, dije? becomes “did I say phasinate?” with a “ph” instead of an “f.”

This difficulty in translation demonstrates the unusual emphasis on form rather than on content in Cortázar’s Spanish prose, as is the case in poetry. Naturally, the transformation would elicit activity in the left occipito-temporal cortex, as would the orthographic deviations of Chapter 69. Even more can be said, however, about the specific positioning of the additional silent letter.

Certain word deformations are more problematic than others for readers. In the case of the additional “h,” readers may be able to recognize the words with little difficulty by mentally eliminating the extra letter (or by repeating the word subvocally since the “h” is not pronounced in any event), but the pace of reading still necessarily slows. As experiments reveal, the beginning of words are the most important part in their identification. For example, Constance Weaver presented groups of readers with three paragraphs. The first omitted the beginning of words, the second, the middle of words, and the third, the end of words. What she found is that readers on average took most time in reading the paragraph where the beginnings of words had been omitted. The onset of words, it seems, are the most crucial in word recognition. Weaver has advanced three hypotheses as to why this is so: first, the beginnings are preceded by a blank space that draws the reader’s attention; second, with Spanish and with English, we are used to reading more or less from left to right; and third, the endings of words are more predictable than the beginnings because they usually consist of grammatical information already made clear by the context. That Cortázar places the extra “h” at the beginning of the words, then, affects


readers more than if he had inserted it at the end or in the middle. The initial “h” slows reading times, encouraging readers to contemplate the form of the words for a greater length of time. In essence, putting the “h” at the beginning was a very effective way of attracting and holding readers’ attention.

Cortázar expands on his linguistic games in Rayuela even further with the invention of a language he calls glíglico. The entirety of Chapter 68 is written in this made-up idiom, whose semantic subversions naturally affect the normal flow of reading. The chapter begins: “Apenas él le amalaba el noema, a ella se le agolpaba el clémiso y caían en hidromurias,” and goes on like this, introducing an invented—but pronounceable—expression every few words (478). Here, “amalaba,” “noema, “clémiso,” and “hidromurias” are products of Cortázar’s imagination that nevertheless follow the conventions of Spanish spelling. For example, they are easily pronounceable, without any consonant clusters foreign to the Spanish language, and they even adopt the accenting system of Spanish which indicates where words ought to be stressed when spoken (e.g., “clémiso”). Philip H. K. Seymour studied readers’ response times for invented non-words, comparing pronounceable expressions to expressions without vowels; in his terminology, he compared legal non-words to illegal non-words. Surprisingly, he found that pronounceable non-words take more time to read than unpronounceable ones. Generally speaking, we are slower at reading pronounceable non-words than actual words we know because we do not recognize them as wholes. We divide them into smaller segments in order to process them (into groups of syllables, vowels, and consonants), as we do when we read aloud. However, illegal non-words, those without vowels, when presented in a normal left-to-right configuration, apparently do not slow the pace of reading in any way. Seymour put forth a legality test hypothesis to explain this finding. According to his research, when we read, we first test to see whether words are orthographically-sound or not. If a word is illegal, then we do not bother to attempt to understand it. We skip what he calls the normalization step, in the interest of efficiency. Although Seymour put forth this legality hypothesis back in 1987, the concept has indeed been supported by later research. In a recent study, for instance, Alice M. Proverbio and

Roberta Adorni show that the phonological legality of a word is indeed one of the factors that contribute to the speed of its processing and the latency of its semantic integration, along with other factors, like the number of orthographic neighbours a word has.\(^{53}\) They note, too, that while the left occipito-temporal area of the brain is associated with the visual familiarity of a word—just as Kronbichler et al. had found—the temporo-parietal area is more sensitive to phonological legality, distinguishing between legal and non-legal word strings at 250 ms.

Chapter 68, then, slows readers’ reading speed and heightens their attention precisely because the non-words it presents are pronounceable. Interestingly, if Cortázar had tinkered with the Spanish language any more and omitted the vowels in his invented words (creating consonant clusters illegal to the Spanish tongue), he would not have been as successful in extending the length of perception of his readers. We can perhaps compare this creation of non-words in Chapter 68 to that in Italo Calvino’s novels *T-Zero* and *Cosmicomics*,\(^{54}\) where Calvino names his narrator an unpronounceable “Qfwfq.” Perhaps it is normal to expect readers, after encountering the word several times, to spend less time deciphering it (that is to say, to “refamiliarize” or lexicalize it). However, according to the cognitive research discussed above, readers would spend no more time than average on it even when they encounter it for the first time. Though the word indeed subverts linguistic conventions, it does not increase the length of time that it is fixated. This is in stark contrast to Cortázar’s invented but pronounceable words, which encourage readers to spend more time on them.

In translating Chapter 68 into English, Gregory Rabassa attempts to keep the phonetic quality of Cortázar’s inventions intact. In an interview, Rabassa explains his methodology:

> It’s hard enough to figure out what to do with language other than the author’s or the translator’s but what does one do with an invented one? Cortázar has one such tongue in *Hopscotch*. It’s a language of love in that it describes amorous activity. It really isn’t necessary to understand the words. The way they’re strung

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together tells us what’s going on. Their sound is suggestively helpful too [. . .] A simple reading aloud renders a feeling of what he is saying.55

What Rabassa does in the English translation is maintain the general morphology of glíglico while anglicizing its sounds and orthography. For example, “noema” becomes “noeme,” “hidromurias” becomes “hydromuries,” “relamar” becomes “relamate,” “ergomanina” becomes “ergomanine” and so on (Cortázar 478, Rabassa 373). Vera Blau et al. have shown that there exists “a strong and automatic functional coupling between processing of letters (orthography) and speech (phonology) in the literate adult brain.”56 Rabassa is correct, then, in assuming that the sound of the letters Cortázar used in his invented words matters in the reading process, even if readers do not read the text aloud, as he suggests they do.57 What is just as, if not more important, however, is the morphology of the terms. Morphology, as William D. Marslen-Wilson, Mirjana Bozic and Billi Randall have shown, is one of the first elements that is processed, with morphological information driving an early segmentation process in word processing.58 Rabassa has translated the text in such a way that readers of the Spanish version and the English version would— at least at some elementary levels— process the words on the page in a comparable fashion, for he has maintained the morphological structure of the original text. For example, “tordulABA” becomes “tordLED,” thus maintaining the morphological information of the past tense; “niolamaS” becomes “niolameS,” maintaining the information for the plural form; and “se iban apeltronANDO, reduplimIENDO” becomes “were becomING petronated, redoblated,” maintaining the information for the gerund, through moving the “-ando/-


iendo” suffix from the transitive Spanish verbs to the English intransitive verb “become” (Cortázar 478, Rabassa 373).

With orthography and morphology generally intact in this chapter, the difficulty of the invented terms arises later in word processing, at the semantic integration phase. An analysis of two distinct translations will highlight the variability that can arise in the interpretation of the terms among different readers. Rabassa translates Cortázar’s “entreplumaban,” “marioplumas,” and “jadehollante embocapluvia” as “cofeathered,” “mariplumes,” and “slobberdigging raimouth,” respectively (Cortázar 478, Rabassa 373). It is worth noting his different interpretation of the stem “pluma,” found both in “entreplumaban” (here as part of a past tense verb in the third person plural) and “marioplumas” (a plural noun). “Pluma” in Spanish indeed means feather, but also pen—from fountain pen, which is made with a feather. There is perhaps a metafictional element to this construction (the idea of writing), then, that is somewhat lost in Rabassa’s translation. Interestingly, Rabassa does maintain the second occurrence of “pluma” in the text in “mariplumes”; however, the English “plume,” though it has the added connotation of a body of fluid moving upward (as in a “plume of smoke”), as well as the idea of a feather, still does not carry the idea of a writing tool like the Spanish. In contrast, French translators Laure Guille-Bataillon and Françoise Rosset are able to keep both the “feather” and “pen” connotations of “marioplumas” in the construction “mariplumes.”

The word is of course identical to the English translation, but for a French-speaking audience, both meanings would be more strongly connoted. The variation in translations of the word “jadehollante” is especially striking. It could be argued that the term is derived from the words “jadante,” meaning “panting” or “breathless,” and perhaps “hollejo,” for “skin,” which fits into the amorous context of the passage. While the French maintains the sense of breathlessness in the construction “halesoufflant” with a combination of what is presumably “haleine” (breath) and “soufflant” (breathing), and even doubles it at the expense of the connotation of skin, the English “slobberdigging” keeps the corporeal nature of the term while changing its textual quality altogether—from airy to wet.

Both translators identify the basic morphology of the original term, recognizing that it is composed of two terms and set as a gerund, but where they differ is in the interpretation—at the

semantic level. While the translations document offline rather than online processes, it is important to note what information is relatively consistent to readers and what may vary. In Chapter 69, the difficulty of the text lay with orthography, whereas here, it lies with semantics. The difficulty of Chapter 68 occurs 400 ms into word processing, then, while it takes place at around 200 ms in Chapter 69, at least where eye movements are concerned. It should be noted, though, that as the game is played out throughout each chapter, the nature of reading must surely change. Readers would begin to understand the rules of Cortázar’s play (or not), and, as Diepeveen’s “cultural gatekeeper” model suggests, respond with delight, frustration, or boredom, depending on a number of factors beyond just the mechanics of word processing.

A. Carlos Isasi Angulo has said that writing all of the pages of *Rayuela* in the same tone as the *glígligo* of Chapter 68 would have been impossible. “Porque el escritor no puede escoger su estilo en una especie de arsenal intemporal de formas literarias,” forms not understood by the audience, Angulo explains. 60 Cortázar’s remarks in his interview with Picon Garfield about not wanting readers to become overly hypnotized by the story itself, to the extent that the passages which capture them most are the ones the author least prefers, suggest that he may have actually wished on some level to write a novel so innovative that it left its readers baffled and puzzled by its form for the entire length of the reading, whether the method employed resembled *glígligo* or not. In the end, it seems Cortázar’s *Rayuela* has been successful as a literary work precisely because it has been able to strike a balance between difficult wordplay and readable prose.

Through his various linguistic games, Cortázar is able to affect the flow of reading and encourage his readers to spend more time on the words themselves (to lengthen their perception of them), whether it is because of orthographic, morphological, or semantic subversions. The variety of his play also displays the different ways in which the length of perception—the principal element of Shklovsky’s concept of defamiliarization—can be affected. Word processing consists of a series of stages whereby the mind processes orthography, morphology, and semantics, among other information, and toying with language in different ways will have various consequences for these automatic processes. Cortázar’s games are particularly effective in destabilizing the reading process not only because they are varied and multiple, but also

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60 Angulo, “Función de las innovaciones estilísticas en *Rayuela*,” 591 (see chap. 2, n. 28).
because they are part of a larger, more coherent narrative structure that can draw in readers and capture their attention. The more attentive readers are to the text before them, the more likely they are to be affected by the subversions of form that lie therein. It is this balance, moreover, that appears to have garnered the book a generally favourable response among critics and the general public—despite its initial lukewarm reception and the indignation of a handful of online reviewers—and that has thus secured it a place in the Latin American literary canon.

3  “[N]obody in earshot even knows what the word means”: Semantic Play in Thomas Pynchon’s *Gravity’s Rainbow*

Relatively little is known about Thomas Pynchon. A famed recluse, Pynchon appears to have created a public personae that suits his literary production. Just as his works encourage readers to make connections for themselves before the plethora of esoteric data and fragmented narratives he provides them, the author also challenges his audience to construct its own vision of him, as his true identity remains veiled. While Pynchon has offered the public eight novels and several short stories over the course of the past forty years, he remains practically just as anonymous today as when he introduced his first book, *V.*, in 1963. 62 What is indeed known about the mysterious author is that he studied science and English at Cornell, and that he worked briefly as a technical writer with Boeing—a position which greatly informs his writing, which is marked with a technical accuracy that both confounds and astounds his readers. There also appeared in 1971 an article by Jules Siegel in *Playboy*, titled “Who is Thomas Pynchon and why did he take off with my wife?,” in which Siegel offers trivial details on Pynchon, who was his classmate at Cornell. 63 Charles Hollander, who says he never met Pynchon, also wrote a piece in

61 Pynchon, *Gravity’s Rainbow*, 683 (see chap. 1, n. 127).


It is unclear, however, how much of this information is speculation. More recently, Gerald Howard, who met Pynchon’s long-time editor Corlies M. Smith while working at Viking Penguin, divulged some of the information found in the author’s file at the publishing house. Although the fragments do paint a fuller picture, most consist of contracts and notes not written by the author himself. Tony Tanner has commented on the biographical vacuum surrounding Pynchon, saying “No contemporary writer has achieved such fame and such anonymity at the same time.” Appropriately, the author’s works—which are well-known for their complexity—seem to be just as perplexing to audiences as Pynchon’s biography. Pynchon has nevertheless accumulated a considerable following, as well as a number of accolades. Pynchon’s V., although it was initially greeted with confusion by critics, probably owing to its size and its unique brand of humour, went on to win the William Faulkner Foundation Award for the best first novel of the year. His second work, The Crying of Lot 49 (published in 1966), which is much shorter and more straightforward than V., has also been critically acclaimed. It is, however, Gravity’s Rainbow, which Pynchon published in 1973, that is his magnum opus, and for many, the work that permits this author’s name to stand alongside that of the legendary James Joyce.

As well recognized as Gravity’s Rainbow has been, its public appreciation in the form of prizes and awards has been fraught with controversy. Gravity’s Rainbow first won the National Book Award for fiction in 1974, a prize it shared with I. B. Singer’s Crown of Feathers. While Pynchon’s publishers worried he would simply refuse the award, instead, the author sent in

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67 Seed summarizes, “It was described variously as an ‘allegorical bedlam’, ‘a wearisome joke’ and a novel weighted down with much ‘learned lumber’, ‘a kind of sick museum of prevailing literary styles’.” Seed, “V.,” in The Fictional Labyrinths of Thomas Pynchon, 71.

68 Pynchon, Gravity’s Rainbow (see chap. 1, n. 127).
stand-up comic Professor Irwin Corey to receive it in his place, much to the confusion of the audience. Howard describes Corey’s performance as a “semicoherent leg-pulling speech,” and pities Ralph Ellison who unknowingly presented the award to the imposter—a forgivable mistake seeing as how no one knew what Pynchon actually looked like.\(^{69}\) Later in 1974, *Gravity’s Rainbow* was nominated for the Pulitzer prize, but the decision was overruled by the Pulitzer Prize Committee, who declared the work “unreadable,” “turgid,” “overwritten,” and sometimes “obscene.”\(^{70}\) The decision has been deemed scandalous by Pynchon fans, and Howard recounts, “It was decades before anybody could trust the Pulitzer Prize again as anything other than a dish for dullards.”\(^{71}\) The following year, *Gravity’s Rainbow* was awarded the Howells Medal from the American Academy of Arts and Letters, but Pynchon declined the honour. In a letter to the academy, he suggested it be given to another author, though he acknowledged tongue-in-cheek that, being gold, the prize was “probably a good hedge against inflation.”\(^{72}\) Despite its fame and place within the canon of American literature, *Gravity’s Rainbow* has indeed had a turbulent history in terms of public appreciation, eliciting strong reactions from readers faced with the unconventional work of a mischievous author.

With a cast of around four-hundred characters and nearly just as many diverging plot lines and story fragments, *Gravity’s Rainbow* is a difficult book to summarize. The work is divided into four sections (“Beyond the Zero”, “Un Perm’ au Casino Hermann Goering,” “In the Zone,” and “The Counterforce”), each containing between eight and thirty-two fragments, separated by a printed line of squares. The book more or less focusses on the adventures of American Lieutenant Tyrone Slothrop in London, France, Switzerland and Germany at the end of and following the Second World War, and his search for information regarding the Schwarzgeräet (S-Gerät, for short), a component of a secret German V2 rocket with the unusual serial number 00000, built with a new synthetic material called Imipolex G. Slothrop finds himself entangled

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\(^{69}\) Howard, “Pynchon From A to V,” pt. 2.


\(^{71}\) Howard, “Pynchon from A to V,” pt. 1.

\(^{72}\) Tanner, “Thomas Pynchon and the Death of the Author,” 15.
in the history of the rocket, as the same man who is credited with inventing Imipolex G., Laszlo Jamf, had also submitted Slothrop to behaviourist conditioning experiments in his youth. It now seems that Slothrop’s sexual exploits coincide uncannily with V2 rocket blasts, days before a site is hit. The narrative is told from different (often ambiguous) perspectives, some of which adopt a stream-of-consciousness mode of storytelling, with prolepses and analepses, and dream sequences that are sometimes never clearly identified as such. Slothrop’s character suffers from an acute paranoia that has him make both probable and unlikely connections amongst the people and events in his life, and readers are dragged along through his web of theories and delusions, adding to the confusion of the book. Slothrop grows more and more paranoid, and in his various adventures, he adopts several different identities as he dresses in a number of disguises, including a zuit suit to become Rocketman, and a Plechazunga (pig-hero) suit. Eventually, he falls apart and out of the narrative altogether. He is curiously absent from the last one-hundred-and-fifty pages or so of the book, and instead, the focus mostly turns to the stories of the people associated with the construction of the rocket. The novel ends with the image of a V2 rocket about to land on a Los Angeles movie theatre—a similar image to the one that began the story, suggesting a certain circularity.

*Gravity’s Rainbow* has garnered much attention amongst both literary critics and the general public. In fact, Pynchon has generated an entire industry revolving around his literary production. Notable contributions to the Pynchon universe include a journal called *Pynchon Notes* focussing solely on the author’s work, an image book that provides a scene for each page of *Gravity’s Rainbow*, and *A Gravity’s Rainbow Companion: Sources and Contexts for Pynchon’s Novel*, an explanatory companion book for the work (with a list of entries to which scholars have continued to add). Pynchon fans have also produced a plethora of online commentary on the author’s works, especially *Gravity’s Rainbow*, some of which tends to mirror


the author’s own verbosity. The polarization of Pynchon’s audience, however, is especially pronounced, perhaps precisely because of the significant attention the author’s works have received.

*Gravity’s Rainbow* was originally written under the working title *Mindless Pleasures*, a title that would have ironically underlined the difficulty of the text for readers. Even the academic audience readily admits that the text is exceptionally challenging. Sources of difficulty include the encyclopaedic references and cast of characters, an ever-sprawling narrative web, and Pynchon’s penchant for continually jumping from one event or discussion to another without any apparent justification. These features are evident from the opening pages of the text, and they risk alienating readers from the read. Among the first literary critics to write on *Gravity’s Rainbow*, David Leverenz admits,

> Like most academics interested in contemporary literature, I eagerly bought *Gravity’s Rainbow*. But the first twenty pages cooled my interest from curiosity to baffled boredom. By page fifty I had put the book down [. . . .] The sequences of words and paragraphs made no sense to me, seemed in no special order, accrued no momentum. 76

Michael Santa Maria similarly writes, “I labored over the first eighty pages in which a myriad of characters and plot twists are thrown at the reader.” 77 Howard, too, confesses, “Reading *Gravity’s Rainbow* was admittedly a slog. Many pages at a time would pass with only the dimmest comprehension of what the welter of character, event, and implication actually meant.” 78 Lack of comprehension, the sense of having to work to understand the words on the page, and a strong response involving intrigue, but also confusion and boredom, run through much of the commentary on the work.


78 Howard, “Pynchon from A to V,” pt. 1.
Pynchon readers are often plagued by a sense of inadequacy—whether warranted or not—before the author’s complex production and obtuse language, which results from their own visions of how the rest of the audience—which has evidently propelled the work to a certain level of fame and appreciation—responds. Leverenz recognizes that the boredom he initially felt was in fact a “mask for [. . .] more unsettling feelings of guilt, intimidation and anger,” and he notes the sense of accomplishment that comes with finally finishing the book and believing that one has made sense of some of it (231). He identifies the significant pressure that comes from the reading community, and that is bred by the very popularity of the book, saying that he was “shamed” into reading Gravity’s Rainbow in full as friends of his would cite passages with an air of understanding the work, “at least to their own satisfaction” (229). Before Pynchon’s obtuse literary production, many readers have similarly confided that their motivations for reading the work revolved around such feelings of pride and concern over their egos. For some, reading the book is less about enjoying the experience than it is about reaching the finish line in order to hold the achievement as a kind of status symbol.

Many view Gravity’s Rainbow as the quintessential postmodern text, and the controversy surrounding the novel is in many ways related to its experimental nature. Brian McHale was among the first scholars to comment on the postmodern aspects of the novel in 1979, saying that readers are “lured” into identifying patterns that provide “intelligible meaning,” as with more strictly modern texts (including those of Robbe-Grillet, Borges, and Beckett), but then they find that all that is produced is a “parody of intelligibility.” Consequently, the experience can be disconcerting. McHale writes, “if the reader seeks a stable reality among the minds of Gravity’s Rainbow—and the novel anticipates that he will—he will be checked and frustrated.” Steven Best later also situates Gravity’s Rainbow within a postmodern framework, describing it as a “postmodernism of resistance that directly engages political issues.”


80 McHale, “Modernist Reading, Post-Modem Text,” 90.

techniques and devices that Best identifies as characteristic of this postmodernism, including a “self-reflexive narrative,” an “indeterminism epistemology,” and the “abandonment of a linear narrative in favour of a fragmented, multiperspectival form” (one which lends itself to a “plethora of opposing interpretations”) may also prove to be important sources of difficulty with this text. In a more recent study, Luc Herman, Robert Hogenraad and Wim van Mierlo attempt to show from a linguistic and statistical point of view the differences between so-called realist, modern, and postmodern texts, using Joseph Conrad’s *Heart of Darkness*, James Joyce’s *Ulysses*, and Pynchon’s *Gravity’s Rainbow* as exemplars. Basing themselves on the premise that the night journey pattern and its relative undermining are defining characteristics of the aesthetics in question, they venture that there is indeed an “empirically verifiable distinction” between postmodernism and modernism, and conclude through their content analysis that *Gravity’s Rainbow* features “a sophisticated instance of this postmodern strategy.” Most importantly, it is to this subversion of the conventional forms that they attribute the frustrations that readers may feel before the text:

Nicely conditioned by the (continued yet fragmentary) evocation of the night journey, the reader may experience the sequence of frustrations as an almost subliminal confirmation of the pattern he or she is looking for. Yet the pattern is so subtly embedded that the text leaves its audience with the ambiguity it also bestows on certain events of the plot.

The postmodern character of *Gravity’s Rainbow*, then, appears to go hand-in-hand with its apparent difficulty. Readers are invited to make sense of the production before them, thanks to either deliberate literary conventions or to simple habit, but their attempts are mostly thwarted as

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82 Best, “Creative Paranoia,” 61.


84 Herman, “Pynchon, Postmodernism and Quantification,” 39-40.

85 Herman, “Pynchon, Postmodernism and Quantification,” 39.
the book refuses to cede any easy answers. Conventional expectations are subverted as readers undergo a process that McHale refers to as a “de-conditioning,” or a “re-education.”

While most scholars since McHale’s 1979 essay agree that *Gravity’s Rainbow* fits well under a postmodern rubric, the book has also been analyzed through a variety of other lenses and terms, including “encyclopaedic narrative,” “narrative satire,” menippea, “jeremiad,” “metaphoric narrative,” and “movie-within a book.” Alongside this push to classify the text and to explain it through the framework of postmodernism, scholars have also devoted much of their attention to disentangling the web it presents, thus engaging with Pynchon’s creation. Thanks to the underlying uncertainties that it features, the work creates complex puzzles that many readers cannot resist. This has been true throughout the forty years of scholarship on the text, and the push to make sense of Pynchon’s games has remained constant despite changing overarching trends in literary theory, whether it be attempts to understand the work through the thematics of tarot, of abstract systems, or the lens of the

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fantastic. The mathematical symbols and formulas that dot the work have especially intrigued literary theorists, who have attempted to extract meaning from the game of parabolas, cusps, and symbols for infinity, as well as the logical paradoxes that some have interpreted through Douglas R. Hofstadter’s notion of the “strange loop.” Many have also noted the humour and punning that is involved in Pynchon’s mathematical play (especially Lance Schachtene and P. K. Aravind), as well as the general humorous tone and joking of the book as a whole.

The popular response to Gravity’s Rainbow in many ways echoes that of the scholars’. What is also especially striking about this commentary on the work is the extent of the focus on the difficulty of the text. Whether the book is praised or condemned, its challenging nature is nearly always somehow incorporated into the response. The topic appears to be unavoidable. The metafictional elements of the novel seem to succeed in directing readers’ attention from the content to the form of the text. The level of appreciation for this linguistic and narrative play, however, varies. On the one hand, many readers describe a profound admiration for the author, his prose style, and his literary creation. Some even go so far as to call the book genius, “mind-

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expanding” and “life-changing.”

They also enjoy the humour of the work, and a few claim that certain scenes are so poignant as to bring them to tears. Other readers, however, express much disdain for the difficulty of the work, its minutiae, and its digressions. Like literary critic Howard (cited above) who confesses the book was a “slog,” a vast number of generalist readers admit the same, often even if they enjoyed the work. Many say the experience is a waste of time, that the book bores them, and that its style is too strange for them to digest easily. A number of readers complain that the plot of the 700-page book could have actually been contained within a mere few hundred pages, and that the rest is little else than filler material. Liked or disliked, the eccentric style of the work is often described with the use of drug references (either claims that the author must have been in a hallucinogenic state when writing these pages, or that the experience of reading them induces a state akin to the effect of a mind-numbing substance). Pynchon comparisons include not only James Joyce, but also Pablo Picasso and contemporary filmmakers David Lynch and Stanley Kubrick—all of whom toy with the traditional conventions of their respective media to induce a jarring effect on the audience.

As one reader puts it, the experience of reading Gravity’s Rainbow can be “like trying to read mud.” The bodily response that this book arouses in readers is especially strong, and many comment that the work “hurts” their mind or brain. One reader more kindly reports, “I felt as if I had given my brain the workout of a lifetime.” While these statements are mere hyperboles meant to sensationalize the readers’ online reviews, there is an element of truth to them in that Gravity’s Rainbow does in fact present readers with a language and plotline that is very taxing on working memory. Some readers’ comments, moreover, illustrate an even broader


kind of bodily response before the text, with several conceding that they threw the book across
the room. One reader insists, “This is the only novel that I have thrown against a wall only to
pick it up… and throw it harder the second time,” while another cries, “It frequently made me
want to gouge my eyes out with a fork.” 104 Again, it is impossible to take these comments at
face value, but it is important to note the tone of frustration that they reveal, and the way the
readers understand and envision their sentiments towards the text in question in a way that
involves their whole body engaged in a confrontational action.

Recognizing the difficulty of the text, readers with an appreciation for Gravity’s Rainbow will
often counsel others on how to approach it. They generally advise not to focus too heavily on
the minutiae of the text, and instead just to read for the experience of it. “Turn analytical off.
Open your mind and let the sentences flow in,” as one reader puts it. 105 Another suggests,
“Don’t try to understand it all, just hang on for the ride.” 106 Others still are more goal-driven:
“My approach to Gravity’s Rainbow was to not try to understand it, rather, just try to finish it.”
107 There appears to be a good understanding amongst the generalist audience that Gravity’s
Rainbow is not a book that is meant to be comprehended in the traditional sense. Whether or not
readers attribute this to the so-called postmodernism of the text, it seems to be clear to them that
Pynchon’s creation subverts literary conventions and thus defies usual patterns of reading. The
text is to be approached differently—with different motivations, and different criteria for artistic
merit—if it is to be enjoyed. Perhaps because of this, words of encouragement in the online
reviews of this book are plentiful. Many readers, however, do abandon the read. The
compilation of reviews, in fact, almost reads as a list of admissions of where readers quit the text.

104 Goodreads (reviews for Gravity’s Rainbow, entry by Matt, September 27, 2007), http://www.goodreads.com/
book/show/415.Gravity_s_Rainbow; Amazon (customer reviews for Gravity’s Rainbow, entry by Reviewer,
reviews/0143039946.

105 Amazon (customer reviews for Gravity’s Rainbow, entry by Samuel T. Ida “samiam”, June 25, 2001),

106 Amazon (customer reviews for Gravity’s Rainbow, entry by “fat hand”, June 12, 2002),

107 Amazon (customer reviews for Gravity’s Rainbow, entry by Paul Hector, October 31, 2007),
Most such reviewers confess to putting it aside approximately one-hundred pages in, just after the half-way mark of the first section. By this point, the story has shifted away from the initial presentation of the V-2 rocket and Slothrop (whose sexual escapades the British military has an interest in mapping due to their apparently predictive powers), as well as the description of an amorous relationship between two characters, Roger and Jessica, to several vignettes covering in precise and abundant detail (whose overall significance nevertheless tends to remains vague) on the complex military operations and projects in which Slothrop is ravelled, all of which lays the groundwork for his paranoia. That many readers abandon the work here may indicate a point at which the detail of the expanding maze-like narrative becomes especially burdensome. A few other readers make it to the 600-page mark, only to then cede to their disinterest. Alongside this inventory of failed attempts to read the book in its entirety, online commentators also often voluntarily post the number of years it has taken them to get through Gravity’s Rainbow, or years for which the read has been a work-in-progress. Values range from months to twenty-five years. As one reader puts it, the book can be seen as “the Mt. Everest of postmodern fiction.”

Diepeveen’s notion of difficulty as a “cultural gatekeeper” is especially evident in the responses to Gravity’s Rainbow. Just as Leverenz admits that he persevered through the read because he felt the pressure of matching his friends’ accomplishment, the general reading public also identifies this motivation as an important impetus for reading Gravity’s Rainbow from start to finish. For example, one reader says, “I’d heard it was the most difficult fiction novel ever and challenging to finish. I wanted to see if I could do it.” Many readers note the pride—and even the prestige—that comes with conquering the book. Interestingly, this triumph need not even include a perceived understanding of the novel, but just making it to the last page. One reader writes, “I sure as hell don’t comprehend it, but I’m glad I read it. A badge of honour.” Some readers, however, regret their persistence. One asks, “Why did I let my pride compel me


to read this although it took more than it gave? I’m still not sure.” 111 Others still are more critical of the idea that perseverance through difficulty is somehow rewarding, and dismiss the author’s work on these grounds. “Pynchon writes with supreme disregard for his reader’s enjoyment and comprehension—which some may consider artistic or avant-garde. I find it idiotic,” writes one reviewer. 112 Another rationalizes, “There is more to life than believing you are one of the 1% of the population that actually ‘gets’ Pynchon.” 113 Opinions on Gravity’s Rainbow are inevitably split precisely because the book poses such a challenge to its audience. Both the academic and the generalist communities acknowledge the difficulty of the text, but readers respond differently according to their relative appreciation for this type of convention-defying aesthetic.

Many readers identify Pynchon’s language in Gravity’s Rainbow as one of the more important sources of difficulty of the text. Readers from both the academic and generalist pools will often note the beauty of Pynchon’s prose and the astuteness of his language, which they say inspire awe and admiration in them. However, they will also readily admit that this very language poses a number of comprehension problems for them, precisely for its erudition and poetic beauty. Pynchon does not toy with language in Gravity’s Rainbow in an obvious way. Orthography is generally left intact, and although his syntax can be erratic at times, it usually does follow conventional rules of grammar. In fact, the only real original construction in the novel is the word “sez”—instead of “says”—which permeates the work from start to finish. While one reader comments that this game based on phonetics is “engaging,” the repetition of the term has a desensitizing effect, and so the de-automation that is initially produced at the introduction of


Pynchon’s play with language is not overt; instead, his ingenuity rests with his choice of words and their colourful combination.

The erudition of Pynchon’s language is one of the most noteworthy elements of the difficulty of the book. Pynchon pulls terms from disciplines as various as mathematics, physics, history and linguistics, and will often insert words and phrases in German, French, Russian, and other languages. It is inevitable that these expressions will not all be understood by individual readers. In fact, it is for this exact reason that Weisenburger published his companion book to *Gravity’s Rainbow*—a compilation of hundreds of terms likely to be unfamiliar to most readers. Howard comments on how he was initially struck by the challenging vocabulary of the work when he first read it:

> Pynchon’s vocabulary was fantastically recondite, and I still have the notebook in which I jotted down the meaning of *oneiric, abreaction, runcible spoon, hebephrenics, Antinomian, rachitic, velleity, preterite*, and a couple dozen other words impossible to use in ordinary conversation.

He is not alone in this sentiment. An online reviewer similarly writes, “I needed a dictionary to wade through it, especially the first 150 pages. The detail put into this book is awe inspiring.” Another echoes, “It almost takes a degree in Engineering and a degree in History to understand the myriad of concepts that are unleashed.” One reader also notes the disconcerting effect that Pynchon’s word choice has on the reading process: “I know that there was a plot in there somewhere, but I kept getting distracted by the language. Pynchon sends me running for my dictionary at every sitting. Words like *perepicacious* and *phantomaniac* cannot be passed by

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without a second glance.” 118 Literary critic Leverenz, who recognizes in his reading experience the same “dictionary reflex,” rightly posits that this impulse can make readers “self-conscious of language as a separating act.” 119 Pynchon’s obtuse terminology and esoterica have the effect of making readers aware of the representational medium before them. That is to say, they de-automatize or disturb the flow of the reading process.

The effect that Leverenz and the online reviewer note has a very real cognitive basis. In fact, when the latter says that novel words cannot be passed by “without a second glance,” this is indeed quite accurate in terms of eye movements, as tracking has identified. As research has shown, readers spend more time on novel words than on familiar ones.120 What Pynchon does, then, in presenting his readers with a slew of neologisms, technical references, and foreign borrowings, is extend the length of perception, the time which the eyes spend on the words. Because the expressions he uses, though unfamiliar or even orthographically complex, are still pronounceable, the eyes should indeed fixate them longer than if, for instance, their vowels had been omitted. Conventional rules of orthography and morphology are generally intact in Gravity’s Rainbow, and so vocabulary-based difficulty would not be expected to occur before the 240 ms to 400 ms mark, when semantic integration takes place, with exception, perhaps, in the case of foreign expressions, which may pose some difficulty for readers depending on their familiarity with the pronunciation of other tongues. For example, words like Liebigstrasse and Schnellbahnwagen may seem like challenging letter strings to readers not familiar with German.121


121 Pynchon, Gravity’s Rainbow, 161 (see chap. 1, n. 127).
Anna Mestres-Missé et al. have investigated the neuroanatomy of meaning acquisition—the parts of the brain involved in the processing novel words.\footnote{Anna Mestres-Missé, et al., “Functional Neuroanatomy of Meaning Acquisition from Context,” Journal of Cognitive Neuroscience 20, no. 12 (2008): 2153-66.} Word learning involves retrieving, selecting, and encoding information. On average, individuals between 2 and 20 years old learn 6 to 25 words a day, and high school graduates and college students have vocabularies between 40,000 to 1,000,000 words.\footnote{Thomas K. Landauer, “How Much Do People Remember? Some Estimates of the Quantity of Learned Information in Long-Term Memory,” Cognitive Science 10 (1986): 509-11.} As individuals generally learn words by exposure and without specific instruction, Mestres-Misse et al. make a point of studying word learning in the context of text. This type of implicit learning is also how readers would be expected to absorb new vocabulary items in Gravity’s Rainbow, as these are usually not explicitly defined. Instead, their meanings must usually be inferred from the surrounding context. For example, the definitions of words like “minarets,” “heliotrope,” “parallax,” “thermocline,” “permanganate,” and “jobber” are never given outright (83, 145, 170, 171, 211. 385). Mestres-Misse et al. find that learning from semantic context involves the medial-temporal cortex (which is related to increased semantic integration demands), the left inferior frontal regions (which are related to executive controls during language tasks, which are especially important in the case of increased difficulty in contextual integration), and the posterior cingulated and temporo-parietal regions (which are responsible for the continuous gathering of incoming sensory information). In the latter, they note a level of deactivation, likely due to the higher attentional demands of the word learning task; this means that because attention is more focussed, less processing resources are available for other tasks. The researchers also identify several subcortical structures that appear involved in a loop important for meaning acquisition, including the left thalamus, related to lexical retrieval from pre-existing stores, and basal gangli, which appear to be related to several cognitive and executive processes in the prefrontal cortex. In peppering his novel with uncommon but legible terms, then, creating a situation where readers are to acquire meaning from context, Pynchon forces activity related to meaning acquisition in these parts of the brain.

Naturally, each reader comes to the text with his or her own experience and abilities, and so it is not surprising that readers do not respond in a uniform fashion to Pynchon’s extensive
vocabulary. While some admire and delight in his erudition, others grow confused, bored, or even angered before his production. This is perhaps owing to the reality that the degree of difficulty of the text will vary for each reader. Skilled reading, according to Charles Perfetti, depends on two major factors: first, general processes (including decoding, phonological processes, retrieval, memory and automaticity), and second, word-level knowledge. The latter consists of knowledge about word forms (grammatical class, spellings and pronunciations), and also meaning. This second factor forms the basis of what Perfetti calls the lexical quality hypothesis, which states that lexical knowledge plays an important role in overall comprehension in reading. In other words, general processes alone cannot fully account for reading skill. The variability in the responses of the readers of *Gravity’s Rainbow* can be seen through the lens of this hypothesis, which acknowledges that each reader comes to the text with a different word knowledge base. Perfetti writes:

Thus the vocabulary of a given language includes, for a given reader, words of widely varying LQ [lexical quality], from rare words never encountered to frequently encountered and well-known words. Likewise, individual readers differ in the average LQ of their words. This reader variability is not just about the size of vocabulary, although it includes this; it is about the representation of words, the stable and less stable knowledge the reader has about the word’s form and meaning. (359)

The “representation of words” to which Perfetti alludes here refers to the aforementioned word-level knowledge—knowledge of form and of meaning. High-quality word representations are defined by “well-specified and partly redundant” representations of form (such as orthography and phonology) and “flexible” representations of meaning (357). They can be retrieved quickly and reliably. Low-quality representations, on the other hand, are what lead to word-related problems in text comprehension. For readers of *Gravity’s Rainbow*, then, comprehension difficulties arise when they encounter words for which they have low-quality representations, either of form or meaning, which impedes the retrieval process.

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Studies on “frontier” words (partially-known words) may further elucidate how the complex vocabulary of *Gravity’s Rainbow* affects the reading process on a cognitive level. Frontier words are defined as words where the form may be known but the semantic representation is either “incomplete” or “unstable.” Gwen A. Frishkoff, Charles Perfetti and Chris Westbury found that frontier words elicit different ERP patterns than well-known or completely novel words, meaning that qualitative and not just quantitative differences related to enhanced attention on word form exist. This pattern is evident, however, only for subjects with high vocabulary skills, and not those with average or low vocabulary skills (as classified by prior testing), suggesting that the former use different top down processing strategies when encountering partially known words. The vocabulary in *Gravity’s Rainbow*, which sends many readers thumbing through a dictionary or companion book, consists of a large number of frontier and unknown terms, whose representations are incomplete in the minds of readers. A small sample of uncommon terms—to add to the list compiled by Howard above—would include “phenylalanine,” “passementerie,” “gyves,” “osculations,” and “pelorus.” As the average lexical quality of readers’ vocabularies differs, so too does the degree of text comprehension. It would also seem that readers of differing skill levels would employ different processing strategies when they encounter these frontier words. Much of the variability in the response to the text, then, can be explained by readers’ prior lexical knowledge. It should also be noted that differences in working memory capacity also help explain this variability. As Susanne Wagner and Thomas C. Gunter have shown, compared to individuals with low working memory span,


127 Pynchon, *Gravity’s Rainbow*, 147, 345, 396, 528 (see chap. 1, n. 127).
high span readers rely more on information from the mental lexicon than from the actual context before them.128

Difficulties also arise when one examines Pynchon’s challenging vocabulary in terms of meaning acquisition and learning because often the surrounding context of an unknown term does not clarify its meaning. The general tone of the novel almost presupposes that the reader and the author share a certain common understanding. New information is most often presented in a way that assumes that readers are already familiar with it (whether concepts, technical terminology, new characters, or parts of the plot line), so that a continual sense of *medias res* permeates the novel. This presupposition is evident from the opening sentences: “A screaming comes across the sky. It has happened before, but there is nothing to compare it to now.” The words “before” and “now” are ambiguous, and leave the question “when?” unanswered, as does the pronoun “it,” which begs the question “what?” A few sentences on, the first character is indirectly introduced: “Above him lift girders old as an iron queen” (3). To whom does “him” refer? It is initially unclear. This intricate game of pronouns pervades the novel, and characters and key items are often alluded to without first being presented in a more direct fashion. The significance of these pronouns and new names and words must be inferred from the surrounding context. The expression “A screaming comes across the sky” also highlights the often metaphorical language that Pynchon uses and that can leave the exact denotative meanings of the expression unclear for readers—most problematically, as the passage rests on or continues to employ the underlying signification. Leverenz identifies another such example where the referent is unclear: “a blinding egg of sound.” In these cases, it seems likely that the right hemisphere, which activates a larger semantic web that the left hemisphere, would be quite engaged. It would be difficult, however, to settle on just one of these meanings without further indication from the text. While the mind can very quickly learn new words, the very complexity of Pynchon’s text in many ways discourages this kind of meaning acquisition from context.

As Mestres-Missé et al. have pointed out, the mind will readily learn new meanings from the context in which they are presented. In fact, after three exposures, brain potentials to new words in meaningful context are indistinguishable from those to known words. This “acquisition effect,” however, cannot occur when the novel words are presented in a context where no meaning can be derived.¹²⁹ For example, in their experiments, subjects were able to learn the meaning of the invented word “lankey” when it was presented in the following context:

Mario always forgets where he leaves the lankey.
It was expensive the repair of the lankey.
I punctured again the wheel of the lankey.

They were not, however, able to derive nor learn the meaning of the invented term “garty” in the following context:

I have bought the tickets for the garty.
On the construction-site you must wear a garty.
Everyday I buy two loaves of fresh garty.¹³⁰

As Gretchen Kambe, Keith Rayner and Susan A. Duffy have also shown, when the immediate context is ambiguous in this way, meaning can be inferred from the global context. Gravity’s Rainbow, however, presents readers with both immediate and global contexts that often do not necessarily provide the necessary clarifying details. Unlike the experiments by Mestres-Missé et al. where only a single target word is unclear, in the case of Pynchon’s novel, usually, several items are ambiguous. Rare vocabulary items are inserted one after another, sometimes surrounded by a cloud of new character names, place names and mission details (many of which have phonetics foreign to the English language, making them even more difficult to retain to an English-speaking audience—for example, “Ibargüengoitia,” “Smaragd,” and “VTsK NTA, the Vsesoynznyy Tsentral’nyy Komitet Novogo Tyurskogo Alfavita”) (384, 165, 352). The following passage, which begins a section in Part 3, is another apt example:


Back to Berlin, with a terrific thunderstorm blowing over the city. Margherita has brought Slothrop to a rickety wood house near the Spree, in the Russian sector. A burned-out Königstiger tank guards the entrance, its paint scorched, treads mangled and blasted off of the drive sprocket, its dead monster 88 angled down to point at the gray river, hissing and spiculed with the rain. (433)

Not only could the word “spiculed” be rare to some readers, but much of the tank terminology (“Königstiger,” “drive sprocket,” “monster 88”) would also be challenging in its precision to most readers. In the following example, place and mission names can be disconcerting:

Slothrop presents his sooper doper SHAEF pass, signed off by Ike and even more authentic, by the colonel heading up the American ‘Special Mission V-2’ out of Paris. A Waxwing specialty of the house. B Company, 47th Armored Infantry, 5th Armored Division appears to be up to something besides security for this place. Slothrop is shrugged on through. (298)

Proper names are often inserted in this casual way throughout the novel, and it becomes especially difficult to recognize which terms are important to understand and to remember. Most pages contain at least a dozen such proper nouns, most of which are place and character names that are not of the English language. The following passage combines a number of word-level difficulties:

Carroll Eventyr attempted then to reach across to Terence Overbaby, St. Blaises’ wingman. Jumped by a skyful of MEs and no way out. The inputs were confusing. Peter Sachsa intimated that there were in fact many versions of the Angel which might apply. Overbaby’s was not as available as certain others. There are problems with levels, and with Judgment, in the Tarot sense. . . . This is part of the storm that sweeps now among them all, both sides of Death. It is unpleasant. On his side Eventyr tends to feel wholly victimized, even a bit resentful. Peter Sachsa, on his, falls amazingly out of character and into nostalgia for life, the old peace, the Weimar decadence that kept him fed and moving. Taken forcibly over in 1930s by a blow from a police truncheon during a street action in Neukölln, he recalls now, sentimentally, evening of rubbed darkwood, cigar smoke, ladies in chiselled jake, pannen, attar of damask roses, the latest angular pastel paintings on the walls, the latest drugs inside the many little table drawers. More than any mere ‘Kreis,’ on most nights full mandalas came to bloom: all degrees of society, all quarters on the capital, palms
down on that famous blood veneer, touching only at little fingers. Sachsa’s table was like a deep pool in the forest. Beneath the surface things were rolling, slipping, beginning to rise. . . . Walter Asch (‘Taurus’) was visited one night by something so unusual it took three ‘Hieropons’ (250 mg.) to bring him back, and even so he seemed reluctant to sleep. They all stood watching him, in ragged rows resembling athletic formations, Wimpe the IG-man who happened to be holding the Hieropon keying on Sargner, a civilian attached to General Staff, flanked by Lieutenant [sic.] Weissmann, recently back from South-West Africa, and the Herero aide he’d brought with him, staring, staring at them all, at everything . . . while behind them ladies moved in a sibilant weave, sequins and high-albedo stockings aflash, black-and-white make-up in daintily nasal alarm, eyes wide going oh. (151-52)

This passage, typical of Pynchon’s style, not only introduces a host of (mostly new) proper names (Carroll Eventyr, Terence Overbaby, St. Blaises, Peter Sachsa, Wimpr, Sargner, et cetera), but it also intermingles them with number of rare vocabulary items (“truncheon,” “Hieropon,” “panne,” “attar,” “damask,” “Kreis,” “high-albedo,”). Even the imbedded descriptions of some of these words only compound the difficulty of the text by adding more conflating or ambiguous detail to it: for example, Walter Asch is presented as also going by the name of “Taurus,” Wimpe is described as “the IG-man,” and the mention of the 250 mg. dosage of Hieropon indicates that it is a drug but does not define its nature. When there are so many novel or low-frequency words in a passage, the context which surrounds a single “target” word does not necessarily clarify its signification. It is therefore difficult to learn what these unfamiliar words mean as the text progresses, even if they are repeated. Readers are left with impressions, not newly-acquired meanings (in the cognitive sense of the term).

Principles underlying the neuroanatomy of semantic difficulty grant insight into how the challenging vocabulary of Pynchon’s Gravity’s Rainbow impacts the reading process—an effect that is magnified when the author does not provide a clarifying context for the terms he introduces. The lexical quality hypothesis also provides reasoning as to why difficulty is subjective, and why responses to it are therefore different. Two important factors are at play: working memory, and prior vocabulary (which is retrieved from long term memory). It seems, too, that readers that can be classified as “high skill” (that is, readers who can read with ease and who can understand and retain much of the information presented) adopt different reading strategies than “low skill” readers. For example, these “high skill” readers rely more heavily on
their own mental lexicon than on the context of a word to process its meaning. Naturally, word-level difficulties within the text contribute to readers’ overall responses to the novel, and have led to a very mixed public response to the work, despite its canonicity. Pynchon readers are quick to note the difficulty of the text, and their enjoyment of or dissatisfaction with Gravity’s Rainbow appears to be dependent on their relative appreciation of the idea that art involves work on the part of the audience. Especially because of its popularity, its mixed reviews, and the highly emotive component of its commentary, Gravity’s Rainbow is an excellent example of Diepeveen’s principle of difficulty as a “cultural gatekeeper.”

4 “Is the sentence ended?”: Games with Syntax in John Barth’s Lost in the Funhouse: Fiction for Print, Tape, Live Voice

John Barth published his collection of short stories Lost in the Funhouse: Fiction for Print, Tape, Live Voice in 1968 after having had a good deal of success as a novelist, with The Floating Opera (1957), The End of the Road (1958), The Sot-Weed Factor (1960), and Giles Goat Boy (1966). Also known for what has been deemed his “postmodernist manifesto,” the essay “The Literature of Exhaustion” (presenting ideas which he later revised and clarified in “The Literature of Replenishment”), Barth is a significant contributor to the landscape of contemporary American fiction, one who has been awarded several honours for his work, including the National Book Award in 1974 for Chimera (a collection of three novellas published in 1972). His later works include LETTERS (1979), Sabbatical: A Romance (1982), The Tidewater Tales (1987), Coming Soon!!! (1996), and The Book of Ten Nights and a Night: Eleven Stories (2004), as well as two non-fiction works, the collections of essays The Friday Book (1984) and Further Fridays (1995). The prolific author is also a scholar. He began his career in 1953 teaching at the Department of English at Pennsylvania State University, then moved to the State University of New York at Buffalo in 1965. In 1973, Barth began teaching

131 Barth, Lost in the Funhouse: Fiction for Print, Tape, Live Voice, 108 (see chap. 1, n. 127).

132 In 1956, Barth was nominated for the same award for The Floating Opera.
an English and Creative Writing class at Johns Hopkins, where he remained until his retirement in 1995. The fact that Barth is an instructor of literature and teacher of creative writing resonates in his work, with his creations adopting a highly metafictional, self-reflexive character, wherein the author contemplates the nature of the story and its structure as he puts it onto the page.

The play in *Lost in the Funhouse* has been referred to as “a metaphor or microcosm of the Barthian oeuvre, and ultimately of the history of Western literature itself.” Written about midway through Barth’s career, the collection of short stories was a departure for the novelist. In an early interview in 1973, Barth admits that he initially found the short story form “simply uncongenial,” until he was nearly forty years old. *Lost in the Funhouse*, however, is more than simply a collection of short tales; instead, the arrangement is a carefully plotted series of pieces that link into each other to form a larger whole. In the Author’s Note to the 1968 edition of the volume, the author specifies, “This book differs [. . .] from most volumes of short fiction. First, it’s neither a collection nor a selection, but a series” (xi). Elsewhere, Barth has further clarified,

*Lost in the Funhouse* is meant to be more than simply a collection, a miscellany, of short stories whose only common bond is that they come from the same authorial imagination and with maybe a few echoing motifs or even characters among them. It’s meant to be a series in that there is an exfoliation and a development, one with a double motion.

Many critics have heeded the author’s words and treated the work as a unified tale; others have even approached the series as a novel, including Carolyn Norman Slaughter who notes that “a

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134 John Barth, interview by Frank Gado, “John Barth,” *First Person: Conversations on Writers and Writing* (Schenectady, N.Y.: Union College P., 1973), 120.

unity, a wholeness, is intended, according to the ‘Author’s Note.’” The volume may therefore stand comfortably alongside other novels from the same era, not only because of its peculiar, apparently transgressive form, but especially because the linguistic, logical, and narrative games that propel the work forward match those found in works written in this longer literary format published around the same time, including Pynchon’s *Gravity’s Rainbow*, and Cortázar’s *Rayuela*.

*Lost in the Funhouse* was published a year after Barth wrote his famous (and famously misunderstood) essay “The Literature of Exhaustion.” In this piece, Barth discusses what he later described as his “mixed feelings about the avant-gardism” of the late 1960s, and examines the creative possibilities that are still available to authors, which amount essentially to an exploration of new forms whilst negotiating an acute awareness of the “used-upness” of the forms of the modernist tradition. For example, he praises the work of Argentine short fiction writer Jorge Luis Borges, whom he cites as one of his inspirations in tackling the short story format of *Lost in the Funhouse*. The essay “The Literature of Exhaustion” was often misinterpreted as a pessimistic look at the future of literature, though Barth insists in the essay and elsewhere that the present condition and status of literature is “by no means necessarily a cause for despair” (64). Significantly, the essay was also seen as an important commentary on postmodern fiction in the American literary tradition. The term is never employed in the essay itself, but in a 1981 interview, Barth makes the connection explicit. “I believe what I was talking about was the coming to birth of—it’s hard to find a phrase—a ‘postmodern fiction’,” he says. Barth explains that “capital ‘M’ Modernism” seems to have “run its course” in the first part of the twentieth century, with the complex works of “brilliant” but “aristocra[tic]” authors like James Joyce and Marcel Proust giving way mid-century to a new kind of literature that seems to

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“transcend that quarrel between the cultural aristocrats and the pop novelists.”

Lost in the Funhouse is generally seen as the exploration of the ideas expounded in “The Literature of Exhaustion,” and as such, it is one of the key works of the American postmodern tradition.

Especially in the 1980s, whether prompted by Barth’s interview comment or not, critics focused heavily on the postmodernism of Lost in the Funhouse. Early on, the attribution was almost tentative, with the “post” of “postmodern” meaning apparently little more than “that which comes after.” For instance, Jan Marta writes,

John Barth’s Lost in the Funhouse […] lies beyond the Modernist period in a position to reflect on the movement from which it has evolved. It exposes Modernist commonplaces and truisms, and parodies the attempts of earlier Modernists, like Joyce in Ulysses, to treat the whole tradition of literature. Using the very techniques of Modernism to destroy that movement, Lost in the Funhouse attempts to regenerate literature, to provide an antidote to the post-Modernist blank of silence to which writers like Beckett lead.¹⁴¹

Later, the term loses its hyphen and is used with far more certainty to denote not just the period to which the collection belongs, but also its style and message. For instance, Max F. Schulz says the work creates “new postmodernist combinations,”¹⁴² and Lance Olsen notes its “postmodern humor,” which he defines as slapstick applied to discourse—“[l]anguage slips on wordy banana peel and stumbles over its own feet.”¹⁴³ Similarly, Deborah A. Woolley alludes to critics who

¹⁴⁰ Barth, interview by Reilly, “An Interview with John Barth,” 7.


have referred to the volume as an “‘empty’ postmodern ‘text’,” and Alan Lindsay calls the book a “meditation upon the relationship of a postmodern ‘author’ to his text.”

Jacques Derrida, of course, has not escaped this discussion of the literary postmodern, with critics identifying a deconstructionist thread within the pages of *Lost in the Funhouse*. Steven M. Bell, for instance, writes that the work “seems unwittingly, and so all the more significantly, to embody Derrida’s ‘program’ for ‘the end of the book and the beginning of writing,’” and Brian Edwards notes that the labyrinthine funhouse of Barth’s series “is an appropriate figure [. . .] for Derrida’s concept of decentering.”

Walter Verschueren says that the “duplicity of discourse” in *Lost in the Funhouse* “vocalizes a critique of the notion of textuality, which [. . .] follows closely the deconstructive project of Jacques Derrida.”

The self-reflexivity of the tales naturally fits well within a postmodern paradigm of interpretation, and in fact, this turning inwards of the stories, wherein conventional linguistic, narrative and logical forms are exposed and shattered, is precisely what poses certain challenges to readers.

Regarding Barth’s novels written prior to the publication of *Lost in the Funhouse*, Beverly Gross has commented that they are not “so profoundly difficulty or dense,” but still “near impossible to re-read” because they leave the audience “still befuddled” the second time around. "Giles Goat-Boy", for instance, Gross says, is frustrating for it refuses to offer a synthesis at the end of the reading. The same could be said about the difficulty of *Lost in the Funhouse*. Still readable

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in that it concentrates on certain clear themes like love and identity for example, *Lost in the Funhouse* also presents its readers with important metafictional elements that subvert traditional linear narrative and mimetic forms, and it thereby thwarts the possible expectations readers may have going into the work. For example, an authorial voice continually intrudes into the story to comment on its development and the style of its telling. One of the most famous examples is perhaps the following passage in the title story “Lost in the Funhouse,” because it comments on the very subversion of realism as well:

> Initials, blanks, or both were often substituted for proper names in nineteenth-century fiction to enhance the illusion of reality. It is as if the author felt it necessary to delete the names for reasons of tact or legal liability. Interestingly, as with other aspects of realism, it is an *illusion* that is being enhanced, by purely artificial means.

(73)

What groups the stories of this collection together is an exposure of the writer’s craft. Part of the game, too, is a reflection upon the very medium of print as a means of communication. Marshall McLuhan’s views on media were highly popular when Barth was contemplating the exhaustion of literature, and *Lost in the Funhouse*, subtitled *Fiction for print, tape, live voice*, is a testament to this influence. The inward look at the mechanics of fiction and the significance of print leads to various subversions of conventional forms in Barth’s prose in *Lost in the Funhouse*, including commentaries on the process of writing, the exposure of the techniques of realism, convoluted narrative frames, appeals to the reader, open-ended conclusions, ambiguous narrative voices, authorial digressions, jumbled syntax, playful repetition, and creative use of punctuation. These subversions affect both the coherency and transparency of the text, so that it virtually becomes the kind of labyrinthine funhouse that the title story describes, one in which readers risk getting lost.

Barth concentrates heavily on the relationship between the author and the reader in *Lost in the Funhouse*, and is acutely aware of the role the reader plays in the creation of fiction—not just

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148 In an interview, speaking about the political and academic climate when writing of the “Literature of Exhaustion” in 1967, Barth says, “in the middle of it all there seemed to be this voice booming down from Toronto, Marshall McLuhan’s, assuring us that print, along with everything else, was kaput.” Barth, interview by Reilly, “An Interview with John Barth,” 6.
interpreting the text according to individual experience, but also breathing life into its stories by the mere fact of reading the words off the page. Some critics have noted a certain hostility that Barth—or rather, the implied author of the collection—seems to sense towards the reader, on whom his existence as author and the existence of the tale depend. For example, Carol Shloss and Khachig Toloyan have written, “Barth profanes his readers with almost ritual insistence and objects to them as an audience, even as he insists the he needs their presence; *Lost in the Funhouse* develops the insult as a form of invitation.”  

Barth does not, as might be expected, always woo the reader. At times he even seems disdainful, as though he resents his dependence upon the reader for the existence of tale and teller. Most notably in *Lost in the Funhouse*, Barth uses extravagant and shocking methods to elicit the reader’s response.

Yet, despite the apparent antagonism of the author, there is a certain altruism to his disconcerting breaks with narrative convention. Westervelt, Shloss and Toloyan all agree that the difficulty inherent to the text has a pedagogical end. Westervelt suggests Barth “educates his reader to confront the problem of self-consciousness,” and Shloss and Toloyan say,

> [the author attempts] to move readers away from their traditionally flaccid reading postures. What Barth looks for in us is difficult to assess, but it seems to involve a willingness to play with deceptions and the ability to learn, ultimately, what to do with them.

The idea is to teach readers to read both creatively and critically by grabbing and holding their attention through the use of unconventional forms. The author encourages readers to reflect not just on the work in hand, but also on the entire tradition of storytelling. Whether or not he

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achieves this end, the focus on the reader in the telling of the stories is prominent throughout the collection. As the reader is brought into some of the tales, the division between the implied reader and the real readers becomes more evident, as the latter have the opportunity to reflect upon the humour of the situation whereby the narrator casts insults at his audience. For instance, in “Life-Story,” the narrator charges, “The reader! You, dogged, uninsultable, print-oriented bastard, it’s you I’m addressing, who else, from inside this monstrous fiction,” and then attempts to discourage his audience from continuing on with the story:

You’ve read me this far, then? Even this far? For what discreditable motive? How is it you don’t go to a movie, watch TV, stare at a wall, play tennis with a friend, make amorous advances to the person who comes to your mind when I speak of amorous advances? Can nothing surfeit, saturate you, turn you off? Where’s your shame? (127)

The showdown between the narrator and his readers unfolds in this way until the end of the story, and if the readers do choose to go on, it is likely that they would view the “you” that the narrator addresses as an implied reader, not themselves. From their removed position, readers may find humour in the absurdity and ferocity of the discomfort the author feels at the hand of his audience, trapped inside his “monstrous fiction.” The relationship between the author and the readers, then, is different from the hostile one between the implied author or narrators of the tales and the implied readers. Nevertheless, the narrators sometimes do speak the truth, and the fictions they deliver, with their metafictional self-consciousness, can indeed irk some readers and lead them to cast the book aside.

Barth says that he did not write Lost in the Funhouse to achieve commercial success. Part of his motivation in writing short stories was to try his hand at a format that could more readily be included in the literary anthologies of the day, not make money. Barth revealed in an interview, “I knew when the Lost in the Funhouse stories came out that the book could not possibly turn a profit for its publisher. The publisher knew it too, and neither of us cared

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153 Barth, “The Literature of Exhaustion,” 63 (see chap. 2, n. 137).
unduly.” Yet, his unconventional prose were not entirely lost on the generalist audience. In 1979, Thom Seymour commented that the book “has not been neglected by the reading public, presumably;” instead, it was the critical audience that Barth risked losing. Seymour notes that the book received “generally unfavorable reviews” when it was first published, with reviewers taking his pieces for “mere baubles, toys for an exhausted imagination” (189). Seymour sums up their line of argumentation: “you have circled back so fully on your own self-awareness, Mr. Barth, where can you go from here?” (189). Yet, in 1990, Lee Lemon expressed “concern” for Barth’s “literary reputation” for precisely the opposite reason. He writes,

Barth’s reputation will all too likely wane, especially among ordinary readers and the semicommitted (students and nonprofessionals), those who fill out the numbers of readers who keep reputations alive. More than that of more writers of fiction, Barth’s reputation, like Joyce’s, is likely to be left in the hands of the eager professional, the reader who reads less for enjoyment than for an unsolved problem or an unanswered question that can be converted into a publishable paper.

Despite Lemon’s concerns, judging by the online commentary on the work, *Lost in the Funhouse* is indeed still read by a generalist audience today. While some readers inevitably delight in the read and the games put forth by the author, calling, for instance, the book a “stunning sampling of erudition, wit, originality, and linguistic pyrotechnics,” others resent the self-reflexive vein of the collection that poses so many challenges to readers. One reader writes, “*Lost in the Funhouse* can be a very bewildering and irritating collection if you aren’t in the right mood for

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154 Ciado, “John Barth,” 125 (see chap. 2, n. 134).


Highlighting the bodily nature of the response to Barth’s brand of linguistic and logical play even more, another reader says bluntly, “this book hurts the reader,” and yet another notes that it can be “uncomfortably self-conscious and almost painful to read.” One particular reader recognizes that part of the problem may be that the kinds of games Barth plays with the reader are by now somewhat outdated, but insists that the “obscure” tales “about their own conception [and] futility” are also too drawn out to appeal to the audience. Part of the problem, too, for those readers who lose interest in the collection, is that Barth alludes to a repertoire of Greek mythologies and literary antecedents that may be wholly outside of their realm of knowledge. Several readers comment that the final two stories of the collection, “Menelaiad” and “Anonymiad,” are unreadable precisely for their erudition. One reader comments, “towards the end I had to put it down, mostly because, without a knowledge of The Odyssey, I was entirely unable to grasp the intricacies of [Barth’s] last two stories.” This example demonstrates a certain elitism inherent to Barth’s text: only a particular segment of the reading public may partake in the play that Barth puts forth for a great deal of prior knowledge of literary history and conventions is required for readers to fully appreciate the parodic commentaries the author makes. The very difficulty of the text, however, also enacts this role of “gatekeeper,” so that Lemon’s concerns about the appeal of the book to a generalist audience are in many ways still entirely valid.


159 Goodreads (reviews for Lost in the Funhouse, entry by Michael Buozis, 12/16/08), http://www.goodreads.com/book/show/12885.Lost_in_the_Funhouse.


162 Goodreads (reviews for Lost in the Funhouse, entry by Taylor, 04/18/09), http://www.goodreads.com/book/show/12885.Lost_in_the_Funhouse.
There are a number of metafictional devices employed in *Lost in the Funhouse*, but one form of play that has been examined quite significantly by the cognitive sciences is the manipulation of sentence structure, or, syntax. The cognitive sciences sometimes study syntax in conjunction with semantics (for example, where garden-path sentences and anaphoric references are concerned), and so it is not necessary here to outline the definition of the term “syntax,” which should simply be understood generally as the form of the ideas or phrases on the page. The sentence structure of *Lost in the Funhouse* is certainly unique and experimental. The author’s handling of linguistic forms, however, does not go over well with all readers. One *Lost in the Funhouse* reader, for instance, sarcastically comments online, “the confusing syntax did make for some enjoyable numerous read thrus and excellent mind-wandering time,” insinuating that the prose was so convoluted that his attention had been lost.\(^{163}\) Another reader appreciates Barth’s fictions, calling some of them (including “Ambrose his Mark”) “amazingly inventive,” and even admiring the author’s “unique and evocative” prose style, but finds Barth’s more extreme manipulations of sentence structure unappealing: “When he launches off into syntax-less prose poetry he reveals all of his style’s weaknesses in exchange for no noticeable strengths,” the reader criticizes.\(^{164}\) While it is impossible to derive the online responses of these readers from their offline responses, we can indeed better understand how syntactical forms impact the reading process at a general level.

The manipulation of form in *Lost in the Funhouse* is quite calculated. In a very McLuhanesque fashion, Barth often makes form mirror content in his fictions, so that the medium speaks just as loudly as the message. Many of the constructions, in fact, are entirely autological, so that what they are and what they say are one and the same. For instance, one story is titled “Title,” and the story “Autobiography” ends on the phrase, “my last words will be my last words,” so that the “last words” are indeed the last words (39). Most of the play in the collection, in fact, revolves around beginnings and endings, and the deconstruction of teleology. In “Petition,” the beginning letter “b” is missing in the word “eginning,” and the final sentence of “Title” is “How in the

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world will it ever”—omitting the word “end” (presumably) so that the story does not do so (66, 113). This insistence on the continuance of the act of story-telling is perhaps best illustrated in the opening story “Frame-Tale,” where readers are instructed to cut along a dotted line and bend the resulting strip of paper inscribed on both sides into a Möbius strip that reads, “ONCE UPON A TIME THERE WAS A STORY THAT BEGAN ONCE UPON A TIME” ad infinitum (1-2). The end dissolves into the beginning so that both, by definition, disappear entirely, just like the beginning “b” and the ending “end.” The final tale of the collection, incidentally, perpetuates this looping motion of the book, ending with the fragmented sentence, “Wrote it,” where “it” stands for a tale that protagonist has set out to sea (201). In other words, the entire collection, which opens with the story “Frame-Tale,” both begins and ends with a tale—is framed by it—so that, ultimately, this final word just brings readers back to the very beginning. As these examples reveal, Barth’s choice of words and the constructions he forms with them are both meaningful and inseparable. Formations beyond the manipulation of beginning and ending words exist, but all are generally prone to exhibit a self-referential movement that can be disconcerting to readers, as the online reviews insist. From a syntactic point of view, the title story “Lost in the Funhouse” offers several interesting deviations that may affect the reading process. In many ways, the story appears to be not a completed tale, but the scaffolding or draft on which an author is still working. Its presentation in a published format, in other words, appears to be somewhat premature. But, of course, this strange effect is the one that is seemingly desired by the author, who puts the very medium of print into brackets in this collection that contemplates the nature of storytelling in other forms, including tape and live voice. The story, which refuses to grant its readers one singular conclusion, instead offering at least three, includes the (implied) author’s musing on the nature of writing and on the development of the text at hand (he asks, “What is the story’s theme?” and reminds himself, “Fill in:”), and presents sentences that appear to be incomplete in several important ways (79, 92). Sometimes, the sentence simply stops midway through and is abandoned, and elsewhere, its arrangement is later reworked. The first such intrusion into the text is the sentence “The brown hair on Ambrose’s mother forearms gleamed in the sun like,” followed by a period (74). The next is, “The smell of Uncle Karl’s cigar smoke reminded one of” (74). There are at least six such instances throughout the text. At times, constructions are taken up again with improved wording: “‘I swear,’ Magda said, in mock in feigned
exasperation”—the italics stressing the correction (82). These broken sentences and self-reflexive comments on the story itself occur more and more frequently throughout the tale as it unravels and the implied author seems less and less certain of the form it ought to take. Naturally, the author’s shorthand, personal notes and reminders, and abandoned phrasal constructions pose certain challenges to readers. Some of the effects of these subversions on the conventions of print form on the process of reading are today beginning to be understood in the cognitive sciences.

In the early 1990s, researchers first identified an ERP that appeared to be linked to syntactic processing: a parietal positive effect that peaks around 600 ms after a stimulus is presented—the P600. Studies since then have found that a variety of syntactic violations can elicit a P600 response, including violations of subject-verb agreements, of case inflection, and of verb inflection, as well as pronoun errors and phrase structure violations. Further research


has also been able to better qualify the nature of the P600 response, complicating it, but also better outlining its applicability to the syntactical component of linguistic processing. For example, Suzanne Dikker, Hugh Rabagliati and Liina Pylkkänen found that violation of predictions on syntax can cause a spike in ERPs as few as 120 ms after a stimulus is presented, attesting to the rapidity at which language is processed.\textsuperscript{171} One of the biggest challenges to understanding the response, however, has been deciphering why certain semantic anomalies appear to elicit a P600 response instead of a N400 response, which is traditionally linked to semantic processing.\textsuperscript{172} Researchers have suggested that from a functional point of view, the P600 reflects not just syntactic processes, but also executive processes, and that the discrepancies also illustrate the degree to which semantics and syntax are interlinked in sentence processing.\textsuperscript{173} More specifically, Yoshiko Yamada and Helen J. Neville, who examined the timecourse of sentence processing in the case of both English sentences and what they qualified as nonsense (Jabberwocky) sentences, concluded that both semantic and syntactic information is integrated in the early stages of sentence processing, and that this interaction continues through to the later stages of processing.\textsuperscript{174} Their conclusions are based on an experiment whereby Jabberwocky sentences with syntactical anomalies elicited P600 responses with less significant amplitudes when compared with English sentences with comparable anomalies, suggesting that semantics do play a large role in syntactical processing. Despite these complications, the P600 response is


indeed generally linked to violations of a syntactical order in the reading process, though it seems that it may also reflect the highly integrated nature of linguistic processing as well. Importantly, it does not appear that the network of areas linked to syntactical processing (Broca’s area, and the anterior, middle and superior areas of the temporal lobes) is limited to this function.\textsuperscript{175} Neither does working memory appear to have a component devoted specifically to syntax; instead, it seems that syntactical processing employs the same working memory resources and is restrained by the same load constraints as any other activity.\textsuperscript{176} What is more, expectations play an important role in syntactical processing and the ease with which it is carried out. In an experiment, Constance Th. W. M Vissers, Dorothee J. Chwilla, and Herman H. J. Kolk found that the P600 response that was elicited by linguistic anomalies in a certain set of sentences was greatly reduced when participants were told that the anomalies were not errors, but intended.\textsuperscript{177} When Barth toys with syntax, then, the neural response that is elicited is a P600. As the study on Jabberwocky indicates, the more sensical the context, the greater the amplitude of the response. It would follow that as the structure of “Lost in the Funhouse” devolves, illustrating the implied author’s growing entanglement in his own tale and his diminishing certainty as to which direction it should take, the amplitude of the P600 response to certain syntactical games would lessen for readers. Readerly expectations naturally come into play. As more and more syntactical and semantic anomalies present themselves in the text, the less of an impact they may individually have on the reading process; however, from a collective point of view, they would indeed, as a whole, disturb reading for some readers, as the online reviews would suggest.


Barth’s incomplete sentences nicely illustrate the significance of expectations in reading, seeing as how even from an intuitive level, it is clear that a somewhat jarring sensation occurs when a sentence ends prematurely. While sentences like “How in the world will it ever” in the short story “Title” appear to have rather predictable endings (here, the word “end,” which fits from both a formulaic standpoint, but also a poetic one so that the end word of the tale is in fact the word “end”), most of the incomplete sentences in “Lost in the Funhouse” are impossible to reconcile in the imagination with any kind of certainty (113). It seems that readers are here endowed with a certain authorial responsibility. The aforementioned sentence fragments “The brown hair on Ambrose’s mother forearms gleamed in the sun like,” and “The smell of Uncle Karl’s cigar smoke reminded one of,” are the first two examples of this type of anomaly in the text, and are followed by other fragments, including, “the reader may acknowledge the proposition, but,” “He gave his life that we might live,’ said Uncle Karl with a scowl of pain, as he,” and “if anyone seemed lost of frightened, all the operator had to do was” (79, 87, 97). Sometimes, it is unclear whether a sentence is a fragment or a complete thought: “The Irish author James Joyce once wrote” (89). According to research, readers predict upcoming words in sentences as they unfold in real time. Marte Otten and Jos J. A. Van Berkum have identified that it is not simply the mere presence of the anterior words in the sentence that, through priming, lead readers to anticipate the missing words, but it is the message as a whole that is being conveyed that leads them to make their predictive inferences. What is more, working memory plays a large role in the process. In another study, Otten and Van Berkum found that while unexpected determiners elicit a distinct pattern of neural activity around 300 to 600 ms after presentation for both high and low working memory capacity readers, only low working memory capacity readers display later activity from 900 to 1500 ms. The researchers reason, “This pattern of results suggest that WMC [working memory capacity] does not influence the ability to anticipate upcoming words per se, but does change the way in which readers deal with information that disconfirms the generated prediction” (92). It seems, then, that Barth’s


incomplete sentences are effective in destabilizing the reading process because readers generally make predictive inferences as they read; most anomalous sentences, moreover, are especially effective because these inferences are based not on semantic priming, but on the message that is being conveyed—which Barth refuses to reveal, instead letting his readers decide for themselves. That readers respond to Barth’s text differently is also made evident in Otten and Berkum’s second study, which highlights the fact that readers with low and high working memory capacity exhibit different neural patterns when faced with such syntactical anomalies.

The processing of the prosody of a text (whether written or oral) also has a distinct and identifiable neurobiological reality behind it. Prosody is a textual element Barth experiments with in “Lost in the Funhouse” when he alters the visual cues that indicate the way in which the text ought to be read—how the words on the page reflect the supposed voice of the speaker. For example, replacing punctuation with the words for this punctuation, he writes, “from his earliest memory parenthesis of maple leaves stirring in the summer breath of tidewater Maryland end of parenthesis to the present moment” (92). The story “Title” is especially ripe with such examples. In “Title,” as the very title would indicate, Barth often replaces elements of the composition with the word for the element itself, so that the text is dotted with expressions describing punctuation (“Oh God comma I abhor self-consciousness,” “Perhaps adjective period”), word function (“the novel is predicate adjective,” “Among the gerundive”), sentence structure (“adverbial clause of obvious analogical nature,” “long participial phase of the breathless variety characteristic of dialogue attributions in nineteenth-century fiction”) or story structure (“Suspense,” “Parallel phrase to wrap up series!”) (113, 110, 109, 106, 111, 107, 106, 111). The effect is that there are two levels for readers to contemplate simultaneously: both the story and its telling. In terms of prosody, eliminating the cues that signal the modulations in the voice of the implied speaker (replacing them with words like “parenthesis,” “comma,” or “period,” without providing these actual elements in print) naturally affects the reading process. Researchers have found that prosody registers with readers around 800 ms after a stimulus is presented. Investigating spoken language, Corine Astésano, Mireille Besson, and Kai Alter identified a positive P800 response (with a left temporo-parietal scalp distribution) associated with prosody, while noting that
prosodic cues also interact with other linguistic information (semantic and syntactical). In another study, Roel Kerkhofs et al. also found that the visual cues of a written text (the comma being the one on which they focus) and the auditory pause in an oral text work in a parallel manner to disambiguate sentences. The way Barth plays with sentence structure, then, deleting the visual cues for punctuation and replacing them with readable words that give no indication of a natural pause in speech, impacts the reading of his text. This manipulation of prosody should impact the reading process around 800 ms into linguistic processing, and may have several other effects earlier on as well, in that semantics and syntax are also affected.

Related to the P600 effect is the response elicited by ambiguous anaphoric references, a textual feature Barth toys with when he leaves the antecedent of a pronoun unclear, either mentioning it only much further up in the text, or, in some cases, not offering it at all. The game takes many forms, but the most striking example is perhaps found in the tale “Menelaiad.” “Menelaiad” presents readers with a game of quotation marks, with frame upon frame of dialogue intertwined so that the identity of speakers becomes confused. The text is punctuated by progressively more quotation marks, to arrive at constructions such as “‘ ‘ ‘ ‘ ‘ ‘ Why?’ I repeated,’ I repeated,’ I repeated,’ I repeated,’ I repeated,’ I repeat,” and “‘ ‘ ‘ ‘ ‘ ‘ ‘ ‘ ‘ Love!’ ‘ ‘ ‘ ‘ ‘ ‘ ‘ ‘ ‘ (155). Literary critic Walter Verschueren notes the “disconcerting effect” the “Chinese box structure” of the quotation marks has on the readability of the text, and Jan Marta says that the “multiplication has both comic and serious effects drawing attention to the medium

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182 Nieuwland and Van Berkum found that ambiguous, incoherent, and simultaneously ambiguous and incoherent anaphoric references elicited late positivities in about half of the participants in their study. The researchers suggest the finding must be taken into account in discussion of the functional significance of the P600 response, which has traditionally been associated with syntactical processing. Additionally, they say that the discovery reveals that “people differ in the extent to which they, on top of the comprehension processes, process for implausibility,” highlighting the reality that individual readers respond to texts differently; Nieuwland and Van Berkum, “The Interplay between Semantic and Referential Aspects of Anaphoric Noun Phrase Resolution: Evidence from ERPs,” 129 (see chap. 1, n. 124).
of the message” as well as to its limitations.\footnote{Verschueren, “Voice, Tape, Writing’: Original Repetition in Lost in the Funhouse (Beyond Phenomenology: Barth’s ‘Menelaid”),” 85 (see chap. 2, n. 146); Marta, “John Barth’s Portrait of the Artist as a Fiction: Modernism through the Looking-Glass,” 216 (see chap. 2, n. 141).} The referent of the anaphor in these constructions is unclear, with the case of the “I”s in the first passage being a typical example. With so many “I”s, and with their referents so far back into the text (if mentioned at all), the stress on cognitive functions, namely working memory, is great. As research has shown, anaphoric references that are unclear due to the structure of the text have a distinct effect on linguistic processing. As researchers Ruth Filik, Anthony J. Sanford, and Hartmut Leuthold have found, singular and plural pronouns with unclear referents affect reading slightly differently.\footnote{Ruth Filik, Anthony J. Sanford, and Hartmut Leuthold, “Processing Pronouns without Antecedents: Evidence from Event-Related Brain Potentials,” Journal of Cognitive Neuroscience 20, no. 7 (2008): 1314-26.} First, while a fronto-central positivity is detectable 750 ms into linguistic processing in the case of both he/she and they with unclear referents, the amplitude is greater in the former instance. Second, while an N400-like effect is also elicited in both cases, again, the narrower he/she context produced a larger effect. The researchers suggest that a greater integration effort is required for the singular pronouns because they have specific, individual referents. The “I”s of Barth’s linguistic construction then, should elicit a neural pattern that resembles the one the researchers found in the case of the singular pronouns he and she, for the “I”s have individualized antecedents. This kind of specificity has a greater impact on the reading process, it would seem. Not all ambiguous anaphoric references, however, elicit the same response. Mante S. Nieuwland and Jos J. A. Van Berkum note how formally ambiguous anaphoric constructions sometimes are not perceived as such.\footnote{Mante S. Nieuwland and Jos J. A. Van Berkum, “Individual Differences and Contextual Bias in Pronoun Resolution: Evidence from ERPs,” Brain Research 118 (2006): 155-67.} Individual language processing abilities and contextual bias towards one particular interpretation are two factors that come into play. In another study, Nieuwland and Van Berkum also show how semantic incoherence can affect the reading of an ambiguous anaphoric construction.\footnote{Nieuwland and Van Berkum, “The Interplay between Semantic and Referential Aspects of Anaphoric Noun Phrase Resolution,” 119.} While ambiguous anaphors elicited a “sustained negative shift,” incoherent anaphors elicited an N400 effect. When
anaphors were both ambiguous and incoherent, the result most closely matched the response to incoherent anaphors. What these findings suggest is that readers, when confronted with semantic incoherency, do not engage in anaphoric referencing. Barth’s complex constructions in “Menelaiad,” then, may discourage readers from attempting to locate the proper antecedent to a pronoun, or even of identifying the correct speaker of an utterance, an act that would require the conscientious disentangling of a thick web of quotation marks. On this note, the importance of knowing the identity of a speaker in textual processing should be underlined. Berkum et al. found that the identity of a speaker is taken into account between 200 and 300 ms into linguistic processing.  

“[L]anguage comprehension takes very rapid account of the social context,” the researchers note (580). When “Menelaiad” presents its readers with utterances buried in a network of layered quotation marks too vast to be easily disentangled, the sequence of speakers is ultimately unclear. This ambiguity would register with readers 200 to 300 ms into linguistic processing.

Barth engages in a number of games that affect readers in the later stages of linguistic processing. These include the manipulation of syntax, which affects the time course of reading at about 600 ms into processing, and play with the prosodic cues of the text which affects reading at around 800 ms. His experiments with syntax in “Menelaiad” also have consequences for the location of anaphoric references, and his play is so extreme that it would not register with readers at the point of semantic integration at the 400 ms mark, but earlier, around 200 to 300 ms in, when the identity of a speaker is taken into account. This last example, whereby readers may be so overwhelmed by the complex web of quotation marks as to abandon the task of locating their origins and their respective speakers, is perhaps a good analogy or microcosm of how difficulty in general can affect readers before a text. Some may simply abandon the read rather than indulge in the linguistic acrobatics it requires of them. It is important, then, to have a balance between the play and the coherency of a text, if readers are to continue on with it and experience its proposed adventure. As the cognitive experiments on Jabberwocky nicely demonstrate, the more coherent the context in which deformations appear, the more pronounced the effect of the play at the neural level. What is also important to note is the significant role of working memory

in syntactical processing, which allows readers to form predictive inferences to process the text, and which helps explain the variance of their responses (which is related to their working memory capacity). One of the major leitmotivs of Lost in the Funhouse is the reader’s participation in the act of textual creation (of authoring). Working memory, then, in that it is an integral part of the processing of syntax, prosody, and anaphoric references, is an important factor that contributes to readers’ involvement with and appreciation of Barth’s games. This response will in turn lead them to decide whether or not they wish to continue to co-pilot the rollercoaster of a fiction the author has created for them.

5 “Se verá realmente lo nunca visto”: Subversions of Formal Logic in Macedonio Fernández’s Museo de la novela de la Eterna

The bulk of Macedonio Fernández’s work was published after he passed away in 1952. Although the Argentinian was one of the founding figures of the vanguardista movement in Buenos Aires at the dawn of the twentieth century, his ideas and writings were also very much at the fringes of the style. Macedonio was associated with the Florida group which put out the publication Martin Fierro, and he collaborated on the journal Proa as well. In 1928, his first novel, No toda es vigilia - La de los ojos abiertos appeared in print, and later, in both 1929 and

188 Fernández, El Museo de la novela de la Eterna, 42 (see chap. 1, n. 127).


1944, *Papeles de Recienvenido*, a story of a newcomer to the literary world who is dissatisfied with its conventions, was also published, though Macedonio did not himself compile and organize the text. The two works were reprinted after Macedonio’s death in 1966 and 1967 respectively, but it is the publication of *Museo de la novela de la Eterna* in 1967 by his son Adolfo de Obieta that won the author wider critical appeal. By the late 1960s, Macedonio had already been publicly admired and mythologized by fellow Argentinian authors such as Jorge Luis Borges, but little was actually known about the man. An early 1976 review of the author by Pietro Ferrua confesses, “The exegesis of Macedonio Fernández is still very scarce, and mostly based on Borges’s portraits. At this point, it is impossible to accomplish a scholarly research on his actual role in Argentinian letters.” Over the years, as Macedonio’s lifetime’s work continued to be published—including *Adriana Buenos Aires: Última novela mala* in 1974 in *Obras completas*—further investigations began to reveal more information about his life and oeuvre.

In many ways, it is perhaps fitting that Macedonio began to be widely recognized only posthumously. On the one hand, he espoused a philosophy of absence, and likely would have revelled in the ambiguity surrounding his life and his resulting mythological status. According to Todd S. Garth, Macedonio’s literary contributions seek to “create absences more essential and enduring than any presence,” and what pervades his work is the idea of mythology, whereby historical figures are “in a very real sense, alive, evolving, and exerting great power on our

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192 A second edition of *Museo* was published in 1975 by Ediciones Corregidor, with notes by de Obieta, and another in 1982 by Biblioteca Ayacucho with a selection and prologue from César Fernández Moreno.


concrete world.” It is appropriate, then, that Macedonio be in the end himself mythologized. And, on the other hand, it is also true that the experimental nature of Macedonio’s work may not have been as well received had it surfaced before it did in the late 1960s. As Nélida Salvador suggests,

Macedonio’s works may have been subject to the same fate as those of Arlt and Marechal had they been published earlier, Salvador says. Instead, the late 1960s welcomed his texts, which fit uncannily well with poststructuralist thought. Critics often point to the affinities between the views of Macedonio and those of Roland Barthes and Jacques Derrida. Alicia Borinsky, for example, writes, “Pienso que hay en Macedonio una teoría del lenguaje con momentos de articulación que evocan intentos posteriores de Blanchot, Derrida y Barthes pero con un sesgo individual muy distinto.” Noé Jitrik also offers a critical analysis of Museo that shows how Macedonio’s “Estética de la Novela” resonates with the poststructuralist notion of “text.” He writes, “[S]u ‘poética del pensar’ es ante todo la búsqueda de un punto en el que estilo—que ahora más propiamente llamaremos ‘escritura’—y pensamiento, se van organizando.”

References


198 In a footnote, Jitrik notes that the term “escritura” is Barthes’s in Le degré zéro de l’écriture. Noé Jitrik, “La ‘novela futura’ de Macedonio Fernández,” in Museo de la novela de la Eterna. Edición Crítica, by Macedonio
Macedonio may have written in the earlier half of the twentieth century, but his works, in their aesthetic, in their conception of the role of the reader, and in their time of reception, were in dialogue as much with the epistemology that came after his time as with that of his day. *Museo de la novela de la Eterna*, although it is undoubtedly an artefact from the time of the *vanguardistas*, in that it was not only first published in the late 1960s but also welcomed and highly read then and thereafter, is a text that, in terms of reader response, in many ways belongs to this latter era. It is for these reasons that it may be comfortably considered alongside other “boom” authors such as Julio Cortázar and authors of early postmodern works, such as John Barth and Thomas Pynchon.

Borges has famously called Macedonio a “metaphysical humourist.” Macedonio was a man of wit and innovation, and his experimental games certainly did not limit themselves to the pages of his novels. Born in Buenos Aires in 1974 (though he sometimes claimed to have been born in 1975), Macedonio studied law and practiced in Misiones, though he was eventually let go for not accusing anyone. He distanced himself from the profession, which, according to Lidia Díaz, he had never taken seriously in any case because he viewed his involvement in law as being an accomplice to the system. Macedonio is said to have later founded an anarcho-christian,

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Saint-Simonian community in Paraguay, which failed in 1897. A particularly memorable and rather revealing account of Macedonio, in which he ran for presidency in Argentina, was given by Borges. The tale is often repeated, but Ferrua nicely historicizes the story and points out where it may have been exaggerated. The more sober version of the story suggests that Macedonio attempted to convince his friends that he would run for President in 1927, and led a subliminal campaign whereby he left business cards bearing the singular name “Macedonio” all around Buenos Aires. Later, he flooded the city with similar cards inscribed with the name “Fernández” so that people would eventually make the association between the two, and, as Ferrua puts it, “wait for a new revelation” (134). Already, the idea of tasking the audience with the duty of making meaning arise out of an elliptical “gap”—a principle that pervades Macedonio’s literary texts—is evident. A similarly tame account of the story suggests that Macedonio, who really had no interest in becoming president (in fact, he never formally entered the race), planned to fill the city with crafty inventions “ideados especialmente para hacer la vida cada vez más insorportable,” such as swinging spittoons that would be impossible to reach, and uneven stairs that would disorient those climbing and descending them. Díaz explains that these inventions would unsettle the “Yo”—a principle that is also the backbone of Macedonio’s literary works. A still more radical version of the tale suggests that Macedonio would have saved a baby leaning out from a fifth floor window by juggling an orange and inciting him to jump to then catch him. Upon rescuing the child, Macedonio would have presented a business card with the complete name “Macedonio Fernández,” and the crowd, who suddenly would have made the connection with the previous enigmatic name cards, would have

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204 In many ways, the experiment—though it is not on the page—is in line with the Iserian “gap.”


roared “Macedonio Fernández is a hero, he will be President of the Republic!” As Ferrua points out, however, this latter anecdote is quite likely a Borgesian invention.

Yet another particularly enlightening window into Macedonio’s character, philosophical predisposition, and literary inclinations is his vision of a paperless novel, whose players are live individuals unaware that they are actors (at once characters and readers) in a literary enterprise in the making. The author’s work is minimal, the premise of the literary work is skeletal, and the audience has the responsibility of creating the story and making it mean in the most real of senses. In this game, Macedonio would suggest sending prostitutes to some of his well-to-do and unassuming friends, and declare that the ensuing dialogues held the status of a literary object. As Naomi Linstrom puts it, the goal of this activity would be to “create a novel without giving the reader a written text on which he might rely.” The role of the reader is a particularly important theme in Macedonio’s work, and this example shows to what extent he was on par with poststructuralist thought in regards to the authoring duties of the audience. What is also evident from this amusing anecdote is the way in which Macedonio liked to blur the lines not just between author and reader, but also between fiction and reality. Museo de la novela de la Eterna is ripe with such deconstructed dichotomies.

The task of devising a new kind of literary work, one in which the reader would participate in its production, preoccupied Macedonio for much of his life. In fact, he would constantly announce the coming of his Eternal novel. The work that is thought to be his lifetime’s ambition,

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210 Camblong writes, “Es verídico que Macedonio anunciaba su novela constantemente, tanto en publicaciones como en su correspondencia y en sus conversaciones.” Ana Camblong, in Museo de la novela de la Eterna. Edición Crítica, by Macedonio Fernández, ed. Ana Camblong and Adolfo de Obieta (Nanterre, France: ALLCA XX;
*Museo de la novela de la Eterna*, was finally published in 1967 (by publisher Centro Editor de América Latina) after his son Adolfo de Obieta compiled it from his father’s “trunkfuls of chaotic papers.” True to the open nature of the “text,” Macedonio never organized nor definitively edited the notes, and he spent his lifetime constantly adding to and revising the pile. *Museo* was meant to be paired with *Adriana Buenos Aires: Última novela mala*, which, in the end, was published slightly later in 1974. A second edition of *Museo de la novela de la Eterna* by the publishing house Ediciones Corregidor (which includes notes from de Obieta) appeared in 1975 with the same preface as *Adriana Buenos Aires*, and a new subtitle—Primera novela buena—to complement that latter’s title. *Museo* has since appeared in several other editions, including a 1982 version published by Biblioteca Ayacucho, with a selection by and prologue from César Fernández Moreno, and a 1993 edition by Colección Archivos edited by Ana Camblong and de Obieta. This latter edition is the most complete, offering readers not just the edited text, but variations of it found in Macedonio’s many manuscripts.

*Adriana Buenos Aires*, a parody of the conventional, realist novel, finds its experimental other in *Museo*. The duo, examples of the Barthesian “work” and “text” avant la lettre, go hand in hand, and together, they illustrate Macedonio’s philosophy on reading and writing. Macedonio’s aim is to make audiences work—to creatively author the text and to put as much effort into it as the

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211 Jo Anne Engelbert, *Macedonio: Selected Writings in Translation* (Fort Worth: Latitudes Press, 1984), 6. According to Camblong, Macedonio was more interested in writing than in publishing, and accordingly, left hundreds of pages, many indecipherable, after his death: “Este hombre que nació pensador y escritor, leal a ese llamado toda su vida, sin decaer jamás su vocación de pensar-escribir, fue sumamente parco en publicar. Quedan centenares de páginas inéditas, muchas sin descifrar por su taquigrafía personal; cuadernos enteros de anotaciones, además de lo que se habrá escurrido en su zarandeada peregrinación en lo absoluto y en lo relativo. Muchísimos manuscritos y poquísimos libros. Se siente que lo que le preocupaba era proseguir privadamente, quiero decir en su propia mente, el desarrollo de su pensamiento metafísico, trabajar sus observaciones en trámite; no le interesaba empezar por escribir sin ideas examinadas al trasluz. Publicar era en él algo más bien eventual, que puede ser o no ser.” Camblong, *MNE*, xxv-xxvi.


213 Macedonio named the first version of the work *Isolina Buenos Aires*, and renamed it only in 1938 when he revised it. Engelbert, “El proyecto narrativo de Macedonio,” 385 (see chap. 2, n. 191).
actual author scribbling it onto the page. Accordingly, while Adriana more or less follows the conventions of traditional, realist fiction, Museo presents its readers with blatant ellipses, incomplete character sketches, and systematic inconsistencies for them to disentangle. In a note to the Camblong edition of Museo, de Obieta offers the following commentary (and perhaps warning to readers) about the text’s inaccessibility:

Macedonio Fernández es un autor difícil, de oscura claridad o de claridad oscura, como se prefiera; su obra, como su persona no son fáciles. La dificultad consiste en la compleja pluralidad de elementos constitutivos. Podría decirse que era pluridimensional y pluridireccional, aspectos alguna vez emparentados con el caos [. . . .] Podría decir: enemigo de la dificultades cultivadas, amigo de las naturales, para ejercitarse en abarcar. Los conflictos conceptuales o fácticos estimulaban su trabajo intelectual o práctico, lo mantenían entrenado, a prueba su capacidad de intelección. Tanto como le repugnaba la Facilidad.

A imagen suya, su propia obra exige atención despabilada, sensibilidad porosa. Su obra es compleja por los elementos que la integran y las direcciones a que apunta. Dificultad no sólo para encasillarla dentro de los “géneros” tradicionales, sino para captar intenciones o valorarla. Macedonio’s objective is not simply to play with audiences but to educate them, to teach them to read thoughtfully rather than to simply absorb the work passively. Accordingly, Museo de la novela de la Eterna is not an easy read. Composed of fifty-six prologues, the book delays the presentation of the novel, and, once readers finally reach this part of the work (which, proportionally, is about the length of the series of prologues), they find an incomplete story whose possible world is marked by a plethora of irreconcilable gaps. In this latter section of Museo, the main character, El Presidente—an author—invites a handful of characters to his

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214 Naomi Lindstrom, however, points out where Adriana Buenos Aires sometimes diverges from this conventional structure and is thus more open that it would seem, presenting readers with subversions such as “the incompletely elaborated text” that instructs readers to improvise, and “startling absenses” like the omission of an explanation for the subtitle. Naomi Lindstrom, Macedonio Fernández (Lincoln, Nebraska: Society of Spanish and Spanish-American Studies, 1981), 41, 43.

ranch (estancia), called La Novela, where they all discuss the unfolding of the novel the Presidente is writing, and, in a completely self-referential fashion, the novel that is also before the reader. Existentialist themes, and the blurring of the line between fiction and reality are the most popular topics for the group. Plot also gives way to the author’s and the characters’ self-referential concerns for the readers’ interest, and lengthy reflections and ruminations ensue until the very end of the anti-climactic novel. Macedonio knows his novel is a difficult one to read. With a certain sprezzatura, he declares that the novel is of “eminente frangollo”—made quickly and poorly—and says that it will consequently elicit strong and varied responses from his reading public. While some readers will delight in its incoherencies, others will throw it to the floor angrily: “Esta será la novela que más veces habrá sido arrojada con violencia al suelo, y otras tantas recogida con avidez” (9). In many ways, Macedonio is not wrong. Such an unconventional novel garners precisely this kind of response.

Before his death in the early 1950s, Macedonio was indeed read by his contemporaries, though not widely. It is not until he began to align himself with the ultraísta group, of which Borges was a member, that his work began to gain serious critical attention. Naomi Lindstrom suggests that the reason that Macedonio was not widely read in these early years is that he was “too much ahead of his time” (12). She writes, “Readers who lacked the experience of similar works had nothing with which they could compare the inventive author’s experimentations, and did not know how to respond to it” (12). With the publication of Museo in the late 1960s, Macedonio’s fame grew. Seeing as how Macedonio’s work was not immediately translated into a language other than Spanish, most of the commentary on it originates from Latin American critics, though the author has also earned some attention from North American critics, and French, German and Italian critics, as well. By the 1980s, the author had won considerable popularity among academic circles, and his works—especially Museo—began to be the focus of

216 When his book Una novela que comienza was first published in 1941, critics noted its technical innovations but did not entirely flush out the details of Macedonio’s reformatory project. A second edition published in 1944 encouraged critics to examine the work in the context of Macedonio’s earlier texts, such as No toda es vigilia: la de los ojos abiertos, published in 1928. Salvador, “Lectura crítica y recepción de la obra,” 364-65.


a number of dissertations. Selections from Macedonio’s *Museo* were translated into English and published in 1984 in a collection entitled *Macedonio: Selected Writings in Translation* edited by Jo Anne Engelbert, and a complete translation by Margaret Schwartz was released in early 2010.

As compared to the canonical Derrida, Cortázar, Pynchon and Barth, Macedonio has had much less written about him, in both academic and popular contexts. The evidence of a popular response, in fact—in the form of online commentary, available for analysis—is scarce, as the work appears to be taken up primarily within the classroom. Nevertheless, there are several important sources of reader response to Macedonio’s works, including *Museo*, even if they represent only the more academic component of the response. One particular source of information that incidentally very strongly resembles “online” responses (such as marginalia inserted into the text) is the series of footnotes that appears in the critical editions of the text. The footnotes that appear in Camblong’s 1993 edition of the *Museo* are not only informative and detailed, but, because they are so numerous and pointed, they often offer precise feedback—however removed from the initial bodily response—as to Camblong’s response to the text. Camblong may be speaking in generalities, but she often astutely pinpoints precisely where difficulties arise in the text—syntactical, semantic, logical, or otherwise. Whether or not her comments apply to all readers, what is certain is that they apply to her own experiences. In my analysis of the text, then, I will rely on many of Camblong’s observations, especially because of their in-line nature in the text.

At the microstructural level, *Museo* exhibits many subversions of traditional forms that could present difficulties for readers. A brief review of these and the cognitive realities they underline

\[\text{Engelbert says that some of Macedonio’s work has also been translated into French, German, and Italian.} \]
\[\text{Engelbert, *Macedonio: Selected Writings in Translation*, 1.} \]


\[\text{This absence of readily accessible commentary online may also be owing to the fact that the work had not been translated in full into English until recently, and many of the widely-used literature and book sales web forums are run primarily in English.} \]
here will both provide insight into Macedonio’s own brand of literary experimentation and set the stage for the ensuing analysis of the games that Macedonio plays with logic proper.\textsuperscript{222} The overall play of the text is not lost on Lidia Díaz, who contextualizes it in Macedonio’s wish to break with referentiality. She notes the effect of Macedonio’s non-conventional prose may have on readers:

Si las palabras dejan de ser instrumentos, es lícito para Macedonio violar la normativa de la lingüística tradicional, para desequilibrar la sucesión lógica del pensamiento y lograr un efecto desconcertante; puede entonces alterar las reglas del orden sintáctico, presentar “arbitrariedades” en la puntuación, omitir artículos y burlarse del valor de los preceptos gramaticales.\textsuperscript{223}

Macedonio toys with linguistic norms in order destabilize logic and to achieve a disconcerting effect, Díaz writes. Much of this de-automation may occur as a result of syntactical irregularities in the text. As Camblong points out, these particularities sometimes imbue Macedonio’s prose with an almost poetic quality; “La defectuosa sintaxis desemboca en una ambigüedad que, paradójicamente, la acerca al texto poético,” she says (83nB).\textsuperscript{224} Games with syntax, however, do not always result in poetry. At times, a lack of a sense of cohesion seems to simply reflect a speaker’s excitement and the non-linearity of the thought process, rather than be intended to

\textsuperscript{222} Some of the cognitive principles highlighted, moreover, will be explored further in the analysis of Derrida’s works in Chapter 4.

\textsuperscript{223} Díaz, “La Estética de Macedonio Fernández y la Vanguardia Argentina,” 506.

\textsuperscript{224} For example, Macedonio offers readers the following sentence, which presents an especially complex punctuation pattern: “No creo que la Metafísica sea el placer directo de una explicación: es un trabajo que tiene el placer reflejo de una perspectiva de poder; es un poder lo que se busca; un poder director del amor: que éste pueda ser causa inmediata (pues, si mediata, toda virtud y aspiración se frustraría porque podrían frustrarse los eslabones intermedios) en el mundo mecánico, en el mundo de apariencia material, en el cual está la apariencia material: cuerpo de la amada; sólo como causa inmediata, la sola aparición en una psique de un anhelo, deseo, traería la presencia total (visual, táctil, audible, térmica) de la amada a cualquier presente del tiempo, al mismo presente en que está ese deseo, y con la presencia la información-noticia del estado actual en una sensibilidad.” Camblong notes the irregular rhythm of the passage and its emotional appeal to readers: “En este párrafo se aprecia la complejidad idiosincrática de la prosa macedoniana: extensos periodos que encadenan construcciones pautadas por abundante puntuación (reiteración de dos puntos, punto y coma, múltiples comas, uso insistente de paréntesis), ordenamientos sintácticos que le confieren al discurso un ritmo entrecortado, irregular, enrarecido. Tal ‘extravagancia’ responde tanto a la necesidad impuesta por un pensamiento que exige redefinir palabras o construcciones corrientes, cuanto a la concepción estética de la prosa destinada a ‘desacomodar interiores’ y provocar conmociones en el lector. Fernández, Museo de la novela de la Eterna. Edición Crítica, 33 (see chap. 1, n. 127); Camblong, MNE, 33nC.
incite any sense of deeper reflection of a metaphysical kind in readers. For example, when Macedonio’s author-character speaks up in chapter five, he opens four parentheses and closes just one. The passage could be a parody of the limits of the written word—not developed enough to capture the flow, movement, and spontaneity of the spoken word perfectly—but, as a written artefact, it can be disconcerting to readers who hear not the voice of the speaker, and have instead before them just this punctuation—markers of illocutionary force—to indicate the intended prosody of the text. The pace of their reading is inevitably affected by these markers. Other forms of syntactic distortions in Macedonio’s text are particular to the Spanish language, which generally follows a subject + verb + complement structure. For example, as Camblong notes, the following sentence is a difficult one to read: “El acto no instintivo de Piedad, reteniéndose el lúcido discernimiento de pluralidad, sin confusión del Otro con el Nosotros, es la finalidad del Haber Algo y es lo sólo ético: ser otro todavía en el hacerlo todo por un otro” (5).

The critic comments, “El hipérbaton en la construcción oracional se refuerza con la distribución espacial y la inserción parentética, logrando un efecto de extrañeza y dificultad en la comprensión del texto” (5nD). The play with conventional word order, here, renders the text difficult to read, Camblong says, especially when it is combined with a parenthetical reference. Such idiosyncrasies contribute to what Camblong calls the “lenguaje macedoniano,” and challenge readers as they make their way through the pages of the novel.225

Interestingly, readers will not all pick up on Macedonio’s playful anomalies equally. Some of the inconsistencies in Museo de la novela de la Eterna—it should be noted—seem far less artistically-motivated than others, and in fact, may actually be just plain oversights. For example, in the second chapter of the novel, one of the characters—Simple—is misnamed. Simple appears as Andaluz, which is probably his original name. Camblong explains, “Al omitirse la corrección, aparece la denominación ‘Andaluz’, primigenio nombre de ‘Simple’ (143nE). Of course, given the open and thus supposedly unpolished nature of Macedonio’s text, these imperfections work well within the established framework of the novel. Some readers may not even notice the error, especially if it were not for Camblong’s explanatory footnote. Cognitively speaking, researchers have found that people tend not to process language in its

225 Camblong offers a comprehensive list of Macedonio’s stylistic innovations in the introductory pages of her edition of Museo. Camblong, MNE, lxx-lxiii.
entirety. According to research by Brenda Hannon and Meredyth Daneman, a number of people will not notice impostor words in a statement, a phenomenon called “semantic illusion.”\(^{226}\) Erickson and Mattson found that, when asked “How many animals of each kind did Moses take on the ark?,” as many as eighty per cent of respondents answer “two,” failing to notice that it was not Moses but Noah who took animals with him onto the ark.\(^{227}\) Erickson and Mattson also discovered that a good deal of respondents, when asked “What passenger liner was tragically sunk by an iceberg in the Pacific Ocean?” erroneously answer “The Titanic,” though the Titanic sank in the Atlantic—not the Pacific—Ocean. The researchers reason that there may be two mechanisms that account for the individual differences to this kind of semantic illusion: an individual’s ability to access prior knowledge in long-term memory, and his or her ability to simultaneously process and store information in working memory (and to thus ignore the surrounding sentential context). Significantly, Hannon and Daneman note that “partial processing may be a common strategy” and that “the prevalence of semantic illusions suggest that the comprehension system is not scrupulous about processing and integrating every word into the representation” (459). What this means for Macedonio’s text is that not all of his artistic innovations are necessarily fully processed by readers, so that only a selection will ever succeed in destabilizing their reading. Although the Simple/Andaluz accident is not necessarily a “semantic illusion” in the strictest sense of the term, it is still significant in that readers may not notice the oversight at all. What is inevitably also at play in considering the degree to which semantic inconsistencies affect the reading process and the mental representation of the text is the degree to which readers may grow accustomed to the textual deformations. In other words, readers should eventually grow accustomed to the “lenguage macedoniano” and become progressively less startled by its slanted use of the Spanish language.

While such sentence-level irregularities are plentiful within *Museo de la novela de la Eterna*, what is particularly interesting to examine from a reader response point of view in the text is the logical play featured within it. Díaz notes Macedonio’s propensity for playing with nonsensical


structures and the readers’ sense of what is rationally sound. She writes, “Macedonio explora entonces un procedimiento artístico que perturbe y trastorne nuestros grandes principios de razón y nuestra estabilidad intelectual.” 228 Indeed, Macedonio’s text is ripe with ambiguity, as the author toys with the rules of time, space, and causality. The indeterminacy of Macedonio’s text intensifies with the presence of oxymorons and paradoxes—referentially-ambivalent constructions whose precise meaning oscillates between two poles and is sometimes, if not entirely rationally impossible, at least logically inconclusive. As Camblong notes, Macedonio toys with referentiality through carefully constructed paradoxes that pit dichotomies like time and space, and presence and absence against each other:

El chiste macedoniano, como su novela, repudia la referencialidad; las variaciones de los motivos remiten a juegos lógicos-ilógicos, a categorías que entrecruzan en el sintagma relaciones anómalas, imprevisibles, montadas sobre la contradicción y la paradoja: abstracto-concreto (‘revendedores de su ausencia’); tiempo-espacio (‘su “jejos” no dura nada’); presencia-ausencia (‘su ausencia. Es la presencia más ocupadora’). (30nB)

These paradoxes are part of the Macedoniano universe and are not meant to be resolved.229 Some of the most privileged dichotomies Camblong identifies—in addition to that of presence/absence and time/space—include endings/beginnings, continuity/discontinuity, fiction/reality and being/not-being. Camblong points out that, in a very Derridian fashion, it is the difference between these contradictory terms that Macedonio wishes to highlight and to explore. She says (regarding the beginning/ending dichotomy), “Si la pregunta es ¿qué es empezar? se clava el centro de la cuestión en la diferencia” and cites Macedonio who writes, “Otra verdad de arte es venerar las Diferencias antes que ser fácil en las Semejanzas” (47nC). In his own way, Macedonio praises difference and is preoccupied with “deconstructing” traditional binary structures, setting opposites against each other and exploring the creative space that is generated from the clash. This game naturally has cognitive implications. As Héctor Brioso Santos has noted, “Como sucede en otros géneros de lo absurdo, tales como creaciones de Lewis

228 Díaz, “La estética de Macedonio Fernández y la vanguardia argentina,” 507.

229 Contradictory juxtaposition like that of love and friendship, for instance, Camblong points out, “no se resuelven, se presentan y permanecen generando dolor, diálogo, arte, etc.” (142nD).
Carroll o Samuel Beckett, el espectador asaltado por las paradojas se pierde en ellas.”

Readers can get lost within the upturned logic of the paradox, a sensation that Brioso (like others), describes as a vertigo “ante la lógica de lo imposible, ante la nada que reivindica una precaria pero amenazadora existencia lógica” (177). Entertaining or frightening, the game of indeterminacy that Macedonio plays certainly produces a marked response in readers.

There has been much research performed in the cognitive sciences on ambiguity and inference generation—studies that can be used to better understand the nature and effect of the narrative and logical gaps that Macedonio urges his readers to entertain (in other words, the way in which he toys with the conventional rules of reasoning). While the topic of inference generation has been widely and variously studied in the cognitive sciences, here, the theme will be taken up specifically in terms of logic and problem-solving. There is likely not a unitary system for logical reasoning, as Vinod Goel, who has written extensively on the neurological basis of deductive reasoning, has concluded; instead, evidence points to a fractioned system that is “dynamically reconfigured in response to specific task and environmental cues,” (Virtue 111, Goel 435).

Markus Bühner, Stephan Kröner, and Matthias Ziegler also point out that although visuo-spatial intelligence is involved in problem-solving, it is particularly those aspects that pertain to working memory capacity that come into play. Working memory capacity, then, determined by the number and size of the chunks one can store in the mind, would seem to be a factor in determining individual differences in agility with problem-solving of a logical nature. What this means for Macedonio’s text, then, is that readers would naturally be expected to respond differently to the author’s play with rules of logic, with the size of their working memory capacity impacting the ease with which they may grasp the components of his games.


Indeterminacy has also been studied at the neuroanatomical level, and research has helped shed light on how games with logic—the very kind that Macedonio explores—can affect readers. Considerable attention has been given to how the right and left hemisphere are involved in the processing of logical leaps and gaps. Ira A. Noveck, Vinod Goel and Kathleen W. Smith note the role of the left hemisphere in solving propositional syllogisms, especially those related to Aristotelian forms of conditional reasoning (Modus Ponens (If p then q; p//q) and Modus Tollens (If p then q; not-q//not-p). \(^{233}\) Interestingly, in keeping with predictions by Vinod Goel and R. J. Dolan, the researchers find that subjects process arbitrary and realistic syllogisms differently. \(^{234}\) When subjects reason with arbitrary material (*No A are B*), activity is elicited in the parietal-frontal pathway, but when the statements are realistic (*No elephants are reptiles*), although they are formally equivalent to the arbitrary ones, they elicit activity in the temporal frontal system, linked to language areas. Noveck, Goel and Smith reason that the difference in neurological activity can be explained by one’s engagement with the statement. They write:

> When materials become more meaningful (i.e., they more closely resemble conversational exchanges) they prompt a listener to engage in a wider array of inferences, making the logical inference appear less prominent. The parietal activity identified here can be said to work as part of a more general purpose system, one whose importance is potentially superseded as more specific information becomes available. (621).

Noveck, Goel and Smith also note that both the right and the left hemispheres are engaged in problem-solving under different conditions. “Semantically meaningful materials” elicit activity in the temporal and frontal lobe regions of the left hemisphere, whereas syllogisms with implausible conclusions (e.g., *Some serial killers are not mean*) engage the right hemisphere (614). It would appear that the latter is recruited in the resolution of conflict. Significantly, the level of difficulty of an inference form also has a significant impact on how it is processed. Modus Tollens are more difficult to carry out than Modus Ponens, which involve four different


steps in reasoning. Generally, at least ninety per cent of respondents answer a Modus Ponens correctly, whereas only 60 answer a Modus Tollens correctly. The extra steps mean that a more agile working memory is required to temporarily store suppositions (and Modus Tollens also elicits more activity in the parietal frontal pathway). Interestingly, in Noveck, Goel and Smith’s experiment, *Reductio ad Absurdum* (the fourth step of the Modus Tollens in which the initial supposition is eliminated) did not elicit activity that was different from the baseline condition in which participants were given a propositional syllogism with a trivially true conclusion (e.g., *If there is a black rectangle then there is a blue circle. There is a red triangle.*). To explain this surprising finding, the researchers considered the nature of the experiment, which asked subjects simply to say “Inconclusive” or “Can’t tell” when they were faced with such an illogical proposition. The researchers propose that,

> participants who respond correctly to this problem do so because a correct response is an indication that no further processing is required on the critical concluding sentence; in effect, there is no more reasoning to do once it is recognized that the two premises prompt no valid inferences. All that is left to do is to press the “Inconclusive” button. (620)

These results would seem to allow and account for the reality that when readers arrive at formally inconclusive puzzles in a text, rather than toil away at the incoherency, they often move along with the reading.

To summarize these findings, the ambiguity that is woven into a text by an author has a profound neurological reality. Deductive reasoning calls especially on the left hemisphere. Working memory is involved—as it always is in any reading task—but logical play in a text would seem to accord a special importance to the visuo-spatial sketchpad of working memory. The agility with which it is dealt, then, depends on individual characteristics, including the ability to handle several different chunks of information at once (which may contain more or less information depending on one’s level of expertise). Significantly, the gap in the text and the plausibility of a logical leap appear to affect the way in which it is processed, and the decision that an ambiguity is irresolvable marks an end to the reasoning processes involved in its deciphering. What this means for *Museo de la novela de la Eterna*, then, is that not only would readers respond differently to the ambiguity in the text within the text based on their individual working memory capacity (especially that pertaining to the visuo-spatial sketchpad), but that many would also pass
over some of Macedonio’s logically-problematic constructions with more rapidity than what may seem to be warranted by the profundity implied by the formal inconclusivity of the creations—the irresolvability of the gap that he crafts. In fact, it is this very inconclusivity that allows them to more forward with the reading rather easily.

One of the most prominent puzzles in Macedonio’s *Museo*—worth examining in more detail for the insights it can shed on how readers may conceptualize logical games—is the deconstructed dichotomy of being/not being. Macedonio’s play has decidedly Cartesian implications. The author himself lays these out in a lengthy passage that equates existing with not existing through the manipulation of Descartes *Cogito ergo sum*:

Quien experimenta por un momento el estado de creencia de no existir y luego vuelve al estado de creencia de existir, comprenderá para siempre que todo el contenido de la verbalización o noción ‘no ser’ es la creencia de no ser. El ‘yo no existo’ del cual debió partir la metafísica de Descartes en sustitución de su lamentable ‘yo existo’; no se puede creer que no se existe, sin existir. En suma: el existir es igualmente frecuentado por la creencia del no existir como por la creencia de existir. Quien cree, existe, aunque su creer que no existe y alternativamente creer que existe. ‘Yo pienso’ nunca tuvo consecuencias sino inocentes (37)

Macedonio carries out this game of “being” and “not being” throughout his novel through his characters, some of whom, being but fictionally real and at the mercy of the author who has created them (el Presidente, but also Macedonio), wish nothing more than to be actually real. For example, main character Quizagenio desires to exist in reality. In one of the many prologues, he insists to Dulce-Persona that in that particular moment, they are not characters in someone else’s tale, but real: “Esta vez somos, no somos personajes” he insists (152). Paradoxically, though, as Camblong points out, the means by which Quizagenio hopes to confirm this “being” is through the authority of the subtitle—the very fictional framework that confines him: “Véase que el personaje para refrendar sus afirmaciones remite a la autoridad del título; la insistencia en afirmar su ‘ser real,’ paradojalmente resalta su condición de ‘ser ficcional,’” she writes (152nB). His affirmation of being comes only through the acknowledgement of not being. Other characters, however, would be happy just to make it into the fiction itself, and to exist therein. Federico, for example, dreams that the Presidente has written him into his novel—and with the very mention of this dream, he in effect becomes fictionally real. Nicolasa and Pasamontes have similar fates, although they are not discussed in
as much detail. They make it into Museo only through being negated within and denied entry into it. The author writes, “no figuran,” but comically adds, “solicitaron someterse a la maniobra de personajes para quedar de meritorios de otra novela” (136). The character el No-Existente Caballero is yet another logical anomaly in the text, whose very name relates his reality of being and not being. Appropriately, the reception of his presence at the estancia is quite peculiar: although the other characters always observe him, they can only confirm with certainty after much time that he indeed lives with them (141). Camblong nicely captures the offsetting nature of this game of being and not being, framing the reader response within the context of Russian formalist ostranenie and Brechtian Verfremdungseffekt:

Esta exigencia en la actividad lectora condice con la autonomía del arte, con la lógica imaginaria del mundo ficcional y con otra forma de operar la discontinuidad en la estética macedoniana. La propuesta puede ser comparada con el ‘extrañamiento’ planteado por los formalistas rusos: los procedimientos ponen de relieve el artificial del discurso artístico, provocando extrañamiento en la recepción (sabe que está frente a un hecho artístico, modifica su percepción y conocimiento del objeto). También hay convergencia con la ‘distanciación’ brechtiana, en los aspectos estéticos, pero no en los políticos, ausentes en Macedonio. (37nB)

Camblong says that such instances of being/not being in the text are defamiliarizing in the Russian formalist sense, or cause for estrangement in the Brechtian sense. The Macedonian text is full of negations, from characters that only half exist to wordy double negative constructions such as “No somos irreales” and “No faltan obras más difíciles que la mía” that put forth an affirmative reality without ever stating it outright (207, 26). Flora H. Schiminovich notes, “Macedonio es un maestro del juego, capaz de producir una sucesión de negaciones que se reflejan unas en otras, subordinándose e interactuando en un verdadero rompecabezas.” Naturally, a cognitive reality must underpin the sensation of “defamiliarization” or “estrangement” that Camblong identifies as resulting from these negated ideas.

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235 As Camblong notes, “El lector ya cuenta con estos personajes, puesto que fueron presentados en los prólogos; además ‘figuran’ en la ficción al ser mencionados en el mismo discurso que niega dicha figuración” (136nB).

There is much at play at the conceptual level in this game of negatives. First of all, negated statements seem to entail greater effort on the part of readers. In a study, Manuel de Vega, Mabel Urrutia and Bernardo Riffo found that readers are “especially sensitive” to counterfactual sentences (e.g., *If Mary had won the lottery, she would have bought a Mercedes car*), which the researchers deem to have an “unreal” status because they refer “to a past event that did not happen and to the equally unreal consequence of such event.” 237 Counterfactual statements, in fact, appear to have a dual nature, whereby readers contemplate both the factual and the counterfactual interpretation of the event in question. In other words, “the ‘as if’ interpretation and the negated interpretation of counterfactual events coexist” (1412). However, the factual meaning is soon suppressed, and readers’ attention returns to the previous events in the story (which the counterfactual statement has not updated). Negated terms seem to entail the same kind of processing. Uri Hasson and Sam Glucksberg found that negated assertions (such as *this lawyer is not a shark*) appear to be initially represented in the mind as affirmations, and it is only between 500 ms and 1000 ms that the negation takes effect. 238 After 1000 ms, there is finally a clear distinction between the two representations (1027). Two distinct studies that offer evidence for the experiential view of cognition (i.e., that knowledge is embodied) support these conclusions. First, Barbara Kaup *et al.* found that subjects create a mental simulation of that which is being negated. 239 Participants were given the sentence *There was no eagle in the sky*, and were faster at recognizing a picture in which the target entity (the eagle) matched rather than mismatched that in the negated statement. As the researchers put it, “It seems that comprehending a negative sentence requires comprehending what it is that is being negated” (986). Similarly, Barbara Kaup, Jana Lüdtke and Rolf A. Zwaan found that in a self-paced reading experiment, after 750 ms, subjects were faster at identifying and naming a target entity that matched affirmative sentences over negative ones (e.g., identifying an image of a closed

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The door when presented with the sentences *The door was closed* and *The door was not open*). However, after 1,500 ms, they were faster at identifying an image that matched the actual situation of the negated statement (a closed door) than the negated situation (open door). The researchers determined that the representational process for affirmative and negative sentences is different. It would seem that “[i]n the affirmative versions comprehenders represent only the closed door. In the negative versions, comprehenders represent both, the open and the closed door, whereby they first focus their attention on the open door and then focus attention on the closed door” (1043). In essence, as the authors of the study concisely conclude, “[a] door that is not open is eventually mentally closed” (1048). Inevitably, negated statements involve certain processing costs and thus require more effort on the part of readers than affirmative ones to be understood. Presenting negated realities over and over again throughout his text, then, is one way in which Macedonio succeeds in making his readers work more laboriously to comprehend it.

The game of being/not being that Macedonio plays is a peculiar one, however, for both the affirmative and negative realities are stated outright. Whereas readers can normally cast aside one of the representations a negated statement generates in the first milliseconds after it is presented, readers of *Museo* are urged to continue to contemplate both possibilities. There are serious processing costs associated with this activity, as well as limits to the capacity to carry it out. Processes regulating attention are largely at stake. If visual experiments with reversible figures are in any way analogous to the kind of duality that Macedonio presents his readers (in the sense that both the visual and the linguistic dualities call on cognitive processes related to attention), it is significant that both interpretations of an ambiguous figure cannot be processed at once. A figure is either a vase of a pair of faces, a duck or a rabbit, a young or an old woman.240

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Viewers of the figures naturally oscillate between the two interpretations, and what the cognitive sciences are currently attempting to uncover are the mental processes that underlie this operation. Top-down processes which direct attention play an important role. Jürgen Kornmeier and Michael Bach have found that a P300 component correlated with perceptual reversals does not reflect the reversal per se, but the point at which top-down processes begin to “exert their influence.”  

C. Taddei-Ferretti et al. have also found that voluntary control (processing at a high-level) can overcome the effects a pattern’s focal zones or biases can have on perception-reversal timing, and Emily Balcetis and David Dunning report that motivation—individuals’ wishes or preferences—tends to influence their interpretation of a reversible figure.  

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This research on visual reversible figures fits well with studies on language comprehension that suggest that individuals have difficulty processing two competing meanings at once. Researchers have found that there are considerable processing costs associated with processing comparable events described as occurring simultaneously. In a study by Manuel de Vega et al., reading comprehension (in both English and Spanish, incidentally) was “markedly impaired”—meaning that reading times were longer and subjective coherence was recorded as being lower—when subjects were presented with sentences that described two actions that involved similar sensorimotor systems (e.g., chopping wood and painting a fence) happening at once (by way of the temporal adverb *while*), as compared to two actions that involved different systems (e.g., whistling a melody and painting a fence). The researchers reason that the results support an embodied view of language comprehension, whereby real-life, experiential constraints affect how language is processed. What the research by Manuel de Vega et al., suggests, then, is that what could be referred to as Macedonio’s “deconstructed dichotomies”—his games of being/not being (for example, characters that at once exist and do not exist within the fiction, and his overall subversions of Descartes’s *cogito ergo sum*)—which Camblong notes as creating a “defamiliarizing” effect in the Russian formalist sense, do in fact entail certain processing costs, lengthening the time of perception and impacting overall comprehension.

Interestingly, despite these costs, individuals seem to have an affinity for ambiguous or impossible figures—at least of the visual brand. In a 1979 study that measured the reported interestingness or pleasingness of visual illusions and the length of time subjects spent viewing ambiguous and unambiguous images, Richard M. Nicki, Paul Forestell, and Penelope Short found that subjects tend to prefer “unaltered ‘ambiguous’ figures, drawings of M. C. Escher and ‘impossible’ figures, characterized by greater complexity and uncertainty,” over altered versions of these stimuli. The oscillation between two mutually-exclusive interpretations, then, is in many contexts a desirable effect, one which raises the interest of the interpreter through intrigue and fascination. What is important to note, however, is that in both visual and in some linguistic


contexts, only one single interpretation can be contemplated at any given time. Macedonio’s
game of being and not being, then, where two formally mutually exclusive events compete for
the attention of the reader, while in many ways appealing, involves significant processing costs if
readers are to contemplate both interpretations in their entirety and seriously ponder over the
ramifications of each. Negation and implausibility can add a certain level of effort to the reading
process, but outright reversibility multiplies the complexity of the act of comprehension.
Pleasingness in this context may therefore be judged differently than it is with ambiguous visual
images.

As a critic, Camblong points out where difficulty lies in the text and generalizes about readers’
offline and online responses. Inevitably, not all readers will be affected in the same way, but
these notes provide insight into which textual games—from play with semantics and syntax to
logic—can trouble the reading process. It is then possible to study the cognitive principles that
likely come into play in reading the work. Museo presents readers with a variety of “gaps,” and
each engages the mind differently (from causal inferences to deductive reasoning, which can be
further sectioned into Modus Tollens- and Modus Ponens-type constructions). Some readers are
more troubled by such gaps than others, most notably for reasons related to working memory
(general working memory capacity, as well as constraints of the visual-spatial sketchpad).
Emotion also comes into play, both in how adept readers are at processing difficulty in the
moment, and in how they respond to it thereafter—with frustration or enjoyment. This is where
difficulty enacts its role as a “cultural gatekeeper,” marking the divide between those who do and
do not appreciate the experimentation. Interestingly, as studies on the pleasingness of visual
ambiguities suggest, a majority of people enjoy complexity. However, it should also be
mentioned that the examples studied by researchers Nicki, Forestell, and Short represent
undecidability on a small scale. Subjects may feel differently about such formal ambiguities
when they involve sitting with a novel that demands their utmost attention over a time frame that
can be measured not in milliseconds, but in hours and days, as in the case of Macedonio’s
Museo.

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While Rayuela, Gravity’s Rainbow, Lost in the Funhouse, and Museo de la novela de la Eterna
all experiment with a number of linguistic games at the microstructural level, each features a
particular type of play that can be highly enlightening in terms of the cognitive principles behind reader response. For example, while Pynchon generally abides by the traditional rules of orthography and syntax and concentrates instead on erudition in vocabulary as an experimental form, Cortázar and Barth both entertain subversions of spelling and grammar, with Cortázar focusing primarily on phonetics (with inventing Ispanoamerikano, and adding an “h” to certain words) and semantics (with Glíglico), and Barth giving considerable attention to syntactical anomalies (for example, broken off sentences) and related sentence-level disruptions (such as lost anaphoric references and spelled-out punctuation markers). Macedonio, much like the latter two, also explores a host of linguistic subversions, but the games with logic that he carries out (particularly with the dichotomy of being/not being) are especially noteworthy when looking at the processing of texts.

All of these novels have all been examined through the lenses of various reader response theories in the past, but an analysis with a focus on the psychological impacts of the texts as understood through the framework of the cognitive sciences can yield fresh new insights on the documents and on the reading process. Victor Schklosky’s notion of defamiliarization has long been the concept through which the effect of metafictional play has been interpreted, but as research in the cognitive sciences shows, the effects of linguistic games are varied. Subversions of conventional forms (the textual features that lead scholars to understand the works in question using the framework of the postmodern) can disturb the usual flow or automaticity of reading in a host of different ways, as eye movement tracking and neuroimaging reveals. Orthographic, semantic and syntactic games each have their own distinct impacts on the process of reading, and the variations of play at each of these levels has further unique effects. Importantly, the text does not dictate the effect, but only suggests it, as a number of external factors (ranging from mood, to age, to ambient lighting) also come into play.

Two important key concepts can be gleaned from the analysis of the microstructure of texts using cognitive research: first, textual features are processed at different points and in a set order (the timecourse of reading); and second, the neural structures underpinning the act of reading are all interrelated, as the activity calls on general cognitive processes. Orthography and morphology are two of the first elements taken into account in linguistic processing, with orthographic anomalies affecting reading at about 200 ms into processing. Semantic priming can begin at around 240 ms, and semantic integration generally takes place at around 400 ms.
Syntax follows at around 600 ms, though it is highly related to semantic information. Prosody is then taken into account at around 800 ms. Other aspects of reading can also be measured: the ambiguity of a speaker’s identity (which has some bearing on anaphoric referencing) registers around 200 to 300 ms into linguistic processing, and it is only between 500 ms and 1000 ms that the negation of a statement begins to take effect. Reading involves retrieving, selecting and encoding information, and working memory (along with its central executive, visuo-spatial sketchpad and phonological loop) is integral to these processes. Accordingly, no single part of the brain can be said to be responsible for processing an element of text in isolation; instead, various cortical and subcortical structures are involved at every level of processing.

While it is possible to generalize about these cognitive processes, it is also important to keep in mind that the research also acknowledges that readers respond differently to texts. For each data point given, outliers exist outside these averages which remind us that the same textual features will impact readers differently. Working memory is one of the most important factors contributing to the variance of responses among readers. It is essential to processes such as lexical retrieval, syntactic parsing, the detection of anaphoric references, and deductive reasoning (for the latter, the visuo-spatial sketchpad is of particular importance). As working memory capacity (defined in “chunks”) can vary from reader to reader, so too does the ease with which readers process a text. Difficulty is necessarily a relative notion. At the semantic level, the lexical quality hypothesis, which suggests that existing lexical knowledge about word form and meaning contributes to reading skill, also helps account for some of the variability among readers.

A common thread among the authors surveyed here is the “re-education” of readers through the de-automatization of their reading habits. Whether it is through orthographic, semantic, syntactic, or logical play, the authors all push the boundaries of conventions in order to highlight these very limits to readers. The balance, however, between the conventional and the subversive, is a delicate one. When authors tip the scales too far in the direction of the transgressive and create forms that lean on the side of the unreadable, they risk losing readers’ interest. This reality is especially evident in combing through the responses and commentaries of the generalist audience, which, thanks to the anonymity of online media, has less to lose in voicing this honesty as compared to published scholars. What is also worth noting in the response to linguistic play is the way in which readers automatically circumvent certain problematic elements when the
processing costs are too great. These inhibitory processes take place at every level. For example, in terms of orthography, a word legality test has readers avoid the processing of vowelless (illegal) non-words. At the lexical level, evidence of semantic illusions suggests that readers do not process language in its entirety. Similarly, readers also do not engage in anaphoric reference if the construction appears to be too incoherent. All of these processes are automatic and a natural part of the reading process. Importantly, they are not indicators that readers are not working hard enough with the text. The aforementioned “re-education” of readers, then, has its limits. What is more, to say that difficulty and the work it entails are inherently valuable, which, as Diepeveen has shown, defines the artistic current in which we find ourselves, blankets the issue. Difficulty as a “cultural gatekeeper” implies a certain taboo of shortcuts. Yet, the avoidance of work when the costs are perceived to outweigh the benefits is embedded in the very act of reading. It is simply the most efficient course of action, regardless of whether readers, owing to their own personal preferences, values, and prejudices, believe it to be the most rewarding or desirable. The rhetoric in the debate surrounding difficulty, then, needs to be re-envisioned, and it can certainly benefit from taking into account the cognitive factors at play in reading.
Chapter 3
Experimenting with Narrative: Macrostructure and Reader Response

1 Overview

Having discussed the historical contexts, main plotlines and general receptions of the novels in question in Chapter 2, I will turn directly in this chapter to the analysis of the macrostructures within these works. John Barth’s *Lost in the Funhouse*, Julio Cortázar’s *Rayuela*, Macedonio Fernández’s *El Museo de la novela de la Eterna*, and Thomas Pynchon’s *Gravity’s Rainbow* all feature extensive narrative games that may engage readers in a variety of ways. While the term “microstructure” refers to the local level of a text (to elements such as orthography, print conventions, and semantics, for instance), macrostructure is more global in scope and pertains to narrative structure. Much research has been conducted in the cognitive sciences on text comprehension at this level. Although there exist some differences between this discipline and contemporary literary theory regarding the use of certain key terms (text “comprehension” being the primary one, as it has undergone very long, effectively independent evolutions in either field), new studies on language and the brain, as well as the cognitive frameworks developed to try and explain their results, can shed much light on how difficulty works in literary texts. While the scientific literature tends not to focus specifically on the highly experimental variety of texts found in the sample of novels under analysis here (analyzing how straightforward texts are comprehended by readers is a large enough task for a field in many ways still in its infancy), the studies that have indeed been conducted over the years still offer a mass of pertinent information and plausible-sounding explanations for experimental results that have earned consensus among the community of scholars in the cognitive sciences.

The books analyzed in this chapter each offer macrostructural elements that explore different cognitive principles. Barth’s *Lost in the Funhouse*, by way of representation of the metafictional paradox with the figure of the Möbius strip, touches on the all-important notion of embodied cognition, a keystone to the understanding of language processing. Cortázar’s *Rayuela*, on the other hand, opens up the topics of inference generation and the role of the right hemisphere in
laying out two separate reading paths for its audience—a seemingly straightforward one for “passive” readers and a more convoluted one for “active” readers willing to work through the difficulty. Macedonio’s *El Museo de la novela de la Eterna* also flushes out the perceived distinction between active and passive reading, but what is particularly interesting about this work, and the unique contribution it makes to the understanding of text processing, is the way in which it calls readers into the text (positioning them as actual characters), and, more importantly, how it defers the onset of the novel through a long series of prologues. From a cognitive point of view, suspense (in a physiological sense), attention, and mental fatigue all come into play. Finally, Pynchon’s expansive labyrinthine plot in *Gravity’s Rainbow* is an opportunity to look at how convoluted narratives can discourage long-term learning, which in turn affects the ease with which the text is read. As the ultimate aim of this chapter is to better understand how narrative subversions and the perception of textual difficulty go hand in hand, as it did in chapter two, Leonard Diepveen’s notion of difficulty as a “cultural gatekeeper” will continue to serve as a guiding principle in the analysis.

2  “We must make something out of nothing”:¹ Embodied Cognition in John Barth’s *Lost in the Funhouse*

John Barth’s *Lost in the Funhouse: Fiction for Print, Tape, Live Voice* is ripe with examples of experimentations with the conventions of narrative structure. For instance, the author toys with plot structure by providing several alternative endings to a story, with character development and narrative voice by creating ambiguous narrators who echo the author’s (or the story’s) concerns in story creation in lengthy metatextual passages, and with the organization of dialogue by overlapping speaking voices in a dizzying palimpsest of quotations. From a reader response point of view, what is particularly interesting about Barth’s collection are some of the images that he draws on in carrying out these subversions as he self-reflexively comments on them. The labyrinthine funhouse is clearly a central theme to the collection (found even in its title), but another, equally significant image is that of the Möbius strip, featured most prominently in the first tale but also evoked throughout the work in various forms. In essence, the Möbius strip, a loop with a twist that circles endlessly onto itself, comes to suggest the metafictional paradox.

¹ Barth, *Lost in the Funhouse: Fiction for Print, Tape, Live Voice*, 111 (see chap. 1, n. 127).
The way in which the image is explored by Barth, moreover, highlights some important cognitive principles involved in reading and contemplating the self-reflexivity of experimental texts. Reading is a highly embodied act. It should follow, then, that so too is reflecting on the metafictional games presented by a text. The presentation of the Möbius strip in *Lost in the Funhouse* is an apt way of bringing this latter reality to the fore.

With a view to engaging readers, *Lost in the Funhouse* habitually blurs the lines between fiction and their reality through metafictional tricks that question the integrity of narrative frames. In the first story of the collection, “Frame-Tale”—a very short story of just ten words—Barth calls on the image of the Möbius strip, perhaps most readily recognized in some of the drawings of M.C. Escher. As shown in Figure 1 below, readers are instructed to cut along a dotted line on the right-hand side of the page, to twist the resulting strip of paper once, and to fasten the ends together. The strip then reads, “once upon a time there was a story that began once upon a time there was a story…” *ad infinitum* as the loop turns back onto itself so that its beginning and ending dissolve into each other.\(^2\)

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The looping structure calls to mind a certain kind of *regressus ad infinitum*, as well as the self-reflexivity inherent to the metanarrative paradox that dominates the pages of *Lost in the Funhouse*. In a highly playful fashion, it also maps out for readers the overall structure of the collection. Its location within the first short story of the collection is important, for it introduces and frames the other stories, as the title of the tale “Frame Tale,” suggests. In a way, each short story within the collection is an individually framed tale carefully placed within this larger frame that encompasses the book in its entirety. Significantly, while each one explores self-referentiality in a different fashion, they are all united through not only this common theme, but also through this overarching form—and this is perhaps why Barth has referred to the series as a novel rather than a book of individual short stories. Barth himself has made it clear that the image of the Möbius strip, an unending loop that twists upon itself, is what ultimately links all of these tales together. He says he very consciously used this image instead of that of simply a cycle or circle in order to suggest and celebrate the infinite possibilities of storytelling. In the 1987 foreword to the Anchor Books Edition of *Lost in the Funhouse*, he makes clear that the Möbius strip is representative of the collection as a whole. He writes,

> the series [is] strung together on a few echoed and developed themes and […] circle[s] back upon itself: not to close a simple circuit like that of Joyce’s *Finnigans Wake*, emblematic of Viconian eternal return, but to make a circuit with a twist to it, like a Möbius strip, emblematic of—well, read the book. (vii)

Elsewhere, Barth explains, “You go around, but you don’t go around in a deadly circle,” to insist on the generative possibilities of his particular creation. This loop with a twist, then, attempts to engage readers through its inherent open-endedness. As a topological image that structures the collection, however, it also attempts to entice readers to find meaning in the specific arrangement of the tales, challenging them recognize the links among the stories, weaving together the threads that bind them. In other words, readers are to contemplate how each story fits into this greater whole.

Many literary critics have responded to this structural play with engagement and delight, recognizing the narrative tradition the author has set out to subvert. For instance, Carol A. Kyle

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3 Barth, interview by Lampkin, 489 (see chap. 2, n. 135).
writes, “[Barth] will not write a Chaucerian frame-tale, but he will prove that all stories are frame (put-ons) and that, more important, they are framed by their own limitations.” 4 What is more, many have engaged with the labyrinth that Barth has constructed for them, attempting to map out the significance of its order while acknowledging the importance of the Möbius strip to the assembly of the tales. Gerald Gillespie, for example, highlights the way the collection appears to be divided into two cycles that mirror each other—the halves of the Möbius strip—each containing seven tales, noting the special positioning of the title story “Lost in the Funhouse” at the centre of the book. This “seven-step dialectic,” Gillespie says, is part of “cabbalistic and theosophic patterns [that] express the hidden, labyrinthine ‘code’ that supposedly underlies both life and art.” 5 He is not alone in his attempts to disentangle the possible significance behind Barth’s placement of stories. Steven M. Bell, too, sees the title story and its funhouse labyrinth as the “pivot” point of the collection.6 A number of other critics have also explored the possibilities of the maze-like structure Barth has laid out for them, including Victor J. Vitanza who describes the author as a “topologist” and who attempts a justification of the placement of each story within the collection, and Aleid Fokkema who views the special arrangement through the lens of Douglas R. Hofstadter’s notion of the “strange loop,” introduced in the book Gödel, Escher, Bach: An Eternal Golden Braid.7 Focussing on individual stories, Max F. Schulz has noted how the location of the tale “Petition”—sixth in all—has “disturbed readers by its apparently incongruous placement, and even inclusion, in the serial sequence.” 8 Schulz reasons that the tale is meant to be “obstrusive” in the binary structure of the book through its adoption of

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6 Bell, “Literature, Self-Consciousness, and Writing: The Example of Barth’s Lost in the Funhouse,” 87 (see chap. 2, n. 132).


8 Schulz, “The Thalian Design of Barth’s Lost in the Funhouse,” 397 (see chap. 2, n. 142).
the epistolary form and factual characters and events as it reflects a larger two-way movement in the collection, one forward-looking, the other backward-looking, where Barth fuses earlier literary traditions with contemporary innovations (397). Jac Tharpe and Harry T. Moore, moreover, note how the tale “Menelaiad” appears to be a microcosm of the book as a whole, divided into two equal halves each consisting of seven overlapping levels of narrative voices. The structure of the collection and the suggestion that the tales are ordered according to the figure of the Möbius strip, then, seem to have created an irresistible puzzle for interested critics, one ripe with interpretative possibilities.

While critics who comment on the structural play of the work tend to delight in the game that Barth has set out for them, seeing how the stories fit into the larger whole, and sometimes interpreting their signification through their particular placement in the collection, the opinion of the general public who has commented online is more evidently divided. Some readers appreciate the game that is laid out for them, and recognize how the “knotted” plot is structured in such a way as to reflect that a greater theme—“the infinite number of possible constructions of a narrative.” Some comment that the game is “[v]ery creative” and leaves a lasting impression: “Even though [sic] I read this book back in high school it left a distinctive mark,” one reader says, adding that the permanency of the memory is owing to the structural features of the work: “The stories are like puzzles you have to twist around to make sense.” Others, however, recognize that some readers may be put off by the puzzle-like nature of the collection and of the individual stories. One reader warns, “The stories are fairly readable if you’re not concerned with things like plot and/or plot resolution.” Another states outright, “Not my cup


11 Goodreads (reviews for Lost in the Funhouse, entry by Ginny, 01/07/08), http://www.goodreads.com/book/show/12885.Lost_in_the_Funhouse.

12 Goodreads (reviews for Lost in the Funhouse, entry by Jesse, 07/06/08), http://www.goodreads.com/book/show/12885.Lost_in_the_Funhouse.
of tea. I love Barth’s stories, not his tricks.” 13 Readers who recognize the self-referential, metafictional structure of the games for what it is, are sometimes still left disappointed with the collection. One, for instance, says that Barth draws out the concept over too many pages, and writes, “[e]specially at first reading, such stories seem not only bewildering but also boorish, even annoying.” 14 Another is even more critical of the structure of the book and of that of the tales within; he writes:

John Barth is a man obviously enchanted with the sound of his own voice, and to this end he wraps reams of trite observations in ridiculously complex frames [. . .] If you are very lonely or have tremendous amounts of spare time, perhaps this book is right for you. Otherwise, get your transcendence elsewhere.15

The tale “Menelaiaid,” with its prism of narrative frames, seems to receive the most backlash. “I’m certain that there’s an audience for this pretentious nonsense, but I am certainly not among them,” writes one commentator, while another simply admits “It’s both the shortest and the most difficult frame tale that I’ve attempted to read.” 16 The difficulty of the collection and its tales affects readers differently. While some are taken with the puzzles and become engrossed in the game, others are disenchanted by the play altogether. Other readers, moreover, say that while they generally appreciate games of this nature, they find their execution in this particular collection lacking. One online critic writes that while he normally enjoys non-linear narratives that call on readers to “dig” deep, this collection missed the mark: “this one just didn’t make me

13 Goodreads (reviews for Lost in the Funhouse, entry by Adam, 05/09/07), http://www.goodreads.com/book/show/12885.Lost_in_the_Funhouse.


feel like digging. It didn’t even make me shrug,” he writes. The opinions on Barth’s structural games evidently greatly vary. But whether readers find the play intriguing or self-indulgent, the reality is that the metafictional games Barth lays out for his readers nicely highlight the bodily nature of the reading process—here not just in the response to the play, but also in the way the games Barth has devised call on images (namely, the Möbius strip) that underline the importance of the body through their manipulation.

Specifically, Barth’s unique brand of structural play draws attention to significance of theories of embodied cognition to the reading process. These theories suggest that higher cognitive processes, such as thought and language, are based on lived experiences and interactions with the environment. Thinking about an event, in other words, is a lot like living that event—the same sensory, motor and affective processes are involved. As Margaret Wilson describes, it is like counting on one’s fingers, but having pushed the activity so inward that no overt movement takes place. In fact, similar neural activity can be detected (with EEGs, MRIs) when one lives an event and when one recounts it, be it in visual, auditory, affective or motor systems. As Paula M. Niedenthal has found, for instance, the comprehension of sentences with emotional meanings involves the partial re-enactment of the emotional bodily states in question. Similarly, Roel M. Willems, Peter Hagoort and Daniel Casasanto found that right- and left-handed individuals showed different neural patterns (detected with functional magnetic resonance imaging) when reading manual action verbs, indicating that word comprehension involves motor planning, and that semantics are influenced by the specifics of the body. Dorothee J. Chwilla, Herman H.J. Kolk and Constance T.W.M. Vissers have also shown that novel meanings are understood


through what is known about the body and its limitations. In an experiment, the researchers presented both sensible and senseless novel sentences to subjects. An example of a sensible sentence in this context would be, “They let the canoe into the water and paddled with Frisbees,” and of a senseless one, “They let the canoe into the water and paddled with pullovers” (120). Through EEGs that monitored the time of semantic integration, the researchers found that sensible novel sentences are processed in the same time as familiar sentences, whereas senseless novel sentences—sentences that present physically impossible situations—require more time for meaning to be created. The experiment offers evidence that knowledge about the human body acquired through experience is involved in language processing. It is just one of a growing number of studies revealing the embodied nature of high-level cognitive processes.

The role of mental imagery in language processing has been the focus of much study since the late 1990s. In 1999, Lawrence W. Barsalou argued that cognitive representations are inherently perceptual, and that they share systems with perception even at the neural level. As Barsalou explains, thinking about a colour and actually perceiving that colour activates many of the same neural systems. Rolf A. Zwaan, Carol J. Madden, Richard H. Yaxley, and Mark E. Aveyard have also shown that these perceptual simulations—or, imagery in the mind—evoked in language comprehension are dynamic. Both concrete and abstract language, in fact, elicit activity in the motor system. In an experiment that recorded motor activity in the hand muscles, more activity was detected when subjects read sentences that described a transfer of concrete objects, such as “Marco gives you the papers,” and of abstract information, such as “Anna delegates the responsibilities to you,” as compared to when they read sentences that did not describe any transfer, such as “You read the papers with Marco” or “You discuss the

21 Chwilla, Kolk, and Vissers, “Immediate Integration of Novel Meanings: N400 Support for an Embodied View of Language Comprehension,” 109-23 (see chap. 1, n. 106).


responsibilities with Anna.” Language comprehension then, appears to evoke mental imagery. These images are dynamic, and play, to a large extent, on the same perceptual and motor systems as when an object is perceived in real life.

Studies on mental imagery and the dynamic nature of this imagery can of course be useful in helping us to better understand how readers comprehend the worlds with which they are presented with in texts, and how they grasp the way players and objects move within them. But it would seem that understanding the multiple layers of a metafictional text would also call on some of this spatial imagery. The spatial connotations of the metafictional paradox, after all, are evident: infinite regression, vertiginous mise en abyme, tautological circularity—all of these are easily interpretable as spatial images. The body, then, would necessarily be involved in understanding metafictional play, given the embodied nature of the mental images. Semotician Marcel Danesi has suggested that puzzles are “diagrammatic” in nature, and that solving them involves creating mental images of the problems at hand. He writes, “Success at solving virtually any logic puzzle is dependent upon knowing its syntax, which, in turn, depends on knowing how to represent the problem diagrammatically” (119). Research in the cognitive sciences permits us not only to confirm this hunch, but to better understand how the mind responds before these puzzles. John Barth makes the spatial and dynamic—or “diagrammatic”—nature of the metafictional paradox especially evident in the collection Lost in the Funhouse, defining it through images such as the Möbius strip. What is especially important to note, however, is that the visual images he calls on are not just metaphors about texts and writing that work at a formal level; they are also images that work on a cognitive level, involving the perceptual and motor systems, as theories of embodied cognition would suggest.


25 Nicole K. Speer, Jeremy R. Reynolds and Khena M. Swallow have shown that tracking a character’s physical location or goals throughout a story involves similar neural activity as to when those same activities are observed or acted out in real life. Nicole K. Speer, Jeremy R. Reynolds and Khena M. Swallow, “Reading Stories Activates Neural Representations of Visual and Motor Experiences,” Psychological Science 20, no. 8 (August 2009): 989-99.

26 Danesi, The Puzzle Instinct, 119 (see chap. 1, n. 68).
When Barth opens *Lost in the Funhouse* with an invitation for readers to create a Möbius strip, they may, if they wish, conduct this experiment in actuality, physically manipulating the band of paper, emphasizing the materiality of the game Barth has set up for them. Alternately, they can also manipulate the image in their minds. According to theories of embodied cognition, doing so would actually call on many of the same visual and motor systems as carrying out the game in actuality. As Benjamin K. Bergen *et al.* have noted, “visual imagery makes use of the same neural resources recruited for actual vision.” Not only would the image of the Möbius strip be envisioned, but its interminable cyclical movement should also spark activity in the motor system. Neuroimaging studies have shown that the mental rotation of an object involves activity in the posterior parietal cortex, which is known to be involved with visuospatial processing, but studies that monitor the blood flow in the brain reveal that mentally manipulating an object can also increase the blood flow in the motor cortex (in addition to the premotor cortex). Rolf A. Zwaan and Lawrence J. Taylor have offered further evidence for the role of the motor system in the mental rotation of objects. They recorded activity in the neural substrates of manual rotation when subjects processed sentences describing an object being manually rotated (such as “Dave removed the screw from the wall,” “Troy twisted open the beer bottle,” and, “Mark turned left at the intersection”) (11).

The twisting and circular movement of the Möbius strip is continuously recalled throughout the collection, as Barth continues to make use of this *leitmotif*. The figure frames the work as a whole (perhaps appropriately, given the title of the story in which it is first located), by linking the beginning and end stories to each other. The very last story, “Anonymiad,” ends on the phrase “on a lorn faire shore a nameless minstrel // Wrote it” (201). The referent of the pronoun

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“it” in “Wrote it” is a tale that the speaker has written, bottled, and cast out to sea. At the tail end of the story, then—appropriately—is a tale. Even more amusingly, a “Tale”—“Frame Tale”—is precisely what begun the work. In other words, the tail-end is also the beginning. The stories loop back onto themselves endlessly, with the end dissolving into the beginning, as it is with the Möbius strip. To complete the image, the stories between these two poles often link into each other. For instance, the story “Petition” ends with the line, “Yours truly,” suggesting that the title of the next story, “Lost in the Funhouse,” is its signatory (71). The figure of the Möbius strip, then, frames the story, and readers, should they clue into this particular structural game, are encouraged to conceive of the collection as an endless circuit that twists back onto itself.

More than just a structural device, though, the figure of the Möbius strip is also an important image that comes up again and again throughout the collection. On the one hand, it is perhaps a commentary on the sense that literature has exhausted itself to the point of infinite repetition (or, alternately, that repetition with a variance can generate an infinitude of new tales); on the other, it is a vivid visual representation of the metafictional paradox. The construction “once upon a time there was a story that began” completes itself with its own echo, so that the text turns back onto and comments on itself. Just as the sides of the band of the Möbius strip dissolve into each other, so do the levels of the narration and of the story. Barth emphasizes the dynamism of the Möbius strip in the opening tale by having readers rotate the shape in their hands or in their minds. If on a conceptual level, the Möbius strip and the metafictional paradox are structurally similar, then contemplating the latter should also invoke neural activity in the perceptual and motor systems. In other words, processing the metafictional paradox, just like visualizing the construction and manipulation of the Möbius strip in “Frame Tale,” involves working with spatial images. Both games are highly embodied activities.

An important implication of the metafictional paradox is the sensation of disorientation that is often highlighted in the discussion or execution of metafictional play. The notion of disorientation is especially prominent in Barth’s oeuvre, showcased even in the title, Lost in the Funhouse. The feeling of losing oneself is also implicit in the image of the Möbius strip, an infinitely self-refracting construction and a reflection of the metafictional paradox. The figure of the Möbius strip effectively obliterates the concept of teleology, with each side of the band forming the loop merging seamlessly into the other. Beginnings and endings thus become obsolete, meaning that in this infinite structure, no such reference points exist. Without these
bearings, it follows that disorientation ensues. This sensation is often evoked in literature, with authors creating a variety of metaphors to suggest it. For instance, for Jorge Luis Borges, who Barth notes in the preface was a significant source of inspiration in writing *Lost in the Funhouse*, it is through the image of the labyrinth that this feeling arises. In the same way that for Borges, the labyrinth is generally a metaphor for text or for the infinite world of textual possibilities, Barth uses the image of the labyrinthine funhouse to the same end, linking it with the image of the infinite Möbius strip as well. The message that is implied is that the metaphysical paradox, with its intricately and endlessly intertwining narrative layers, can be significantly disorienting.

The sense of being lost permeates the collection of stories. However, it is perhaps most iconically evoked in the title tale, “Lost in the Funhouse.” In this story, the protagonist, thirteen-year-old Ambrose, travels to Ocean city with his family and his fourteen-year-old neighbour, Magda. Ocean City is home to a mazelike funhouse which comes to represent, among other things, the text itself. Ambrose loses himself repeatedly within the maze in various versions of story that are laid out for readers like fragments of alternate possible realities. Significantly, particularly because of these overlapping and often contradictory realities unfolding before readers like the various corridors of an infinite maze, readers too, just like Ambrose, are susceptible to getting lost within the text. By this metafictional twist, the reality of the protagonist lost in the funhouse is also the reality of readers who risk getting lost in the text.

Barth uses various techniques to achieve the effect of disorientation in “Lost in the Funhouse,” but one of the most overt is the manipulation of the plot line through games with time (a dimension represented in the implied infinitude of the Möbius strip). The story generally follows the order and pace of the conventional dramatic narrative, but it often diverges from this pattern, sometimes in ways which Barth makes explicitly clear by way of the narrator. The narrator’s interjections detract from the main plot and add another spatial and temporal dimension to the story, but they also confuse the sequence of events within the plot itself. For example, the narrator admits at one point, “All the preceding except the last few sentences is exposition that

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31 Barth writes, “it was the happy marriage of form and content in Borges’s ficciones—the way he regularly turned his narrative means into part of his message—that suggested how I might try something similar, in my way and with my materials” (vii).
should’ve been done earlier or interspersed with the present action instead of lumped together. No reader would put up with so much with such prolixity” (94). At another point, readers are confronted with the directive “Fill in,” italicized, and a series of additional sketchy details about the characters and the plot that the narrator had failed to mention before this point (92). Sometimes, the anomalies and ruptures in the fabric of the story are not openly discussed in this way. For example, in one paragraph, the narrator suggests that Magda and Ambrose’s brother Peter, with whom Ambrose competes for Magda’s affections, have already made their way through the funhouse and await for Ambrose at its exit; in the next paragraph, Peter proposes that they enter the funhouse. The jump in time confuses the plot line. Elsewhere, the narrator seems to weigh two options before choosing and moving forth with one, so that two opposing events overlap. He says of Ambrose, “Naturally he didn’t have nerve enough to ask Magda to go through the funhouse with him. With incredible nerve and to everyone’s surprise he invited Magda, quietly and politely, to go through the funhouse with him” (90). It is as though the narrator, rather than present readers with a polished, tightly-knit story, is still laying out its scaffolding and constructing the plot as he narrates it. The result is that the narrative is disjointed, multi-layered, repetitive, and sometimes contradictory. Just as Ambrose loses himself inside the funhouse, readers are prone to lose themselves within the story. Flashbacks and flashforwards, dream sequences, meta-commentary and general experimentation with narrative structure also contribute to the confusion of the timeline. The multiple narrative layers of “Menelaiaid” are yet another manner by which the author attempts to confound readers through narrative play. As seen above, while such games are able to delight and entertain some readers, they are also one of the primary catalysts for dissatisfaction with the collection of tales for a number of other readers.

Significantly, this sense of being lost within the labyrinthine temporal structure of the story has a cognitive basis. As Daniel Casasanto and Lera Broditsky have shown, thinking about time involves spatial imagery.32 In language, metaphors about time and space happen to be asymmetrically dependent on each other: people talk about time in terms of space more than they talk about space in terms of time. For example, we will say “a long vacation” or “a short

concert” to describe a given duration (580). Casasanto and Broditsky conducted six experiments to test whether this asymmetry in language existed on a cognitive level as well. What they found is that subjects were unable to ignore irrelevant spatial information when they were asked to make judgements about duration. What this suggests is that at a conceptual level, time is indeed thought of in terms of representations of space. The research fits into the framework of embodied cognition, as these spatial images would be constructed from representations of experienced perceptual and motor action. Barth’s games with time, then, where readers may become lost within the temporal folds of the story, should invoke some spatial imagery. Manipulating these images as they try to find their way through the text’s labyrinthine structure should also spark some activity in the motor system, as would the mental rotation of the Möbius strip in the opening story. To contemplate the abolishment of teleology characteristic of metafiction, in other words, is an inherently embodied activity, one that is carried out throughout the two-hundred or so pages of the collection.

Reading naturally involves the body as the very understanding of language is an embodied act, as research in the cognitive sciences is today showing. Given that this is the case, the processing of the metafictional paradox by readers ought to be examined within this framework of embodied cognition. What the puzzle appears to especially play on is the manipulation of spatial imagery, as Barth so concisely captures in his Möbius strip image, a figure that can be manipulated either physically if readers actually cut out the strip in “Frame Tale,” or within the mind. It would seem, then, that contemplating the structure and ramifications of the metafictional paradox, just like thinking about the infinite spiralling motion of the Möbius strip, would involve the substrates of rotation in the motor cortex.

It is interesting to speculate about the effect of the size of the loop in question. For instance, while the Möbius Strip in “Frame Tale” consists of just one twist and is so easy to envision in its entirety that it can in fact be held easily within the palms of one’s hands should readers choose to cut out the strip, other loops within the collection are far more expansive. For example, the larger loop that encapsulates the entirety of the book—Lost in the Funhouse both begins and ends on a tale, as explained above—is a much more complex structure that is less readily envision in the mind, and that is thus far more disorienting. Other metafictional loops extend outward even more abstractly, to the extent that they become more and more difficult to contain within a comfortable space in the imagination. For instance, the temporal games that Barth
presents invoke numerous layers of reality, some of which breach the proverbial fourth wall and encroach on that of readers. It may be quite possible, then, that while puzzles that are easy to envision (in other words, “solve”) in the spatial substrates may be, generally speaking, non-problematic and possibly even especially pleasing to readers, those that grow uncomfortably complex and resist an easy mapping can begin to place certain strains on readers, and this is where the divergence in readerly responses becomes especially evident. Some readers may be more comfortable at grasping these large metafictional loops while others become lost within their interminable folds, growing progressively disenchanted with the process of trying to find their way out of the labyrinthine structure. In other words, it may very well be the size of the “strange loop” (to exchange Barth’s Möbius strip structure with the more general term coined by Hofstadter) that most significantly influences reader response. As the loop grows in complexity and size, and becomes less easy to contain in the imagination, the notion of difficulty as a “cultural gatekeeper” comes into play: while some readers respond with delight, others naturally grow frustrated with the read. Evidence of this, after all, abounds in the responses to the text found both in literary journals and literature review websites.

3 “I do not even have ideas. There are tugs, impulses, blocks, and everything is looking for a form”:  
Inference Generation and the Right Hemisphere in Julio Cortázar’s Rayuela

Julio Cortázar’s Rayuela presents its readers with a number of structural games. The point of these games, Cortázar has said, is to make readers as active as possible in the reading process. He states this goal outright through the voice of his character Morelli in Rayuela, the author and philosopher admired by the protagonist Oliveira and his fellow Serpent Club members. A note by Morelli in Chapter 79 outlines the thinker’s vision for a new kind of novel—an “antinovel”—that rejects the old forms of literature and revises the conventional roles of the author and the reader, and the contract between them. Morelli suggests making the reader

33 Cortázar, Hopscotch, trans. Rabassa, 402 (see chap. 2, n. 3).
un cómplice, un camarada de camino de la historia. Simulteneizarlo, puesto que la lectura abolirá el tiempo del lector y lo trasladará del autor. Así el lector podría llegar a ser copartícipe y copadeciente de la experiencia por la que pasa el novelista, en el mismo momento y en la misma forma.  

This participating reader would assist the author in shaping the narrative, in giving it form from a block of “arcilla significativa” (507). Julio Cortázar repeated these intentions in an early interview with Evelyn Picon Garfield. When the interviewer asked how the narrative ends—whether the protagonist Oliveira jumps from the window into the hopscotch and to his probable death or not—Cortázar said that Oliveira does indeed jump, but this is something he, as an author, could not tell the reader without “destroying” the book. “The idea is that you or any other reader must decide,” he tells the interviewer, later praising her for coming up with other possible alternatives to fill in the narrative gaps. The reader’s participation is paramount in *Hopscotch*. What this experimental fiction attempts to do is elicit the maximum engagement from readers by having them contribute to the threading of the story, filling its narrative gaps with the products of their own ideation.

The main structural game in *Rayuela* neatly outlines Cortázar’s understanding of the distinction between the active and the passive reader. The famous introduction to the book reads:

En su manera este libro es muchos libros, pero sobre todo es dos libros. El lector queda invitado a elegir una de las dos posibilidades siguientes: El primer libro se deja leer en la forma corriente, y termina en el capítulo 56, al pie del cual hay tres vistosas estrellitas que equivalen a la palabra Fin. Por consiguiente, el lector rescindirá sin remordimientos de lo que sigue. El segundo libro se deja leer empezando por el capítulo 73 y siguiendo luego en el orden que se indica al pie de cada capítulo. En caso de confusión o olvido, bastará consultar la lista siguiente (7)

A list of chapter numbers follows, ordered in a seemingly haphazard manner. The instructions outline at least two ways of reading the novel: linearly, or according to a non-linear path set by

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34 Cortázar, *Rayuela*, 507 (see chap. 1, n. 127).

35 Cortázar, interview by Evelyn Picon Garfield, n.p. (see chap. 2, n. 4).
the author. Cortázar ascribes the first method to the “lector hembra,” the supposedly passive consumer of literature, and the second to the “lector cómplice,” the reader who purportedly actively engages with the work and willingly weaves the fabric of its story from the loose threads dangled by author in the expendable chapters (109:599, 507). The two paths, moreover, coincide with two of the primary characters in the novel: the intuitive and emotionally-driven La Maga who takes everything at face value (at least in the eyes of the other characters), and the troubled intellectual Oliveira who continually looks beyond the surfaces of his surrounding world.

The cognitive implications of Cortázar’s game are evident: the “lector cómplice” supposedly gives himself more trouble to piece together the narrative from the fragments presented to him in the expendable chapters, and apparently labours more dutifully through its pages so that his mind is more actively involved with the reading than the “lector hembra.” Significantly, in the cognitive sciences, the notions of an “active” or “passive” mind do not exist in the way the author defines the terms. As we will see in the following pages, the cognitive view of the way narrative gaps impact reading is entirely different.

The debate over the best reading path to adopt when approaching Rayuela has shifted considerably over the years. Early critical analyses of the work generally understood the second method of reading—that attributed to the “lector cómplice”—to be the most favourable. For example, Ken Holsten writes in 1973,

El lector que elige la primera manera de aproximarse al texto sugerida por Cortázar sacrifica por completo la lectura de los capítulos de la tercera parte, la cual, además de ser una significativa adición a las dos primeras, es muchas veces la clave para su interpretación. También se engaña el lector que cree poder enterarse del contenido de la novela leyéndola a la manera tradicional.  

To adopt the first method of reading, Holsten says, is to cheat oneself out of the total experience of the work. By the mid-1990s, however, a shift had begun to take place and the role of La Maga and the status of the “lector hembra” were largely revised. In a 1994 essay, Michael Hardin suggests that the “male” way of reading—Oliveira’s way—is not necessarily the winning

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36 Holsten, “Notas Sobre el ‘Tablero de Dirección’ en Rayuela de Julio Cortázar,” 685 (see chap. 2, n. 27).
approach. Instead, the “existential” Maga who does not get bogged down in detail but relies instead on a refined sense of intuition “is our guide through the labyrinth,” Hardin says, adding, “she, like Ariadne, provides us with a string to help us find our way out.” ³⁷ Using game theory as his template, Hardin posits that the only way to win Cortázar’s game is to refuse to play by its rules, the guidelines stipulated in the opening instructions that thrust eager readers into an exit-less labyrinth. Sydney Aboul-Sosn similarly suggests in 1995 that “It is [La Maga’s] example that we are to follow, not Oliveira’s. Far from being a marginal character, La Maga is the model for ultimate success in the escape from the bonds of language and the bounds of centering.” ³⁸ Importantly, the preferred method of reading is in many ways historically—and not absolutely—determined. There are, of course, other ways of reading Rayuela beyond the two methods proposed by the author. For example, translator Gregory Rabassa describes how he stumbled onto a third method: reading (and for Rabassa, translating) the novel “by simply barging through from the first page to the last.” ³⁹ It is possible, too, to select and read chapters at random.

The popular audience is divided on the best way to approach the novel. While some delight in the experimentation of the reading path that includes the expendable chapters, others prefer to restrict their reading experience to the more linearly-orientated path that carries them from chapter one to fifty-six without interruption. For example, a number of readers say they are “fascinated” by the creative ordering of the book, and one in particular describes this optional approach as “a much more ephemeral ride” than that offered by the linear method. ⁴⁰ Yet another reader who favours the insertion of the expendable chapters in the reading recognizes the level of skill and awareness that is required from the audience to enjoy the experience of this path. “Experienced readers will be delighted with the structure of the hypertext and all the possibilities


of reading this novel,” she writes. Another reader makes the more profound realization that “participating in any read is a game of sorts” in reading Rayuela’s expendable chapters. Still, others are put off by the very structural innovations that delight these fans of Cortázár’s work. While they claim to enjoy the book, many readers recommend to forum visitors that they disregard the expendable chapters altogether. One states bluntly, “Definitely better read the short way,” and another, “If you want to go out on a high note, stop after you have done Part 2.” One reader states firmly, “As Cortázár’s Table of Instructions will inform you, ‘Hopscotch consists of … two books above all.’ Do not read the second one.” This reader is cognizant of the game that the author is attempting to play with him, but nevertheless judges the expendable chapters to be disruptive in an otherwise enjoyable story. He explains lengthily,

The desultory and labyrinthine experience of integrating all of the scraps from the cutting room floor into the midst of a sometimes thought-provoking and well-crafted narrative, robs Cortázár’s novel of its grace and is likely to rob many readers of their patience. It is an unusual sensation to be in the middle of a book and to have absolutely no idea how many pages separate you from the ending; just as it is unusually frustrating to lose your place when it means scanning back and forth through twelve jumpy chapters to find it. Perhaps the experience is meant to be more like life than reading.

Every time that I realized that the upcoming appendix chapter that was about to draw my attention away from Horacio’s existence was


classified as "Morelliana" I sobbed inwardly and throttled imaginary songbirds. If you feel indulgent towards self-important amateurs who sit around and ramble about matters that have been written about with intelligence and skill, or if you like it when young novelists try to propound grand theories of aesthetics based mostly on the strength of their pride, you *may* have patience for Morelli's contributions, which, unfortunately, make up somewhere near half of the extra chapters.46

The reader's response is strongly-felt, corporeal in nature, and intensely negative. He identifies patience—or in this case, lack thereof—as critical in the determination of reader response. Ease of reading, which Rayuela will not grant him, is something he prizes as an important characteristic of a well-told story. He defines this facility with the text as the result of the author allowing for meaning to be extracted in an efficient manner through the logical sequencing of events and the elimination of (what are viewed as) non-pertinent details. Cortázar's game, he says, irks him precisely because it floods the otherwise entertaining story with what the reader deems unimportant miscellania that distract from the main event. Another reader similarly suggests that the additional chapters seem "tacked-on," and that ignoring them "makes the book a good deal more coherent."47 The perception of the purpose of the work, and thus readers' expectations of coherency going into the reading, then, are important in the evaluation of its merit and of the value of its stylistic and structural form.

What is at stake in this game of hopscotch, where readers are instructed to jump around from chapter to chapter, is the creation of blanks that they must fill. Ana María Barrenchea perhaps best summarizes the way readers are thrown about the story in her early analysis of Rayuela:

La novela ha de presentarse, pues, como material en gestación, como dibujo fragmentario que invita al lector a participar activamente. Desde la primera página lo sacude y lo irrita (yo diría que no rechaza sólo al 'lector hembra'), lo saca de sus casillas, lo zarandea de uno a otro capítulo, de una escena de amor o de

46 Goodreads (reviews for Hopscotch, entry by Nathaniel, 06/10/08).

This fragmented sketch of a story appears unwelcoming to readers precisely because it does not make the experience of reading easy. Readers must actively work to fill the narrative gaps that arise and contextualize the pieces presented in the expendable chapters for themselves, without much indication as to their relevance to the main story, both structurally and thematically.

A microcosm of *Rayuela* exists within the novel itself and replicates precisely these kinds of overt interpretative gaps on a small scale, the structure of which sheds light on the overall global framework of *Rayuela*. Chapter 34 interlaces a text written by Cortázar expounding the inner monologue of the protagonist Oliveira with an extract from the 1985 realist novel *Lo Prohibido*, written by the Spanish author Benito Pérez Galdós. The lines on the page interchange from one story to the other without pause, so that unsuspecting readers may first read them as though they are each others’ continuation. Two reading paths are represented simultaneously here, reproducing the very structure of *Rayuela*. Moreover, just as the second reading path in *Rayuela* creates large narrative blanks though its inclusion of expendable chapters with seemingly random and esoteric information, the fusion of these two storylines in Chapter 34 creates interpretative holes for the readers to reconcile.

Jerome S. Bernstein contends that many of these strange juxtapositions create *enjambements*—“nexi” or “verbal *objets trouvés*”—to which readers may lend meaning, and that similar “nexi” structures arise at the global level in *Rayuela*, especially at the junction of the expendable and the primary chapters. The difficulty in reading is related to the work involved in interpreting these “nexi” and giving them meaning. Bernstein identifies several of meaningful “nexi” throughout the length of Chapter 34 (in both the Spanish and the English editions of the book), and says that many of his students have assured him that they initially approached the chapter reading it line by line, unaware of the game being played with them. He describes readers’ probable response in coming across certain *enjambements* in a rather covertly formal manner:

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48 Barrenechea, “‘Rayuela’, una búsqueda a partir de cero,” 70 (see chap. 2, n. 9); italics mine.

49 Bernstein, “*Rayuela*, Chapter 34: A Structural Reading,” 65, 64 (see chap. 2, n. 28).
“They will be brought up sharply,” he writes, “both in surprise at finding some phrases which make coherent sense, and out of relief from the tedium of reading seven straight pages uncomprehendingly” (63). Although Bernstein identifies the “tedium” of reading what appears to be a nonsensical arrangement of phrases and words, he appears not to grant that some readers will read the text in a non-linear fashion, jumping around back and forth in an attempt to resolve the cause of the confusion they may feel before the intermingled lines, and some will even abandon the text altogether rather than persevere at length through a passage that appears to them mostly senseless. Patience, as one online reviewer had noted, is a quality not possessed equally by all. The meaningful “nexi” that Bernstein identifies at the end of the chapter, while still able to generate some surprising cases of signification, will necessarily not be approached by readers in the same way nor with the same attention as those at the beginning of the chapter—if readers make their way to them at all. Marcelo Aebi, unlike Bernstein, notes how difficulty may affect the reading process, and indeed grants the fact that readers may abandon the text when faced with irreconcilable complexity. He refers to some readers of Rayuela who, “enfrentados a una novela sumamente compleja [. . .] optaron por abandonar la lectura.”50 The physical book and the very length of the text (and thus the game being played with readers) are contributing factors to the way in which the structural play is received by readers. As the online reviewers of Rayuela have demonstrated, the game of large interpretive gaps, whether in Chapter 34 or in the book as a whole, risks losing readers’ attention and threatens their motivation to persevere through its pages to make the “nexi” therein mean.

The large narrative blanks that are created at the global scale in Rayuela result from the insertion of haphazard data such as information about Morelli, notes written by him (titled “Morelliana”), quotes by authors and other historical figures, poems, newspaper articles, random reflections on life, Serpent Club file entries, et cetera. Readers are ascribed the task of bridging these gaps in the text, reconciling these miscellaneous pieces of information into the larger narrative. As their raison d’être is often unclear, a sense of ambiguity may result. The subject of ambiguity has been studied in the cognitive sciences from a variety of different angles. Scott L. Fairhall and

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Alumit Ishai have examined object indeterminacy in art, for instance. Although their research is in reference to the visual arts rather than to literature per se, they nevertheless confirmed that indeterminate and abstract works do require more effort in their processing than representational ones. The researchers were also able to identify that the temporal-parietal junction (TPJ), where the temporal and parietal lobes meet, plays a role in the recognition of meaningful content in a visual work. This region is known to be implicated in “exerting attentional control over switches from local to global processing,” suggesting that viewers oscillate back and forth between the local and global context when confronted with an ambiguous element in a work (930). A similar mechanism is likely at play when the ambiguous element is within a written rather than a visual work, and these observations would also seem to be in keeping with Cortázar’s and critics’ assertion that the “lector cómplice” works harder than other readers for bothering to attempt to integrate the ambiguous information found in the expendable chapters into the larger narrative.

Sandra Virtue et al. have studied ambiguity specifically in the context of story comprehension. What they have found is that when readers are suddenly faced with a textual gap that requires them to generate causal inferences, different neurological activity is recorded in the brain—especially in the gyrus and the right hemisphere. The gyrus is where Wernicke and Broca’s areas are located—the areas traditionally associated with language comprehension—and the right hemisphere has been linked to activities such as metaphor comprehension. Virtue et al. refer to the event in which readers do not succeed in making an inference required by the text as a “coherence break,” and say that such breaks are the cause of further difficulties in reading a given text. Significantly, working memory is involved in the generation of causal inferences:

52 The TPJ is also associated with self-awareness (and thus out-of-body experiences). It has been of great interest in the Theory of Mind.
53 Virtue et al. study causal inferences, namely, predictive and bridging inferences. They offer the following example: “John was going to a wedding tonight. He had been sitting around the house in his jeans, so he went to his bedroom to find some clothes. Soon he came out wearing his tuxedo.” The researchers explain, “[a]fter reading the last sentence in the passage, readers need to generate the inference that John changed his clothes to understand why he was wearing jeans but is now wearing a tuxedo” (104); Sandra Virtue, et al., “Neural Activity of Inferences during Story Comprehension,” Brain Research 1084 (2006): 104-14.
people with high working memory capacity seem to be more adept at avoiding coherence breaks—that is, they are more capable of semantic integration—than people with low working memory capacity. The variety of responses to Cortázar’s *Rayuela*, then, can in many ways be explained by this phenomenon of variable working memory capacity. Readers with a higher capacity would be able to retain more information in working memory as they move along through the text, and thus be able to integrate new information with more ease, leading them to see possible links between passages more easily than readers with lower working memory capacity. The reading experience including the expendable chapters, then, may seem more enjoyable to them if it indeed feels easier to read than it would for someone with a lower threshold for storing information in working memory.

In his creation of two separate reading paths, one more orderly and supposedly comprehensible than the other, Cortázar makes a distinction between active reading and passive reading—one that is analogous to the difference between a “writerly” text and a “readerly” work, in Barthesian terms.\(^{54}\) The first reading path supposedly caters to a “passive” approach, while the second prompts an “active” engagement with the text, similar to the creative writing process undertaken by the author. John S. Brushwood notes, “Readers who accept the challenge [of forsaking the linear path] find themselves flirting cautiously with the authorial position if they accept Cortázar’s specific sequence for an alternative reading.”\(^{55}\) If readers decide for themselves what a text means, then, it is as though they are writing it—so the rationale goes. Interestingly, there does appear to be a limit to this sense of authorial control. Brushwood also says that in “invit[ing] readers to establish any of many possible sequences,” Cortázar is “in effect inviting them to move more clearly into the position of author” (24). But as reader responses would show, this sense of active engagement is not reflected in all readings. It would indeed seem that reading *Rayuela* in a haphazard manner, choosing chapters and passage at random, would create large structural gaps to be filled by readers, and consist of a highly interactive selection process compatible with the author’s vision for “active” reading. Yet, when some readers adopt this most independent of reading paths—the selection of chapters according to personal whim—they


\(^{55}\) Brushwood, “Writerly Novels/Readerly Responses,” 24 (see chap. 2, n. 36).
sometimes sense that they are cheating at Cortázar’s game. An online reviewer describes her experience:

After experimenting with which way to approach the novel, and trying both ways, I gave up... and just read the parts about La Maga. I was too impatient at that point in my life, and needed to become a mellower person, to read slower, with more of a sense of play and participation. And Cortázar wants his reader to participate—to make reading his book an interactive experience, not a passive one.56

In reading only the parts about La Maga and thus adopting a purely self-guided method of reading, tailoring the reading experience to her own tastes and thus making it mean in a way that is utterly individual, this reader ironically feels “passive” rather than actively engaged with the book. The gaps that result from her skipping around the author’s hopscotch are construed as negative, and her experience is even viewed as a failure. Perhaps, then, the gaps that arise in reading need to be perceived as part of the game to be considered as integral to the reading experience and to count towards the end goal of engaging with the text. Nevertheless, even with the dismissal of the personally-determined reading path, the notion of “active” and “passive” reading persists in Rayuela, as even this online reviewer will grant. It is, in fact, this dichotomy between “active” and “passive” reading—between “writing” and “reading” the text—that is the centerpiece of the book.

Cognitively speaking, there is indeed a relation between comprehending and producing a text. In a review of the neuropsychological literature available on story comprehension and production,57 Raymond A. Mar found that there is significant overlap in the parts of the brain associated with comprehending and with producing a story. Mar explains the finding in the following manner:

There is a good theoretical reason why narrative comprehension and production should be related. Ignoring the debate on how these aspects of language may be similar at more micro-levels [. . .], at the level of narrative the ability to organize the meaning of


57 The review isolates it from other language functions such as semantic and syntactical processing.
connected sentences in order to form a holistic representation for either understanding or communicating seems to be a shared necessity. It is proposed that selection and causal-temporal ordering may underlie this construction and commonality.  

Mar identifies three categories around which the literature on the subject is centred—memory encoding and retrieval, integration, and elaboration or simulation—and notes the involvement of five brain areas: the medial prefrontal cortex (linked to ordering and selection processes, as well as to theory-of-mind subprocesses); the lateral prefrontal cortex (linked to event-ordering processes, especially in the right hemisphere); the temporoparietal region (also linked to event-ordering, most notably at the juncture of the temporal and parietal lobes; it is also associated with the attribution of mental-states and mental inferencing); the anterior temporal region including the temporal poles (associated with ordering and selection, though they do not seem to be uniquely linked to these areas; also related are theory-of-mind processes and the concatenation of sentences and propositions); and the posterior cingulated cortex (linked to a variety of functions other than selection and ordering, such as integrating new information with prior knowledge, visuospatial imagery, episodic retrieval and the emotional modulation of memory processes—all of which are congruent with autonoetic awareness).  

It should be noted, however, that this symmetry between comprehending and producing a narrative that Mar identifies exists not just with texts of the highly experimental variety, but with all written materials. Importantly, if readers feel more challenged by a non-linear narrative than a linear one, then other factors must be at play. Many of the differences that exist between the two kinds of readings, it would seem, lie primarily with the extent to which the right hemisphere is recruited. As Mar notes, the right hemisphere plays a large role in both narrative comprehension and narrative production. However, it seems that the structural innovations of experimental texts play precisely on the faculties generally associated with the right hemisphere.

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Mark Jung Beeman has suggested that the right hemisphere engages in coarser semantic coding than the left hemisphere, given the differences in microcircuitry between the two, with the dendrites of neurons in the right hemisphere extending to more cells than those in the left hemisphere. Mark Jung Beeman, Edward M. Bowden, and Morton Ann Gernsbacher have also shown that the drawing of inferences is generally supported by the right hemisphere. Noting that in recalling stories, people tend to find it difficult to distinguish between information that they have inferred from information that was explicitly presented to them, the researchers propose that it is in the right hemisphere that inferences are generated, while the left hemisphere is responsible for processing the inferences further and incorporating them into the discourse representation. Vinod Goel et al. have similarly advanced evidence that supports a hemispheric specialization model, where both hemispheres support different, but equally important functions for reasoning. Focusing on the prefrontal cortex, the researchers note that “the left PFC [prefrontal cortex] is more adept at constructing determinate, precise, and unambiguous representations of the world, whereas the right PFC is more adept at constructing and maintaining fluid, indeterminate, vague, and ambiguous representations.” The right hemisphere would therefore preserve ambiguity and thereby “temper premature overinterpretation” by the left hemisphere (2245). In terms of language processing proper, the right hemisphere is generally associated with metaphor comprehension. While this idea is

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60 Jung-Beeman, “Bilateral Brain Processes for Comprehending Natural Language,” 512-18 (see chap. 1, n. 100).

61 Mark Jung Beeman, Edward M. Bowden, and Morton Ann Gernsbacher, “Right and Left Hemisphere Cooperation for Drawing Predictive and Coherence Inferences during Normal Story Comprehension,” Brain and Language 71 (2000): 311. It should also be noted that the coarse coding hypothesis remains speculative, and although there has been much evidence mounted to date in support of the theory, some researchers still contest it, and produce data that would seem to put it in doubt. For example, Padmapriya Kandhadai and Kara D. Federmeier found that subjects responded similarly to ambiguous and unambiguous word associations (assembled in triplets) in both the right and left visual field (associated with the left and right hemispheres, respectively), suggesting that there is little difference between the right and left hemispheres where language processing is concerned. Padmapriya Kandhadai and Kara D. Federmeier, “Hemispheric Differences in the Recruitment of Semantic Processing Mechanisms,” Neuropsychologia 48, no. 13 (November 2010): 3772-81.

62 The researchers also cite evidence from research on patients with right hemisphere damage as well, in addition to the data collected in their own experiments.

63 Vinod Goel et al., “Hemispheric Specialization in Human Prefrontal Cortex for Resolving Certain and Uncertain Inferences,” Cerebral Cortex 17 (October 2007): 2249.
applicable to critical textual analysis in a number of ways, the wording used by Gorana Pobric et al. may be particularly illuminating in terms of analyzing the processing of the narrative gaps created by the expendable chapters in *Rayuela*. Novel metaphor comprehension, the researchers write, is the “integration of the individual meanings of two seemingly unrelated concepts into a meaningful metaphoric expression.”

The reconciliation of the narrative gaps that arise through the insertion of the expendable chapters in *Rayuela*, then, in one way, appears to be compatible with functions associated with the right rather than with the left hemisphere, inasmuch as the information presented therein appears ambiguous to readers.

Reading *Rayuela* as a “writerly” text, then, would involve engaging the right hemisphere in a significant way. Because the right hemisphere appears to encompasses a more disperse, fluid semantic network (likely because of its more diffuse neural arrangement), the “writing” of the text would naturally vary wildly from person to person; the left hemisphere, on the other hand, while it too is involved in the generation of interpretive inferences, is linked more closely to the understanding of the words on the page—in processing and making sense of the discourse representation. Importantly, reading ability is generally not measured according to the activity associated with the right hemisphere. Working memory and cognitive load are factors in ease of reading, but as Chantel S. Prat, Debra L. Long and Kathleen Baynes have indicated, the right hemisphere alone does not support these functions. Instead, what we commonly refer to as reading ability (in a developmental context, for instance), pertains primarily to activity related to the left hemisphere. Therefore, although the “writing” of a text (drawing inferences to bridge its narrative gaps) is mostly related to activity in the right hemisphere, difficulty in reading the text would seem to arise in relation to activity in the left hemisphere.

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64 Gorana Pobric et al., “The Role of the Right Cerebral Hemisphere in Processing Novel Metaphoric Expressions: A Transcranial Magnetic Stimulation Study,” *Journal of Cognitive Neuroscience* 20, no. 1 (2008): 170. It also appears that the right hemisphere has an advantage over the left hemisphere in retaining and integrating verbal information over long periods of time. The memory asymmetry between the two hemispheres would therefore seem to offer further support for the idea that the integration of indeterminate and out-of-context information in the expendable chapters of *Rayuela* is aligned primarily with activity generally associated with the right hemisphere, seeing as how the reading process of course unfolds over a long time span. Karen M. Evans and Kara D. Fedemeier, “The Memory That’s Right and the Memory That’s Left: Event-Related Potentials Reveal Hemispheric Asymmetries in the Encoding and Retention of Verbal Information,” *Neuropsychologia* 45 (2007): 1777-90.

Cortázar’s use of the term “lector hembra” has long been criticized, and it is today mostly seen as an unfortunate vestige of times past. The author himself has apologized for the term. In his interview with Picon Garfield, he says:

I ask you women to forgive me for having used such a ‘machista’ expression so typical of Latin American underdevelopment. And you ought to put that in your interview. I did it innocently and I have no excuses; but when I began to hear opinions of my friends who are women readers, who insulted me cordially, I realized that I had done something stupid. I should have written ‘passive reader’ and not ‘female reader,’ because a woman doesn’t have to be continually passive; she is in certain circumstances, but not in others, the same as a ‘macho.’  

The cognitive sciences are in an interesting position to offer a unique commentary on the possible differences in reading between the sexes, given that experiments gather measurable data points from both male and female readers. Significantly, to date, there has been no evidence to support the distinction in reading practices that Cortázar had imagined. In a study that discusses the possible implications of the differences among the sexes on cognitive functioning, namely, in regards to the right hemisphere, Katy J. Bellamy and Richard Shillcock tested to see how well each hemisphere could reject “lure” words semantically related to a target word, reasoning that if the right hemisphere was indeed poorer than the left hemisphere at the task, the experiment would provide further evidence for the theory of coarse semantic coding in the right hemisphere. In the end, the researchers found that the left hemisphere is indeed better able to reject semantically related, novel words. What is particularly interesting in Bellamy and Shillcock’s study in terms of Cortázar’s notion of the “lector hembra,” however, is the slight variation the researchers found among female and male respondents in their ability to reject the semantically related lures. The female subjects rejected the lures slightly less than the male subjects, falsely recognizing semantically-related terms that were in fact novel. Bellamy and Shillcock attribute the difference to statistical error and small sample sizes (only 32 participants were studied), but note the growing interest in the study of sex differences in the brain. For

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66 Cortázar, interview by Picon Garfield, n.p. (see chap. 2, n. 4).

67 The researchers used a recall test, and studied asymmetry by presenting words to participants in either the left or the right visual field. Katy J. Bellamy and Richard Shillcock, “A Right Hemisphere Bias towards False Memory,” *Laterality: Asymmetries of Body, Brain and Cognition* 12, no. 2 (2007): 154-66.
Bennett A. Shaywitz et al. have shown that female brains evidence a greater degree of activity in the right hemisphere, meaning that they are less lateralized than the male brains; Richard Harshman, Roger Remington and Stephen Krashen also found that a sex difference exists for auditory presentation in dichotic listening tasks. Yet, Bellamy and Shillcock point out that the statistical evidence for a difference between the sexes has so far been weak, and identify the tendency to consider sex as “an all-or-nothing characteristic” as a further lacunae in the literature. The researchers propose instead that it is preferable “to view the sex of the brain or the individual as falling along a continuum that is not completely correlated with the outward biological sex of the individual.”

It seems, then, that cognitively speaking, there is no statistical difference between the female and the male brain in reading ability in terms of the right hemisphere, and that the attribution of a lower level of awareness or creative reading ability to the “lector hembra” is based on entirely fictitious grounds. Cortázar’s division based on the sexes does not hold. Interestingly, if the variance that Bellamy and Shillcock had noticed were more pronounced, to the point that it did indeed become statistically significant, it is in fact the female brains that would have registered more activity in the right hemisphere—an activity, it would seem, linked more closely to Barthes “writerly” text rather than the “readerly” work in that it involves making the unexpected and individualized connections between distantly related items, or filling a gap of meaning with the products of their own experience. The female reader would actually be not the “lector hembra,” in this case, but the “lector cómplice,” to the extent that we can attribute the work of the latter to activity in the right hemisphere.

Another lens in the cognitive sciences through which to consider Cortázar’s distinction between active and passive reading is that of the default-mode network. The default-mode network, or DMN, was so labeled by Marcus E. Raichle and Debra A. Gusnard in 2001, and it refers to a

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69 If a difference between the sexes indeed exists, Bellamy and Shillcock reason that the variance can be attributed to the higher level of testosterone present during the development of male brains, leading them to exhibit greater “gist impairment” (and thus lower false recognitions when novel lures are presented) than female brains. Bellamy and Shillcock, “A Right Hemisphere Bias towards False Memory,” 163.
specific network of regions within the brain which present activity when the individual is at rest. The discovery of the default-mode network came about in the search for an appropriate baseline condition for neuroimaging studies. Building on previous work by David Ingvar who had earlier amalgamated a host of unrelated blood flow and positron emission tomography (PET) studies and identified similarities across their control states (which, typically, were never studied as such), Raichle and Gusnard found that a number of systems along the midline area and the prefrontal cortex displayed activity that appeared to toggle off and on between goal-directed activities and a resting state, respectively. When subjects conduct a goal-directed task, the brain function of this so-called default network is suspended (or de-activated) and activity is seen in the cognitive control network (CCN). The DMN has been an important topic of study in the last decade since the term has been coined. These early studies noted how the DMN appears to be de-activated during goal-directed tasks, and active during resting state or stimulus-independent tasks, suggesting that it is associated with unconscious memory processing. When subjects of studies are not prompted by a given stimulus or cue, the brain activity that neuroimaging techniques captures would appear to relate to their internal musings. Studies on autobiographical memory tasks would suggest that this activity that has come to be associated with the baseline is related to internal thought processes, such as “daydreaming, thinking about one’s future and past, [and] broad internal information evaluation.” It follows that the DMN encompasses centres that support semantic comprehension and episodic memory.


It is still early to try and fully understand how the DMN plays into the reading process; grasping how it is involved in the cognitive processing of difficulty in reading is even more ambitious. However, a few hypotheses can perhaps be offered. The temptation to do so comes from the close alignment between the dichotomy explored by Cortázar (and the poststructuralists) concerning so-called “active” and “passive” modes of reading (or texts that invite such approaches), and the clear opposition on a neuroanatomical level between a brain that is engaged in an externally-prompted task and one that is in a resting state. However, just as “active” and “passive” reading and texts cannot be convincingly associated with either the right or left hemisphere, the contrasting terms do not sit entirely well within the framework of the activation and de-activation of the default-mode network either. While the act of reading engages the brain in numerous ways, calling on processes related to vision, working- and long-term memory, for example, introspection would suggest that much of the thought that takes place during this activity seems unconscious, so that the default mode network would play a significant role in reading. Research using resting-state functional connectivity (RSFC, a technique that employs functional magnetic resonance imaging to measure changes in blood flow in the brain during a resting state) supports this hypothesis. Maki S. Koyama et al. found that both the regions related to the default mode network and the regions associated with “effortful controlled processes” become activated during reading; however, activity in the latter becomes less frequent once reading becomes more automatic, as with developing children. Koyama et al. remind us that the Stroop effect (where subjects tend to take longer to read colour words when the terms are presented in a colour other than what they depict) would suggest that successful reading may even require the suppression of effortful control. What happens, then, when a text presents puzzling challenges to its readers? It seems that resolution of the play—to the extent with which


75 Ibid., 2555.
it is engaged by the reader—would require some conscious activity, and thus de-activation of the default mode network. However, it should be remembered that reading even the most challenging of texts would still inevitably entail some toggling between the default mode network and the CCN.

The poststructuralist dichotomy between “active” and “passive” texts and mode of reading does not hold up well in the context of this research on the brain. When translated into cognitive terms, the “active/passive” structure begins to break down, revealing itself to be but an imprecise metaphor. On the one hand, should “passive” reading be associated with the default mode network and “active” reading with the cognitive control network given that it encompasses effort and non-automation? On the other hand, is the default-mode network, which is associated with the free flow of thought, including reflections on past experiences and autobiographical musings, not more akin to the so-called “active” authoring of a text, while more conscious decoding activities are more aligned with the “passive,” non-creative side of the opposition? There is not a right answer because the binary system of “active” and “passive” reading devised by the poststructuralists does not have a cognitive underpinning. It is more appropriate, instead, to say that reading—whether the text presents a low or high level of formal difficulty—engages both the default mode network and the cognitive control network at varying degrees, and the extent to which readers toggle back and forth between these modes is largely on their level of experience with the difficulty of the text. The more skilled the reader—with skill resulting from age and practice—the more the default mode network appears to be engaged.

Applying a cognitive framework to the understanding of an experimental text such as that of Julio Cortázar, and checking some of the assumptions on the mental processes involved in reading therein can yield some interesting results. For one, experimental texts, in that they create ambiguity for their audience, do indeed play on the brain in a very distinct way, with neurological studies showing how the generation of inferences sparks noteworthy activity in the gyrus and the right hemisphere. Secondly, much of distinction between what has come to be identified in literary studies as “active” and “writerly” forms of texts can be explained through an enhanced recruitment of the right hemisphere for the creation of meaning. This latter point is especially significant because it allows us to move beyond certain improper terminology. On the one hand, we must acknowledge that the dichotomy between “passive” and “active” reading is fortuitous, and founded in assumptions that more strongly resonate with what Leonard
Diepeveen has identified as difficulty as a “cultural gatekeeper,” rather than with any cognitive reality. The mind is always active when it processes language. It is only that different texts will be processed by readers’ brains in various ways, depending on individual factors such as working memory capacity, for instance. On the other hand, recognizing the role of the right hemisphere in meaning-making allows us to convincingly contest against the outdated claim that a less engaged, more linear form of reading is necessarily a “female” (“lector hembra”) manner of reading. In fact, were it to be found to be statistically significant, the cognitive evidence would point in just the opposite direction.

Cortázar’s *Rayuela* is an ideal work to analyze through the lens of new discoveries in the cognitive sciences specifically because its structure revolves around this very commonly assumed and promulgated notion of a distinction between active and passive reading. Directly in the introduction, readers are asked to choose one of two paths that correspond with either form of reading. Invaliding the terminology featured in this dichotomy, however, does not necessarily call for a lesser appreciation of the text. In fact, because the terms here are so closely associated with offensive and outdated politics, a cognitive counterpoint ought to be welcomed. And, most importantly, recognizing through a better understanding of cognition that even the so-called “passive” path of the work engages the mind in a very active way—as all reading does—should only deepen the admiration for the text.

4 “[P]or esto os quedáis en la labor con toda vuestra paciencia y cortesía”\textsuperscript{76} Embodiment and Suspense in Macedonio Fernández’s *El Museo de la novela de la Eterna*

At the structural level, Macedonio Fernández plays a games with his readers in *Museo de la novela de la Eterna*. For the most part, these games reflect the same kind of negation of the rules of logic and convention that take place at the microstructural level, where contradictory entities can paradoxically co-exist and where traditional syntax makes way for more exploratory

\textsuperscript{76} Fernández, *Museo de la novela de la Eterna. Edición Crítica*, 18 (see chap. 1, n. 127).
forms. At the basis of the game is Macedonio’s desire to make readers work as arduously as authors (if not, in effect, to have them become authors in a process of co-creation), and for them to remember that the story in which they are engrossed is but a reflection and poor approximation of reality, not reality in itself. In a quote often cited from Museo, Macedonio states clearly: “Yo quiero que el lector sepa siempre que está leyendo una novela y no viendo un vivir, no presenciando ‘vida’.” With his anti-realist project, Macedonio creates several games by which he hopes to entertain readers (notwithstanding himself, certainly), including the encouragement of a non-linear style of reading, whereby readers are self-reflexively brought into the text and given instructions, and the deferral or postponement of the main event—the “Novela,” which Macedonio promises in the subtitle of Museo will be the first “good” novel—through a series of fifty-six prologues.

The structure that Macedonio’s work takes is especially important in the context of reader response because, as the author engages in his structural games, he offers a detailed commentary on how his narrative transformations ought to affect readers. The readers to whom he refers are inevitably implied readers (in the Iserian sense), and, as we will see, they are also very much characters within the work itself (along with the implied author, who—adding to the layers of confusion in the novel—is meant to be understood as Macedonio). Nevertheless, the insights Macedonio offers on the reading process in the face of structural ambiguity, confusion, and the new, “good” novel ought not to be ignored, as they are valuable observations by an experimental author himself. In many ways, Museo, in that it is a self-referential work that continually comments on its own production and reception, is a lengthily documented response to both the process of authoring and the process of reading. This double layering means that there exist several different levels of response to the novel which continually overlap and sometimes confusedly interact with each other. On the one hand, Macedonio creates an implied reader who very much behaves like a character in the story. Several such “lectores”, in fact, make cameo appearances throughout the work, especially towards the end of the novel. On the other hand,

77 Ibid., 37.

78 Ana Camblong and Adolfo de Obieta’s edition of the novel has 56 prologues, although Macedonio’s notes included others.
actual readers are also engaged with and responding to the text that Macedonio is offering. Sometimes, their responses match those of the implied readers, but other times, they diverge. The interplay between these two levels of response—that imagined by Macedonio, and actual responses to Macedonio’s musings—is a rich source of understanding into the reading process.

Macedonio introduces several different types of readers throughout *Museo*, including for instance, the “lector de comienzos,” the “lector crédulo” and the “lector emocional,” but two of the most important are the “lector seguido” (sequential reader) and the “lector salteado” (skipping reader). These two readers in many ways go hand-in-hand with Julio Cortázar’s “lector hembra” and “lector cómplice” and reflect Roland Barthes’ division between the writerly text and the readerly work. Macedonio favours and has written his work for the “lector salteado”—the skipping reader—and encourages all readers to adopt this reader’s methodology, which Macedonio views as an act of creation. In defining the terms, Macedonio, in his characteristic way, playfully confuses the two, along with the acts of reading and writing. The confusion results from his having written an inherently discontinuous novel which, even when read linearly, is read in a skipping fashion. Macedonio writes:

> En que se observa que los lectores salteados son, lo mismo, lectores completos. Y también, que cuando se inaugura como aquí sucede la literatura salteada, deben leer corrido si son cautos y desean continuarse como lectores salteados. Al par, el autor descubre sorprendido que aunque literato salteado, le gusta tanto como a los otros que lo lean seguido, y para persuadir a ello al lector ha encontrado ese buen argumento de que aquéllos leen todo al fin y es ocioso saltar y desencuadernar, pues le mortifica que llegue a decirse: ‘la he leído a rato y a trozos; muy buena la novelita era algo inconexa, mucho trunco en ella.’ (25)

According to Naomi Lindstrom, Macedonio is on a quest to reform readers’ reading habits and to develop in them new skills that correspond with the process of authoring. In other words, he wants them to adopt the method of the skipping reader and be “jolted out of their sloth and made

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to co-create.”  

The project is extreme in nature, Lindstrom says, as Macedonio realizes that “[d]rastic measures are necessary to shock readers out of long-ingrained habits” (82). Throughout Museo, Macedonio presents his readers with logical inconsistencies, glaring ellipses and omissions, and open-ended questions meant to incite reflection on the nature of the text readers hold before them. For example, at the intersection of the prologue and novel sections of Museo, Macedonio asks readers, “ESTOS ¿FUERON PRÓLOGOS? Y ESTA ¿SERÁ NOVELA?” and offers them a page that is nearly blank on which he declares, “Esta página es para que en ella se ande el lector de antes de leer en su muy digna indecisión y gravedad” (126). Readers are the ones who are to decide what the book holds—they are the ones who will create the story therein. According to Lindstrom, Macedonio’s play is pedagogical in nature. She writes, “Macedonio is determined to create a system to train competently inventive readers, just as the educational system now trains readers to receive literary works capably.” The game, however, is not altogether altruistic for this re-education is also a by-product of Macedonio’s attempt to reach a higher artistic or philosophical order, a kind of nirvana he describes as the “Nada”—nothingness. Creating a form of the “Nada,” as Lidia Díaz notes, is Macedonio’s method of “intentar la inmortalidad, la eternidad que gira en torno a la palabra.” Yet, whatever his motivations may be in creating his experimental piece, in the end, what Macedonio offers in Museo is a long commentary on two supposedly very different styles of reading. Although the reader who reads the work in a linear fashion, not missing any of its content, would seem to be the one who is most engaged with a given text, Macedonio shows through a paradoxical kind of logic that it is in fact the skipping reader who is most actively involved in reading, generating inferences and co-creating the work along with the author. Macedonio has organized Museo for this latter reader, and it is this one who will enjoy the discontinuous narrative (or rather, the anti-narrative) the most. The others, Macedonio predicts, will grow frustrated with the chaos, tire of the game, and exercise their right to cast the book aside, or else


81 Ibid., 34.

struggle through the reading uncomprehendingly. For these readers, Macedonio has written Adriana Buenos Aires—Museo’s “Other.”

Macedonio’s implication of the reader throughout Museo has important cognitive ramifications. Just as the word “la novela” means at least doubly throughout the text—signifying both the novel itself and the Presidente’s estancia, the word “lector” takes on two different levels of meaning. On the one hand, the “lector” of the text is the implied reader (imagined by the implied author) who sometimes appears as a character. On the other hand, the word “lector” also points to the actual readers. These actual readers are to negotiate between both these realities at all times, and decide when the author is referring to the character “lectores,” or the real “lectores”—or both. What results is a complex, self-referential game that is carried out throughout the work, in both the prologue and the chapter sections. In the prologue section, readers are often addressed directly, sometimes in the very title of the introductory pieces. For example, Macedonio offers readers the following prologues: “A los lectores que padecerían si ignorasen lo que la novela cuenta,” “Al lector de vidriera,” “Prólogo primero de la novela para el lector corto,” “Al lector saltado,” and “Imprecación para el lector seguido” (25, 76, 82, 119, 120). This opening section of Museo is where readers are strongly encouraged to become “lectores saltados” and to read the text in an engaged fashion, filling the gaps that arise with the products of their own imaginations. Readers are also given instructions as to how to feel about the text as they move along through it. The author advises,”

Si alguna imperfección halla todavía el lector en el pasaje subsanado, en la explicación presente pídele apreciar la tranquilidad de lectura que hasta esa página le he resguardado con mis esfuerzos que en ese momento culminaban para no dejar entrar en la novela al chico de largo palo. (29)

At times, the author uses slightly more underhanded techniques to convince his readers to approach the text in his preferred manner. He tells them they may read as they please, but insists that the readers who do not race to the end of the novel to find closure are his favourite kind of

\[83\] Camblong note how the “chico de largo palo”—stick-boy—is a metaphor for anti-realist techniques; Camblong, MNE, 29nD (see chap. 2, n. 210).
readers. He says, “Si una novela como la así sintetizada cree usted que tenga probabilidades de gustarle, léala,” but then insists,

El lector que no lee mi novela si primero no la sabe toda es mi lector, ése es artista, porque el que busca leyendo la solución final, busca lo que el arte no debe dar, tiene un interés de lo vital, no un estado de conciencia: sólo el que no busca una solución es el lector artista. (70-71)

In this passage, the author does not entirely disparage readers who enjoy conventional forms, but he does attempt to coerce them into reading more creatively by talking about other forms of reading in a more favourable tone. Elsewhere, such as in the dedicated prologues mentioned above, the divide between the real and the implied becomes clearer as the author addresses only particular segments of his readership—the “lector saltado” or the “lector seguido,” for instance. For example, in two prologues addressed to these “lectores” respectively, readers should feel more aligned with one type of reader over the other. The apostrophe with which they do not identify, then, seems intended for some other reader—an implied reader who is clearly envisioned by the author.

The division between these two levels of “lector”—the real and the imagined—is far more pronounced in the “Capítulos” section of the novel. Here, readers actually become characters in the strictest of sense of the word in the fiction, pronouncing dialogue and having their names (or function, rather) encoded onto the page as speakers. In the first such intrusion into the novel, the “lector” has the opportunity to offer feedback on the course of action in the story. It is the characters who implore him to enter the fiction. “¿Por qué no nos da su idea, distinguido lector, o se habrá distraído y nos habrá dejado solos?,” Quizagenio asks, after Dulce-Persona laments the fact that the reader is never consulted (162). The “lector” then enters the fiction as a character who exists on the same level as Quizagenio and Dulce-Persona, and weighs in with thoughts on the story to date:

—Lector: Soy tan interesado en vuestras vidas como discreto de ellas; estad seguros de que sólo me alejo cuando sospecho la fatalidad de un beso, y vuelvo cuando calculo que un espectador amistoso no es indiscreto. Ahora os atendía, cómo no, y aprobaba vuestro plan. (162)
Later, the separation between the actual reader and the implied or character reader grows even larger when the latter takes on several different identities, some of which are given very specific personae. This time, the reader is initially invited into the fiction by the author himself. The “lector” says that, just like Federico who wishes to be a fictional character in the author’s creation, he, too, would love to be a character, if only for an hour. “¡Oh si yo pudiera colarme de noche a vuestras conversaciones y tener siquiera por una hora el ser de personaje!” the reader sighs (176). Another reader—named “Nuevo lector” then enters the fiction with the same wish, instantaneously bringing it to fruition by the very act of speaking it. In the same scene, the author describes yet another reader he had once encountered, a twenty-three year old smoker whose cigarette ash would fall dangerously close to the pages of the book, causing consternation in the author. Amusingly, not all “lectores” are equally welcomed into the fiction. Towards the end of the novel, a “lector” who is frustrated with the inaction in the plot and the work that is delegated to him by the author interjects, “¡Basta de argumentos de personajes y más argumento para la novela! Desde hace varios capítulos está inmóvil. Oh, cómodo es hacer una novela en que el lector tenga que pensararlo todo. Aquí no hay nada sobrentendido, todo debe ser contado” (240). The author exasperatedly answers that this reader should not want a typical storyline offering a conventional sense of closure, and retorts, “¿No leíste mis prólogos?” (241). In a revolt, other readers intervene and chase out this “lector de desenlaces” who wants nothing but a rosy tale. They then implore the author to continue on with the novel, insisting they will delight in the fact that it does not offer a conventional ending.

Until the point in the novel where the reader becomes a speaking character, and then splinters into a series of character readers, it is sometimes unclear where the division between implied reader and actual reader lies—when the actual readers are really being addressed. This is especially true of the prologues which set up the fiction, but it also occurs in the chapters section of the novel. For example, towards the end of the novel, the author chastises the reader for not skipping through the text: “lector, usted no ha leído bien saltado, entonces. Ha caído usted en el vicio de la lectura seguida” (209). It is unclear whether the author is addressing a fictional reader, or the actual reader who may indeed have read the book page-by-page (and perhaps uncreatively) up until this point. Camblong suggests that the introduction of the reader into the text is a method that Macedonio uses to make his readers participate more actively within it. Upon the first interjection of a character reader—the instance in which Quizagenio and Dulce-Persona
extend an invitation to the reader into the text that is taken up quite literally—Camblong comments, “Traer el lector a escena es otro modo de cambiar de tema, de dejar inconclusa una cuestión, interrogantes sin contestar; tales mecanismos reclaman la participación activa de la lectura.”

Cognitively speaking, however, the involvement that Camblong identifies is purely metaphorical. Readers may indeed become more involved in a text when they are addressed, but it has been shown that identification with the actors of a passage only occurs under certain circumstances.

Theories of embodied cognition propose that language comprehension is based on experiential knowledge. Reading, then, involves creating mental simulations of the events and objects described in a given text. In line with this model of understanding, Tad T. Brunyé et al. tested to see whether readers consistently embody the perspective of the actors in a text, or whether they mentally simulate events from an external “onlooker” perspective. In a first experiment, the researchers showed that readers indeed embody an actor’s perspective when the pronouns “you” or “I” are used (as opposed to when the pronoun “he” is used, which leads them to adopt an external perspective). A second experiment, however, better identified the conditions under which this identification with the actor takes place. When the pronoun “I” is presented in a context that makes clear it stands for someone other than the person reading, readers adopt an external perspective. It is only when the context is ambiguous that readers will embody the perspective of the actor. The researchers conclude that pronoun variation and the context of discourse has an effect on the way readers embody experience in reading narratives, and that “readers embody an actor’s perspective only when directly addressed as the subject of a sentence” (27). When readers are directly addressed in the opening sections of Museo, then, it seems that they are likely to take on the perspective of the addressee. Once Macedonio’s reader becomes a character, though, one which formulates and utters individual thoughts, readers are less likely to engage in this same process of personalization, even though the word they come across in the text is the same—“lector.” In this sense—if embodiment is our measure—readers

84 Camblong, MNE, 161nD.

paradoxically become less involved in a story the more they are woven into the fabric of its narrative. That is to say, the more readers become internal to a story, the more likely it is they will adopt an external perspective. Of course, Macedonio plays with these two extremes throughout Museo, with the result that readers’ embodied involvement in the happenings that are described fluctuates over the course of the reading.

Importantly, Museo plays not only with these differing levels of identification in adopting a self-referential, structurally circular form, but it also presents itself as a venue where different forms of reading are discussed openly—a museum of readers, of sorts. The game in which Macedonio is engaged with his readers is one in which he challenges them with a complex, discontinuous, and open book, almost daring them to read it by singing high praises of the ideal reader who perseveres through his pages; in the end, though, what Macedonio offers through his meta-commentary is also an exploration and exposition of the different styles and methods of reading. Macedonio begins with the assumption that readers not only interpret differently, but that they also respond to texts differently—emotionally and physically. The task that Macedonio has accordingly assigned to himself in Museo includes both weeding out those readers who have not the patience to struggle with an experimental text, and teaching those who are willing to be converted to adopt to a more creative style of reading. Not only are readers different, Macedonio affirms, but their capabilities can also evolve over time.

One of the most important structural games that Museo offers is its long series of prologues that defers the onset of “La Novela” for over one hundred pages. This collection of prologues—which the author calls an “Obras Completas de Prologar”—is, in fact, just as lengthy as the novel itself, which is carried out over twenty chapters (115). The length and also the content of the prologues put into question their status as paratext, and they end up being an integral part of the novel as a whole. As Camblong notes, if the author of the prologues becomes like an implied (or character) author, the prologues in turn become chapters: “Si el enunciador teórico de los prólogos pasa a ser autor de ficción, los prólogos, homológamente, pasan a ser capítulos.”

These prologues serve a variety of functions in Museo. For one, the ontological shift that Camblong identifies creates a game of tangled signifiers and signifieds, quintessential to

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86 Camblong, MNE, 106nC.
Macedonian play. For example, as the prologues defer the entry to the novel, they in themselves become its entrance. Their ending, moreover, simply marks a new beginning. The distinction between beginnings and endings, then, becomes confused, so that the two terms become synonymous rather than antithetical (a game of semantics that Macedonio enacts at the structural level). The dissolution of the logical divide between the two terms persists throughout Museo. In keeping with this anti-teleology, for instance, the epilogue of the work is followed by a “Prólogo final”—a startling oxymoron. Similarly, the end of the novel remains open because the author refuses to provide his readers with closure: the characters simply walk out of the estancia “La Novela,” as though they are walking off a set (253). For Joe Nitrik, Macedonio in fact transforms the idea of a beginning into an ongoing duration, so that the novel is continually opening. He writes, “Comenzar (abrir) es, semánticamente, lo mismo que desarrollar pero aquí [. . .] el desarrollo es en una duración que por ser de presente es de cada instante, la novela se está abriendo, se está desarrollando, se está produciendo.” If the novel is forever opening, and it never closes, then the process of its creation is infinite.

As Macedonio relaxes the limits of time and space in this way, he also relaxes the pace of the novel. An important function of the prologues, beyond the rejection of teleological forms, is the postponement or deferral of the novel within Museo. Macedonio uses several techniques to accomplish this goal, including that of attempting to deceive his readers into believing that many of the prologues they are reading are the last of the series. Sometimes, the author tries to raise readers’ expectations through the title of a prologue, such as “A las puertas de la novela: (Anticipación de relato),” whereas other prologues mediate this anticipation, such as “Otro Prólogo” and “Otro deseo de saludar” (68, 88, 52). On other occasions, the author is more dramatic, announcing, “¡Adiós, lector!...”—bidding farewell to his readers as though the prologues were coming to an end and his voice therein would be extinguished (55). Finally, towards the end of the series of prologues, the author tells his readers that the novel is about to open. Before he lets them go, however, he offers them yet another prologue, this time entitled “1º Nota de posprólogo; y 2º Observaciones de anti-libro” (124). The author knows that he is bombarding readers with prologue upon prologue, but says unapologetically, “Qué queréis: debo

87 Nitrik, “La ‘novela futura’ de Macedonio Fernández,” 489 (see chap. 2, n. 198).
seguir prólogos” (101). At times, he gets so carried away with writing these short pieces that he forgets entirely that a novel is meant to follow them. For instance, he says that just as he is beginning to feel comfortable writing prologues, he remembers that he is committed to writing a novel: “Me siento intimidado,” he confesses, “es por primera vez que mientras me entretenía fácilmente en hace prólogos, me doy cuenta de que estoy comprometido a una novela” (105). The main event—the novel—meanwhile, continues to grow ever more distant and elusive, as the author indulges in a discussion about this very sentiment of remembering that he needs to begin it.

Naturally, the prologues, through both their play on teleology and their deferral of the main event, have a significant impact on readers. For example, Julio Prieto says that the game of beginnings and endings is “disconcerting” in that readers are simultaneously drawn into the novel and cast out of it. Similarly, Lindstrom notes that the lack of closure and thus fragmentary form of the novel can be “irritating.” As for the postponement of the novel, it too invokes strong emotive responses from readers. Borinsky notes how the quantity (as well as the varied tone) of the prologues is confusing. She writes, “El lector que abre el pequeño volumen de Museo de la novela de la Eterna seguramente sentirá alguna confusión.” More dramatically, Mónica Bueno says that the prologues induce a kind of seasickness. Noting that “[l]os cincuenta y seis prólogos de Museo transgreden la estructura convencional de una novela”, she says that this novel “que tarda en empezar” creates a sensation of “mareo” in readers. The response to this long section of prologues, then—whether negative or positive—has a strong affective component to it.


90 Borinsky, “Macedonio: su proyecto novelístico,” 31 (see chap. 2, n. 199).

What the author is attempting to do in postponing or deferring the novel is generate suspense for this work that he has called “la primera novela buena.” In doing so, he also highlights the very corporeal nature of reading, as suspense, of course, involves the body. Peter Vorderere, Hans Jürgen Wulff, and Mike Fiedrichsen suggest that, physiologically, the experience of suspense would seem to be manifested through such empirical responses as “heart rate, systolic and diastolic blood pressure, skin conductance, respiration, eye movement, etc.” Their suggestion is in keeping with Antonio Damasio’s insistence that the body and the mind are intertwined, and that higher cognitive processes are regulated by physical sensations and emotional states. Vorderere, Wulff, and Fiedrichsen also propose that cognitive factors such as attention and interest are involved in suspense. Macedonio himself offers a commentary on maintaining the interest and attention of his readers throughout Museo, saying that the “lector seguido” or “lector de desenlaces” will grow bored and frustrated with the work: for example, the “lector” who expects a rosy tale and is ejected from the fiction by the author could not accept the novel’s experimental form. However, for actual readers, there are different factors to consider as well. First, there is the humour of the situation in which readers see their analogs appear in the fiction, and in some cases, get thrown out of it. Second, readers who hold the physical book before them may flip through its pages to ascertain the length of the prologue section before ever reaching its end. The author says that he and the readers are creating the work simultaneously, moving along at the same pace. He writes, “Así, pues, a medida que escribo, indico y espero sucesos, como el lector” (28). But in actuality, readers who read the back cover page of Museo, flip through the book, or read the novel after it has been referred by a friend or assigned in class, know that it


93 Vorderere, Wulff, and Fiedrichsen also specify, however, that it is not yet known exactly “what causal relation [these measures] have to the experience of suspense.” Peter Vorderere, Hans Jürgen Wulff, and Mike Fiedrichsen, Suspense: Conceptualizations, Theoretical Analyses, and Empirical Explorations (Mahwah, New Jersey: Lawrence Erlbaum Associates, 1996), 339.

94 Damasio, Descartes’ Error: Emotion, Reason, and the Human Brain (see chap. 1, n. 103).
contains a long series of prologues, and that this idiosyncrasy is the crux of the novel. The prologues, then, are an integral part of the work for many readers—whether they are viewed as chapters or not. This knowledge may temper the sense of impatience or urgency that readers may otherwise feel in anticipating the onset of the supposed main event, the novel within Museo. Therefore, the physical book (which the author does not account for)\textsuperscript{95} plays an important role in the generation and the moderation of expectations.

Since suspense and attention are such an integral part of Museo—both commented on overtly and elicited in its readers—they are worth examining more closely from a cognitive point of view. To the extent that the novel can be considered difficult because of its exponential series of prologues, the cornerstone of its structure, better understanding these cognitive notions can help shed light on the responses of readers that may range from delight to disengagement with the text; Macedonio himself acknowledges that by deferring (or suspending) the onset of the novel with his prologues, he risks either attracting or losing the attention of his readers. This knowledge will also help identify where some of Macedonio’s insights on the reading process are indeed accurate, and where they are closer to conjecture.

Attention—according to a model put forth by Eric I. Knudsen—involves working memory, competitive selection, top-down sensitivity control, and automatic filtering for salient stimuli. Working memory plays a large role in evaluating which information will be processed. As Knudsen explains, “attention is not ‘deployed’ but rather is an ongoing competition among information processing hierarchies vying for access to working memory. What is ‘deployed’ are top-down bias signals based on decisions made in working memory.”\textsuperscript{96} O’Connell \textit{et al.} have also shown that attention can be controlled volitionally, through top-down mechanisms.\textsuperscript{97} This deliberate control of attention onto the text is precisely what Macedonio encourages in the readers of Museo: he wants them to work, rather than to passively consume the text (as one

\textsuperscript{95} Curiously, the author seems to deny the existence of a physical support for the novel—here the book, but historically, the manuscript pages he compiled haphazardly.


would apparently do with a traditional narrative, as parodied in Adriana Buenos Aires). The author has several means for coaxing readers to continue moving through the barrage of introductions, but the primary one that is continually iterated is the reward of the “primera novela buena” at their end. Prologues traditionally create anticipation for the main event of a book, but their role is here made explicit and drawn out. Of course, there are other benefits to the reading process which can motivate readers, such as the hope of learning something from the text or the desire to better understand Macedonio as an author, for example. The possibilities are naturally limitless and unpredictable, as they depend on each individual reader. That being said, if motivating readers with the promise of an exceptional novel is the author’s strategy to maintain their interest, cognitively-speaking, his method is sound.98 Yasmine L. Konheim-Kalkstein and Paul van den Broek have shown that readers who are extrinsically motivated have longer reading times and pay more attention (as shown through recall performance) than readers who are not extrinsically motivated.99 Yet, motivation through the promise of a good read will not affect all readers equally. As Maarten A. S. Boksem and Mattie Tops have shown, individuals will lose the motivation to engage in a task if the energetic costs that are required to undertake it are perceived to be greater than the expected rewards it can generate.100 It is not just exertion over a long period of time that is a factor in the onset of mental fatigue, then, but motivation, too. If readers do not feel that the benefits of reading Macedonio is offering—discovering “la primera novela buena” or otherwise—outweigh the costs, then they are likely to be distracted or retire from the task at hand.

Mental fatigue is one of the consequences of the difficulty of his work against which Macedonio warns. Monicque M. Lorist define mental fatigue as “changes in the psycho-physiological state that people experience during and following the course of prolonged periods of demanding

98 The author writes, “Esto es la justificación de mis promesas de la Novela Buena y también de la confección de la Novela Mala pero ultima: conservar al lector en espera y en ejercicio” (118).


100 Boksem and Tops determine that the nucleus accumbens, orbitofrontal cortex, amygdale, insula and anterior cingulated cortex are involved in evaluating these potential rewards and assessing the energetical costs carrying out the task will require. Maarten A. S. Boksem and Mattie Tops, “Mental Fatigue: Costs and Benefits,” Brain Research Review 59 (2008): 126.
cognitive activity requiring sustained mental efficiency.”

Top-down processes, which are involved in “planning goal-directed behavior and conflict resolution,” as well as in sustaining attention, seem to be the most vulnerable to mental fatigue. In inviting his readers to work more arduously, then, Macedonio is also risking tiring them out cognitively, leading them to perform their task progressively worse, or to resign from it altogether. Of course, the author anticipates this eventuality, and outwardly praises the reader who will be able to keep up with his inventive prose. It is worth noting, though, that it is not only mental fatigue that can cause a decrease in vigilance, but also boredom. In fact, according to research by Nathalie Pattyn, Xavier Neyt, David Henderickx and Eric Soetens, vigilance decrement is “more compatible” with boredom than with a mental effort. If the author of Museo loses some of his readers then, as he expects, it is less likely that it is because they have overly exerted their cognitive capacities, than because they have grown bored with the text that he has offered them.

Boredom, according to Damrah-Frye and James D. Laird, is an emotion whose essential behavioural component is “the struggle to maintain attention.” It should be noted, however, that the maintenance of attention on a given topic or task is not usually consistent. Instead,

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104 The finding applies to both exogenous and endogenous attention, which Pattyn, et al. define thus: “Exogenous attention refers to the automatic attraction of attention driven by external physical events, such as the sudden appearance or physical change of a stimulus. This mode of attentional orientation is considered to function in a bottom-up manner and not under the subjects’ voluntary control. Endogenous attention, on the other hand, refers to actively and deliberately directing attention to what we believe is important, for example after being instructed to focus attention on a defined target. This is a typical top-down controlled mechanism, requiring the subject’s attentional effort” (370). Nathalie Pattyn et al., “Psychophysiological Investigation of Vigilance Decrement: Boredom or Cognitive Fatigue?,” *Physiology & Behavior* 93 (2008): 369-78.

attention, when it is directed to be engaged in a sustained manner, will naturally “ebb and flow” in the depth of cognitive processing it directs to the outside world. The thoughts unrelated to the task at hand have been studied by Jonathan Smallwood and Jonaathan W. Schooler under the name of mind wandering. Mind wandering is defined as the instances in which “our minds [drift] away from a task toward unrelated inner thoughts, fantasies, feelings and other musings” (or, more technically, when attention is “disengaged or decoupled from the constraints imposed by the task environment”). Almost paradoxically, then, while Macedonio encourages his readers to read creatively, to fill the textual gaps with the products of their own ideation, letting their imaginations run wild in an authorly fashion, he is also (likely inadvertently) coaxing them to become distracted from the task as hand, from reading the words on the page. Readers’ true challenge, then, perhaps becomes negotiating between these two impulses—reading the text at hand and mulling over the thoughts it evokes.

What is especially noteworthy about research into mind wandering is the way in which it reveals its subjective nature—insights that shed led onto why texts may elicit more boredom and disengagement with some readers over others. Mind wandering varies from individual to individual based on working memory capacity. Michael J. Kane et al. have found that individuals with better working memory capacity perform better on challenging tasks requiring concentration and effort than individuals with lower working memory capacity. Executive attention and control processes, then, explain the individual differences in how well readers can sustain attention onto the text. Experience with the material at hand, too, will impact mind wandering. When engaged in a task, individuals may either think ahead (“prospect”) or think back (“retrospect”). As Jonathan Smallwood, Louise Nind and Rory C. O’Connor have shown,

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in tasks that do not require continuous monitoring, individuals tend to prospect.\textsuperscript{110} Studying mind wandering in the context of reading, the researchers also demonstrated that interest will suppress both past and future-related mind wandering. On the other hand, when interest in reading is not maintained, experience with the subject matter will determine the nature of the wandering: individuals with a greater familiarity with the topic matter tend to retrospect, while those with less familiarity tend to prospect. There are other factors, too, that affect attentional commitment to a task, such as emotional mood states. In a study by Pennie S. Seibert and Henry C. Ellis, subjects who were sad or happy generated more irrelevant thoughts than neutral (control) subjects.\textsuperscript{111} Smallwood et al. have also found that subjects experiencing a positive mood are better able to adjust their performance after a momentary lapse of attention than those experiencing a negative mood.\textsuperscript{112} Personal concerns, then, affect the reading process and the degree of attention paid to the text. Age, gender and education appear to have a minimal impact on sustained attention,\textsuperscript{113} but interestingly, some cultural factors do appear to have an influence on distractability. Laura E. Levine, Bradley M. Waite and Laura L. Bowman have found that youths who spend more time instant messaging (IMing)—a multitasking activity—are more distractable when engaged in activities that require focused attention such as reading.\textsuperscript{114} It would seem, then, that the experience of reading \textit{Museum} when the text was first published in 1967 is a forcibly different experience from reading it in the context of today’s technological advances, even from a cognitive point of view where attention is concerned.


In *Museo*, there are two very important games at the structural level that play on and highlight key cognitive principles. First, Macedonio exploits the self-referential potential of storytelling and involves his readers within the very narrative they are reading. Arguably, this is his attempt to engage his readership—by quite literally having them involved in the text. Ironically, though, this scheme can only go so far, as readers do not tend to take an internal perspective to the text when it is clear that the character or apostrophe in question does not refer to them. This example, however, nicely highlights how theories of embodied cognition in the cognitive sciences can contribute to literary critics’ better understanding of the dynamics of a text. Macedonio’s second game—the very lynchpin of the novel—is his lengthy deferral of the “first good novel” by way of an extended series of prologues. This postponement of the main event and the anticipation that it can create naturally has very corporeal consequences for readers, centered around the generation of suspense. While Macedonio devises a sound way to try and maintain his readers’ attention—by promising them a reward for their troubles—, the one sticking point he seems to overlook is that readers must also deem the reward worthy of their travails. Otherwise, their attention will wane. And, interestingly, for all the talk of the difficulty of the text, if attention does wane, it is more likely from boredom than from mental fatigue.

What is particularly precious about the novel is the commentary on reading offered by Macedonio himself. This discussion is both ironic and humorous, but also frank. Perceptibly, Macedonio readily acknowledges that some readers, particularly those who tend to prefer straightforward stories that do not dabble in the metafictional, may very likely tire of and abandon reading his text. In doing so, he also points out precisely which textual elements he believes can be difficult for readers. While this list is as vast and expansive as the novel itself, some of its most noteworthy items include creating inferences and connections for oneself (as the “lector salteado” must do), wrapping one’s head around deconstructed dichotomies (such as the dissolution of the binary terms “beginning” and “ending”), and, of course, the deferral of an anticipated event. While the authorial observations on these items may naturally be biased and playful, they are nevertheless also rich and enlightening, whether or not they are supported by the latest research in the cognitive sciences.
“It will occur to him later that maybe the whole story was a lie”:\textsuperscript{115} Narrative Comprehension and Long Term Memory in Thomas Pynchon’s \textit{Gravity’s Rainbow}

Thomas Pynchon’s \textit{Gravity’s Rainbow} has garnered for itself the reputation of being among the most difficult English-language books of our day. A perennial challenge for readers, it has elicited scores of commentary from both academic and generalist circles. While the novel epitomizes Leonard Diepeveen’s notion of difficulty as a “cultural gatekeeper,” it does so in a very particular way, with the portion of the audience that claims to understand the work often readily (and in online forums, rather sympathetically) acknowledging the challenges it has posed them. By and large, the most important subversions of traditional form that are explored in \textit{Gravity’s Rainbow} take place at the macrostructural level, through the sheer complexity of its narrative. Self-reflexive, paradoxical meta-commentary is not a feature of this text, but the extreme, winding structure of its narrative is nevertheless an experimental form that subverts conventional linear storytelling and possible expectations of coherency. The plotline is a twisted and convoluted labyrinth snaking its way over 700 pages of text (or more, depending on the edition). Dead-ends are multiple, and hardly ever clearly identified as such. A cast of over 400 characters populates the maze, adding to its complexity. Even the supposed protagonist, Lieutenant Tyrone Slothrop, an American soldier hunting after the truth about a secret German rocket, is no Adriane’s thread, as he is not necessarily the focus of the text, often lengthily dropping out of it, and regularly ceding his perspective to the omniscient narrations of other characters. Folds in time and imagination, with analepses and prolepses, dream sequences, and drug-induced hallucinations further complicate the narrative. Confusion and disorientation are naturally common responses to the text.

One of the major themes that runs through \textit{Gravity’s Rainbow} is that of conditioned responses, seeing as how the protagonist Slothrop was submitted to behaviourist experiments in his youth. This notion of automation carries over to the textual level as well, and part of the difficulty of the text appears to be the result of an authorial attempt to de-automatize readers by subverting their possible expectations of coherency. Pynchon does this by seemingly inviting readers to

\textsuperscript{115} Pynchon, \textit{Gravity’s Rainbow}, 293 (see chap. 1, n. 127).
make sense of the massive patchwork of stories and characters that he presents. Like Slothrop, who suffers from an acute paranoia and who thus continually draws connections amongst the random people and situations he encounters, readers are lured into finding the underlying logic of Pynchon’s vision. Bernard Duyfhuizen calls this Pynchon’s “reader-trap”—his use of techniques that “court the conventional readerly desire to construct an ordered world within the fictional space of the text, but that on closer examination reveal the fundamental uncertainty of postmodern textuality.” The game extends onto many levels, with wholeness of character, completeness of plot, and soundness of underlying message all compromised in various ways. In other words, traditional narrative forms and conventions are considerably subverted (even satirized) throughout the text. While the puzzle-like nature of the game can be inviting and engaging, it is also just as likely to frustrate and discourage the readership.

Both academic and popular audiences have been very vocal in their response to *Gravity’s Rainbow*, particularly where narrative difficulty is concerned. Early scholars of the novel were quick to point out the elements of the text that are likely to baffle readers—namely, the large cast of characters and the strobe light of a plot that flashes from scene to scene, making few if any connections among them. Over time, perhaps more as by-product of the ages than any inherent thrust within the novel, *Gravity’s Rainbow* began to be viewed through the lens of postmodernism, an interpretive framework prompted in large part by Brian McHale’s analysis in the 1979 article “Modernist Reading, Post-Modern Text: The Case of *Gravity’s Rainbow*.”

The push to try and make sense of the novel, even whilst acknowledging the futility of the endeavour, has persisted over the four decades since the novel was published, a testament to the irresistibility of its puzzles for many readers. The search has ranged from broad programs for “deciphering” the work (for example, Mark R. Siegel says in 1977 that he hopes to uncover a “holistic understanding of the novel” through the analysis of its fragmentary parts), to considerably scaled-back expeditions for more condensed nuggets of meaning, reached by

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teasing out some of the smaller webs within the book.\textsuperscript{118} In either type of pursuit, readers show themselves to be amply engaged with the text, finding various patterns among its array of elements, ideas, and themes.

The popular audience has remarked plentifully on the text online. In fact, the book appears to have become something of a cult classic. Most of the commentary revolves—unsurprisingly enough—on the difficulty of the work and the challenge of reading the novel from end to end, a feat that overwhelms many readers. While microstructural details like the astuteness of the vocabulary is often highlighted as one of the elements responsible for the impenetrability of the text, the convolution of the plot, an element that works at the macrostructural level, is usually identified as the primary cause of difficulty. What the online forums especially reveal, however, is the extent of the negative response that the text elicits, with readers often dropping out of the reading, or shelving the work to return to it at a later date, if ever. A trend has come about in forums for \textit{Gravity's Rainbow} whereby readers divulge either how long it took them to finish the book (which could be anywhere from a few weeks to twenty-five years), or where they finally abandoned the read, be it in disinterest or frustration.

Despite their differing levels of formality in their written critiques of the text, what both academic and generalist audiences often underscore is the underlying affective nature of their response to the text. Descriptors like “bewildering,” “confusing” and “disorienting” are often used in both types of circles. Particularly with the commentators online, the impact that the book is perceived to have on the brain is a special area of note. Speaking in metaphors and hyperboles, of course, some commentators warn other potential readers, “you’re [\textit{sic}] brain will explode,” should they take up the book.\textsuperscript{119} Another forum visitor claims that \textit{Gravity's Rainbow} “fortifie[s] the gray matter,” harking back to the idea that difficulty is good because it works out

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the brain just like a good exercise routine works out the body.\textsuperscript{120} Even more interestingly, though, many readers speculate as to the underlying cognitive functions that could necessarily be strained before Pynchon’s expansive narrative web. Attention and memory are particularly noted, with the unconventional narrative playing on them in a way that more traditional, linear and straightforward works do not. For example, one reader says, “This beast is not for the feint[sic] of heart, or those with short attention spans.”\textsuperscript{121} Others who also identify problems of attention sometimes blame themselves over the author for their inability to keep up with the twisting storyline: “Sometimes in the midst of reading this book, I would realize that I had no idea what was going on. I was never quite sure if this was because my attention was slipping.”\textsuperscript{122} Similar statements are made about memory. For example, one forum visitor writes that reading \textit{Gravity’s Rainbow} “requires unusual feats of memory and patience on the part of the reader,” suggesting that this book works plays on memory in a very distinct manner.\textsuperscript{123} The overwhelming bevy of information contained within the book, much of which is never fully organized or explained by the author, is seen as the primary challenge for readers in this respect. Interestingly, the way in which readers perceive the information as being maintained in memory is especially enlightening. One reader says candidly, “For the first 20 pages or so, I struggled. Everything after that is a blur. The memories of events that occurred are stacked in my head in a way that no other information is stored. I know of events, but I don’t know who was involved, or in what sequence they happened.”\textsuperscript{124} Another echoes, “you won’t be able to fold it [the story]
into a neat little packet and smoothly file it away in your brain.” Information in the novel is seen to be in disarray, and because any attempt to reconcile it and its patterns is necessarily futile as this endeavour would effectively be a fall into a “reader-trap,” it becomes difficult to retain information in a way that makes it mean so that it can be easily retrieved when recalled by the text. In reality, these readers are quite right to point to problems of memory (storing information within it, retrieving it at a later time) when they attempt to account for the reasons behind the difficulty of the text. Turning to the latest studies and paradigms used in the cognitive sciences, it is possible to shed even more light on the matter.

The current view in the cognitive sciences on language and story comprehension revolves around the framework of what is known as situation models. Until the early 1980s, it was believed that a representation of the text itself rather than the situation the text describes is what is stored in the mind and retrieved when recalled at a later time. However, this view changed with the publication of two major works in 1983, which suggested that language comprehension depends on mental models (Johnson-Laird), or situation models (van Dijk and Kintsch). Both these theories proposed that language comprehension involves the mental representation of what the text describes rather than that of the text itself, and that this construction is what gets stored in long-term memory, from where it can eventually be retrieved. In essence, the text is a “set of processing instructions” for the construction of the situation which it describes. While a number of situation model frameworks have been elaborated over the years (including the


construction-integration model, the capacity constrained READER model, and the landscape model), the Event-Indexing Model introduced by Rolf A. Zwaan and Gabriel A. Radvansky in 1988 is especially relevant for the study of the difficulty in *Gravity’s Rainbow*.

This particular model, in addition to examining how working memory and long-term memory come into play in reading, identifies a non-exhaustive list of five dimensions that readers track as they process the text: space, causation, intentionality, protagonists and time. Much of the subversion that takes place at the macrostructural level in *Gravity’s Rainbow* pertains precisely to these dimensions.

Zwaan and Radvansky distinguish among three states of situation models: the *current* model is the model that is constructed as the words on the page are read; the *integrated* model is the model that is in process and continually updated; and, finally, the *complete* model is the model that is stored in long-term memory. The *complete* model, it should be noted, is not necessarily the final model, as it can always be modified with time as new inferences and interpretations are made. The situation model relies on a framework for memory developed by Ericsson and Kintsch that consist of short-term working memory (STWM) and long-term working memory (LTWM): the current model is held in STWM, the integrated model in LTWM, and the complete model in long-term memory, and what links the models in STWM and LTWM are retrieval cues foregrounding relevant information in LTWM to update it with new information from STWM. However, while this memory model does go a long way in offering a theory for


how long-term learning occurs, a different view also exists. In fact, the framework elaborated by researcher Alan Baddeley arguably carries more currency among cognitive psychologists.

It is in the 1960s that a distinction between short-term and long-term memory was originally made. While the framework was hugely influential, it did stop short of explaining certain findings on cognitive capabilities, namely, the way that amnesiac patients with severely impaired STM but intact LTM are still able to recall, to a certain degree, sequences of digits as they perform cognitively demanding tasks. (The experiment was prompted by the surprising way in which such patients are capable of long-term learning and leading completely functional lives, while the STM model in question implied they would have had severe problems in cognition in general). To explain such findings, Baddeley and Hitch redrew the concept of short-term memory, proposing a three-component model of working memory. The model was comprised of a central executive, conceived as purely an attentional control mechanism, and two subsidiary short-term storage systems: the phonological loop for speech, and the visuospatial sketchpad for imagery. Later, Baddeley added a third storage component—the episodic buffer—which consists of a multi-modal storage system (that is, it can store information coded in various forms) that acts as an interface between the two subsidiary storage systems and LTM, binding information between them. The episodic buffer helps explain phenomena like chunking, a term coined by George A. Miller, whereby information from long-term memory can be used to group together a string of data into smaller chunks for easier recall. While the dual-storage working memory framework could not explain where the chunks (possibly using various codes) would be temporarily stored, the revised working memory model made it possible for this information to be temporarily stored in the episodic buffer. From a neuroanatomical point of view, because the


buffer serves such a critical cognitive function, it is likely not located in a single part in the brain; instead, it would be spread about, benefiting from the redundancy. Baddeley suggests, however, that the frontal lobes are most probably significant to the episodic buffer, just as they are for the central executive. 

Importantly, Baddeley has underscored how the working memory model differs from Ericsson and Kintsch’s conception of short-term working memory and long-term working memory, the model that Zwaan and Radvansky rely on in elaborating their theory of situation models. Their proposed framework, Baddeley notes, involves simply the activation of existing information in long-term memory. As such, it cannot explain how new structures can be created from this information, held and manipulated. Cognitive evidence, moreover, further complicates the matter, as amnesiac patients with LTM problems are able to perform well in problem-solving and immediate recall, tasks that involve creating long-term representations. The episodic buffer, on the other hand, can indeed account for this reality. Given these shortcomings in Ericsson and Kintsch’s framework, it is perhaps more beneficial to interpret Zwaan and Radvansky’s notion of the situation model in light of the working memory model. Conveniently, the retrieval cues that Zwaan and Radvansky refer to also have an homologue in Baddeley’s working memory model. For Baddeley, information from the subsidiary systems and long-term memory are linked through a process he refers to as binding. Binding, in fact, is the primary function of the episodic buffer, which connects information to its context so that it may be encoded and later recollected. Importantly, while it appears to be an automatic process, the strength of the bonds will vary according to the circumstances in which they are formed.

Baddeley identifies two features that determine the relative firmness of these bonds. The first is the existence of prior associations or expectations, where semantically-related words are bound with more facility than semantically non-related words. The researcher explains, “It is easier to learn to associate the words bread and food than bread and chair.” The second is what Baddeley refers to as “mnemonic glue,” a process of consolidation for semantically distant

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138 Ibid.,” 19.
words, one which becomes progressively impaired with age (differences found in new learning between young and old subjects would be explained by this weakening in this ability to bind disparate elements together rather than by attentional capacity or speed of processing). For the older subjects, it was found that the process of binding is somewhat hindered if an attention-demanding task is performed concurrently. While binding is automatic, Baddeley explains, as it involves representing two separate features within the episodic buffer, when this buffer must share its resources (time, space) with a concurrent, demanding task, the bonds may wind up less firm. Baddeley also suggests that the central executive may, in addition to using mnemonic strategies, engage in deeper encoding, linking the new material to other schemata within episodic memory. In either case, when it comes to learning a given set of new material, the presence of additional, attentionally demanding material has a negative impact on the strength of the bonds elaborated within the episodic buffer.

The difficulty of a text may be explained differently using either Ericsson and Kintsch’s model for memory or Baddeley’s. With the former, it would lie in challenges in linking the current and the integrated model (in STWM and LTWM, respectively) so that this representation may be then stored in long-term memory. With Baddeley, problems in long-term learning would result from the creation of inadequately firm bonds by the episodic buffer between existing structures and new representations. When the difficulty of Pynchon’s Gravity’s Rainbow is viewed through this latter framework, it becomes evident that the plethora of information in the novel can place exceptional demands on attention (regulated by the central executive) and the resources of the episodic buffer, thus hindering the strength of the bonds and making it more difficult to store the narrative in long term memory. Given the length of the novel (at least 700 pages, or more depending on the edition), this last element—holding the story within long-term memory—would seem especially important to facilitate later recall when new relevant information is presented. It is rather common, in fact, that several hundred pages separate facts about characters and events that are critically linked. As one online forum visitor gripes, “A character may appear early in the novel, but not be mentioned again for several hundred

\[139\] Ibid.,” 20.

\[140\] Ibid.,” 20.
Long-term learning, then, is critical for following the narrative of *Gravity’s Rainbow*, and this is precisely what is discouraged by the text in question, ripe with details that compete for attention and space in working memory.

Despite the existence of divergent memory models, the situation model paradigm for story comprehension developed by Zwaan and Radvansky is particularly useful in studying the difficulty of Pynchon’s text. If the successful construction of a situation model is what is needed for the proper understanding (and thus easy processing) of a narrative, then it follows that the difficulty of *Gravity’s Rainbow* lies in the challenge the text poses to this formation of a situation model. The researchers highlight five salient dimensions of narrative processing, all of which are, on some level, subverted in *Gravity’s Rainbow*. The list of dimensions examined by the researchers includes space, time, cause, protagonist and intentionality. The first two perhaps ought to be discussed in conjunction, for they pertain to the construction of the spatio-temporal landscape, which Zwaan and Radvansky insist is necessary in narrative comprehension (even if it is empty). Research suggests that readers create three-dimensional representations of the spaces described in texts. When they recall information read previously, it is these representations that they retrieve, rather than a representation of the text itself. Critically, reading times have been shown to depend on the spatial layout of these representations. For instance, when an anaphoric reference for an item previously mentioned in the text is given, reading times are faster when said object is located near the protagonist (that is, when it is foregrounded, to use the terminology of Ericsson and Kintsch) (168). This distance in space is, in fact, far more important than the physical distance of the anaphor and its referent in the text itself in terms of reading speed. Also along these lines, reading times have been shown to increase when the text provides new information that is spatially inconsistent with what it has been previously read (169). The integrity of the spatial construction also has significant implications for the ease of recall. While a single situation model can be multi-faceted, when it is unclear whether or not new information pertains to the same situation, a new situation model is


created. Storing information across these multiple models, however, has a detrimental effect on memory performance, as the retrieval set size is larger (170). In what is called the “fan effect,” the overlapping of a single element across various models has been shown to reduce reading times, as the memory probe activates a large set of associations. For example, with the sentences “The potted palm is in the hotel” and “The potted palm is in the museum,” at least two sets of association would be elicited when the memory probe “potted palm” is activated (170). In terms of the dimension of time, the same logic applies. Readers appear to create new situation models when the distance in time is large. The reasoning is that while the characters may still be in the same location just a brief moment later, when larger spans of time pass, they may very likely have changed physical location. When events are closer in time, they are also more firmly bound in long-term memory, facilitating retrieval (176).

*Gravity’s Rainbow,* it could be argued, is difficult to readers precisely because it discourages the elaboration of a clear set of singular situation models that are easy to construct, store in and recall from long-term memory. In other words, long-term learning is impaired. Readers have oft commented on the sense of disorientation that they experience in reading the text. For example, using language that highly supports the theory of situation models with spatio-temporal bounds in text comprehension, one commentator in an online forum writes, “Pynchon places you into scenes and conversations with no instructions or compass.” 143 Another reader similarly bemoans, “Trying to get through this thing is like swimming blindfolded—you lose all joy in the experience and aren’t sure where you are.” 144 Part of the problem for the understandability of the text—that is, the successful construction of situation models—is that the spatio-temporal dimensions of *Gravity’s Rainbow* are not only unclear, but they often cross ontological lines, to the realm of the dream, the hallucination, and the outright fantastic. In an article that describes the “unmappability” of Pynchon’s text, critic Jose Liste Noya writes, “the postmodern textual map explodes/implodes its bounds by projecting the ‘cartographical’ congruence of non-


With hundreds of pages of vignettes, series upon series of situation models must be created, and many of these would contain a number of the same elements, as they are simply variations of a given reality (a dream, a shift in perspective). The mention of a given memory prime, then, be it a character or an item, ought to activate a whole array of associations across these models, thereby slowing the speed of reading. It would be, moreover, difficult to ascribe this new information to the proper situation model as it is often unclear which ontological dimension or character perspective is being discussed.

Two other textual dimensions addressed by Zwaan and Radvansky are protagonist and intentionality. These facets are especially important in directing readers’ focus. Readers tend to track the protagonist of a text, and in fact, can organize situation models around a person or concept. Also followed are a protagonist’s goals and intentions. In essence, a statement describing a goal serves as a foregrounding device, and so long as this goal is unsatisfied, information pertaining to it should be highly available to readers. Naturally, goal structures provide a means to understand the events of a text, so that the information is better remembered, thus more easily retrievable in the future.

Particularly relevant for the analysis of difficulty in _Gravity’s Rainbow_, research has shown that, typically, main protagonists, which are usually mentioned by name, are part of explicit focus, active in working memory, while other characters become part of implicit focus. Zwaan and Radvansky explain,

> For example, in the narrative ‘Paige went to the restaurant and ordered a steak; after her meal, Paige chatted a bit with the waiter and then she left,’ Paige is the main protagonist; the reader expects to hear more about her. The waiter, however, is part of the background, the restaurant scenario. We do not expect to hear more about him after Paige has left the restaurant. (174)

When a new scenario is introduced, the protagonist in explicit focus would remain in the buffer, while the character in implicit focus, who is bound to the previous scenario, would fall out of the buffer. One of the primary elements cited by readers as a source of difficulty in _Gravity’s Rainbow_ runs...
Rainbow is the throng of characters introduced by the author (a “motley, disorganized crew,” as David Leverenz puts it).\textsuperscript{146} Not only are these characters numerous, but it is also unclear onto which ones attention should be focused. Driving this point home, a reader comments online, “There are so many characters and I wasn’t sure which ones to mentally hold on to because I wasn’t sure if they’d be coming back later.”\textsuperscript{147} Part of the problem, of course, is that few of these characters are extensively developed. “Thinness of character in Gravity’s Rainbow,” literary critic Kathryn Hume revealingly remarks, “disquiets even the book’s partisans.”\textsuperscript{148} While this stunted character development is often viewed through the lens of postmodern aesthetics (Steven Best, for example, notes how postmodernists such as Pynchon “break with linear narrative, naïve realism, and the development of well-rounded characters with clear psychological motivations”), it nevertheless impacts the general reading process.\textsuperscript{149} The extensive list of characters, many of whom have no clearly identified goals or goals that are never satisfied by the text, and—compounding the issue further—who flip in and out of positions of prominence in the novel, trouble the construction of situation models necessary to the proper encoding and eventual retrieval of the information in a text. Some characters do resurface often in the read, such as Magda, Trudi and Saüre Brummer, friends of Slothrop who are present for at least three scenes. Other characters have little link to the rest of the cast, and make even shorter appearances within the novel. For instance, Džaqyp Qulan, a school teacher from Moscow and the son of a martyr whom Tchitcherine encounters, appears for the first time midway through the book, then only once more over one hundred and fifty pages later, in a brief mention of the former meeting. The following extract taken from a scene at the D Wing of the PISCES unit provides a good example of the challenges in determining which characters should be in focus.

\textsuperscript{146} Leverenz, “On Trying to Read Gravity’s Rainbow,” 232 (see chap. 2, n. 76).


From the conspiracies so mild, so domestic, from the serpent coiled in the teacup, the hand’s paralysis or eye’s withdrawal at words, *words* that could frighten that much, to the sort of thing Spectro found every day in his ward, extinguished now... to what Pointsman finds in Dogs Piotr, Natasha, Nikolai, Sergei, Katinka—or Pavel Sergevich, Vavara Nikolaevna, and then their children and—when it can be read so clearly in the faces of the physicians... Gwenhidwy inside his fluffy beard never as impassive as he might have wished.\textsuperscript{150}

While Pointsman and Spectro are recurring characters in the novel, tied to its primary plotlines, Dogs Piotr, Natasha, Nikolai, Sergei, Katinka, Pavel Sergevich, and Vavara Nikolaevna never reappear throughout the text. Gwenhidwy, on the other hand, is featured prominently in three early vignettes (including the one containing this passage), and is also mentioned in some of the closing segments of the novel. With the swarm of characters presented to readers—all of which are named individually, and some even with both first and last names—it is indeed difficult to sort through the list to ascribe to each one the proper level of importance, which would influence how well readers would track this personage.

Causation is the fifth and final dimension of situation models examined by Zwaan and Radvansky. The two posit that causal information linking events is tracked by readers when they attempt to comprehend a text (whether narrative or expository). These causes can be either given explicitly (with connectives such as *because* or *therefore*), or implied by the text so that readers must make inferences. What is particularly noteworthy about the dimension of causation is the way in which causal links (or lack thereof) influence later recall and reading times. Perhaps surprisingly, it is events that are moderately causally related that are best remembered, as compared to events that are causally unrelated and events that have a strong causal relationship.\textsuperscript{151} The reasoning behind this finding is that readers spend some effort forming bonds between events that are somewhat related and so they are more soundly linked and thus easily retrievable. Reading times would support this hypothesis. They are fastest for events that are highly related and thus require no inferences to be made, longer for moderately related events

\textsuperscript{150} Pynchon, *Gravity’s Rainbow*, 139 (see chap. 1, n. 127).

\textsuperscript{151} Zwaan and Radvansky, “Situation Model in Language Comprehension and Memory,” 172.
that require inferences to be linked, and longest for unrelated events, which would incite only failed attempts at finding connective inferences.

In *Gravity’s Rainbow*, it is often unclear which causal relationships link events, scenes, and characters. In fact, readers often cite this ambiguity as a leading difficulty of the text. For example, one commentator says, Pynchon “is extremely hard to follow, mostly because he throws out names of people, names of organizations—legions of them!—all made up of course, so that you’re constantly asking ‘Who? What? Wait, how does this relate to…’.”\(^{152}\) Another one echoes, “I know of events, but I don’t know who was involved, or in what sequence they happened.”\(^{153}\) Applied to *Gravity’s Rainbow*, Zwaan and Radvansky’s notion that causation is a pillar of situation model building (and thus text comprehension) would suggest that in the frequent instances where the causal relationships among disparate scenes, characters, and other miscellanea of the novel are unclear or irreconcilable (necessarily so, in compliance with the “reader trap” format), reading times would indeed be lengthened, but at the expense of proper recall. In other words, the length of perception would be maximized, but the cognitive load placed on readers’ faculty of memory would be substantial. On the one hand, these complexities may invite deeper engagement with the text as readers are forced to develop inferences for themselves; on the other, the required level of involvement may be so substantial that readers may be pushed beyond the limits of comfort, to the extent that they choose to disengage with the text altogether.

McHale has said that one of the primary difficulties inherent to reading *Gravity’s Rainbow* is the way in which the text often turns back onto itself to offer new details that modify or dismiss prior information given, forcing readers to engage in what he calls *retrospecting*.\(^{154}\) This notion of retrospecting can be viewed within the situation model framework in order to uncover some of its cognitive implications. The reason retrospecting is especially important to the notion of


\(^{154}\) McHale, “Modemist Reading, Post-Modem Text,” 86, (see chap. 2, n. 79).
readerly response is that it can highlight how various readers will create different situation models of the same text, a reality that naturally leads to and accounts for the divergent responses among them, ranging from bemusement to frustration and resignation from the text. McHale notes how the very opening scene in *Gravity’s Rainbow* is one whose ontological reality must later be revised by readers. A dream sequence is given—an Evacuation scene as a bomb flies in overhead, thought up by the character “Pirate” Prentice—but it is not clearly identified as a reverie until several pages later, when Pirate awakes. McHale says that readers would feel a certain sense of “disorientation” (85) at this shift, and that such authorial cues are part of their “de-conditioning” or “re-education” (86). He calls this narrative revision a “concretization-deconcretization” structure, and identifies three such types of structures throughout Pynchon’s text. First, there are instances where readers are warned that what follows is of a separate ontological realm, such as some characters’ drug-induced hallucinations (92). Second, as with the opening scene, the crucial information clarifying the realness of a scene is given only after it has been flushed out in all of its detail. And third, an internal contraction or “gross violation of the norms of verisimilitude” are the only items present to suggest that the scene in question is of an imagined (dreamed, hallucinated) variety. The latter two variations would be the most problematic to situation model building.

Particularly with the latter two types of “concretization-deconcretization” structures, readers can easily miss or ignore the key phrase or sentence featuring the cue for erasure. As an example, McHale offers the scene of incest between the character Franz Pökler and his apparent daughter Ilse, who, by this point in the novel, Pökler suspects is in fact a plant from the Nazis to mollify him into quietly continuing his work at Peenemünde, after mentioning his estranged daughter in passing once. McHale notes that although the scene of incest is identified as a fantasy shortly after it is narrated, “in the face of such concretely, not to say shockingly, realized actions, the retraction is apt to go overlooked” (93). He even suggests some readers misread precisely in order to avoid having to “deconcretize” the scene (93). Revealingly, critics have indeed missed this cue to retract it. McHale notes how Bertram Lippman appears to have failed to notice the retraction, writing, “Pökler’s incestuous reunions with [Ilse] are a profound act of imagination,
and the writing of these incidents is itself an impressive achievement.”\textsuperscript{155} The likelihood of misreadings, moreover, increases as the lag between the initial construction of the situation model and its eventual repudiation grows, and is it especially troublesome when the details in question are critical to the storyline. Slothrop’s various sexual escapades are a fitting example, as they are eventually revealed by the character himself to be at least in part no more than erotic fantasies. With this retraction, entire characters—memorable ones at that—must be revised or edited out of the concretized reality. McHale highlights one scene in particular in which Slothrop is invited by a girl named Darlene to her apartment, where he meets her landlady, Mrs. Quoad—a woman who is described in vivid detail (she is a widow who suffers from archaic diseases such as scurvy and hopes to meet with “a royal pretender in the gardens of Bournemouth”), and who subjects him to the “Disgusting English Candy Drill” (a “memorable slapstick scene,” in McHale’s words).\textsuperscript{156} Approximately one hundred and fifty pages later, it is learned that Darlene’s existence cannot be confirmed by the characters Speed and Perdoo (Pointsman’s agents), and that the woman who goes by the name of Mrs. Quoad is in fact a flamboyant divorcée, not a scurvy-stricken widow. Importantly, McHale points out how critic Marjorie Kaufman has misread this portion of the text and “assimilated” both these versions of Mrs. Quoad.\textsuperscript{157} More confusing still, however, even Speed and Perdoo’s confirmation faces a certain degree of uncertainty, as the two are both prone to joint fantasies, and the entire scene is given from the point of view of Pointsman who himself suffers from hallucinations. Speed, Perdoo and Quoad, then, may all be mere figments of the imagination—it is unclear.

The “concretizing-deconcretizing” structure that McHale identifies in \textit{Gravity’s Rainbow} can be reiterated with terminology from the cognitive sciences using the framework of situation model construction elaborated by Zwaan and Radvansky. To do so, in fact, helps validate McHale’s

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\item McHale, “Modernist Reading, Post-Modem Text,” 95.
\end{enumerate}
assertion that the text is prone to “disorient[ing]” readers. Promoting this confusion, first, the spatio-temporal landscape of many scenes in the novel is often unclear—either the scenes are retracted some time after they are given, or else internal contradictions suggest they are in some way unreal. Interestingly, the result of this uncertainty is that some readers will integrate elements of what ought to be two separate situation models (centred around two distinct spatio-temporal realities—or, ontological realities) into the same situation model. The case of the critic that McHale identifies as “assimilating” the earlier and the later versions of Mrs. Quoad is a highly illustrative example. In such instances of element overlap, two situation models ought in fact to be created, and the common element among them, when primed, would activate both of the models in a fan effect (which would, of course, also slow reading times). For example, the mention of Mrs. Quoad would recall both the sickly widow and her Candy Drill as well as the extravagant divorcée. Second, where the dimensions of protagonist and intentionality that Zwaan and Radvansky identify are concerned, the difficulty of Gravity’s Rainbow is compounded even further as readers tend to centre situation models around characters and their motivations. In this particular novel, contrary to traditional narratives, it is common for characters to fraction off into several possible levels of realness (sometimes with the actual ontological status never finally clarified), as with the variations of Mrs. Quoads, and even Speed and Perdoo who may in fact be dreamed up by Pointsman. Quite correctly, McHale also points out the difficulty in retrospecting a scene so that it no longer exists, or exists differently, within the narrative reality for readers. For instance, the shocking nature of Pökler’s incest scene and the hilarity of Mrs. Quoad’s slapstick scene are difficult for readers to retract, he says. Consistent with this, David N. Rapp and Panayiota Kendeou have shown that readers do not always reflect the reality of the text in their situation models. While readers are indeed able to revise and correct their situation models when they are provided with new information, they in fact are less likely to do so when elements of the existing model are simply refuted; instead, causal explanations are required for the models to be updated to reflect the text. When Pynchon neglects to provide these clear causal explanations for readers (as, perhaps, with the third kind of


“concretization-deconcretization” structure identified by McHale, centered on internal contradictions or inconsistencies that may very well be missed by readers), then, situation models are not accurately updated, and, as the reading of the text continues, it is to these erroneous models that new information is continuously integrated. The result would be a patchwork of elements from what in fact ought to be distinct spatio-temporal models—hence the disorientation and confusion that could ensue.

Importantly, Rapp and Kendeou note that even when causal explanations are given in the text to justify a revision, they are not always heeded by readers. They write, “[i]f readers are unaware of inconsistencies in a text, they are unlikely to engage in the types of activities necessary to revise expectations based on what they have read.”McHale emphasizes this point when he highlights certain cases of clear misreadings by even careful literary critics. Similarly, Tony Tanner, who identifies the difficulty of the book as “purely a question of memory,” finds another challenging construction in the novel: the second sentence of the book, he says, “initiates a syntactical expectation which isn’t fulfilled for twenty-six pages,” and he perceptively predicts that “[n]ot many readers, first time through, are going to pick that up.” Faulting author Samuli Hägg in a review of his book *Narratologies of Gravity’s Rainbow* for adopting the “informed reader” framework that ignores the very real imperfect nature of text comprehension, Luc Herman also points out several other constructions that may be easily overlooked by readers. He writes,

> I would simply suggest that many readers, even smart ones, might actually miss the ’Forty Million Frenchmen’ pun or (some of) the connections between the story about Byron and the rest of the novel, and might even give up on sorting out the instances of ‘sez.’ Probably quite a few readers will not see the nonsubversion of narrative hierarchy in the metafictional moments as parody either.

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160 Rapp and Kendeou, “Noticing and Revising Discrepancies as Texts Unfold,” 17.


Significantly, not only do readers interpret texts differently, but they are also liable to misread them as well, particularly when the text in question is especially convoluted and difficult. Despite the instructions given by the text, the situation models created are not uniform, nor are they updated in identical fashions by all readers. Naturally, the audience would have divergent emotive responses to the different representations of the text they have constructed. When these situation models are especially confused and disorientingly wound together, the response, one would think, would bear a greater risk of being negative. This reaction could then of course manifest itself in a variety of ways, the most extreme perhaps being the complete abandonment of reading the text (sometimes by way of throwing the physical book across the room, as some readers have attested to doing). Importantly, the successful construction of situation models that mirror the written text (suggesting that this text is, in fact, properly comprehended), is not an act of sheer will. Instead, several factors contribute to the construction of sound situation models.

Working memory capacity, for example, is a significant component to the processing of a narrative and thus to long-term learning. It follows that factors such as age also affect the facility with which a text is comprehended, as working memory capacity begins to deteriorate with time. Similarly, it would seem that familiarity with a given topic, independently of one’s reading skills, also helps the construction of accurate situation models, as studies showing faster recall with texts on a known topic have demonstrate. That being said, however, some element of skill does come into play, as situation model building can improve with practice. Most certainly, these examples far from exhaust the list of factors that contribute to the individualized response to a text and the accompanying perception of difficulty, but the point can be made that readers will naturally have different emotive responses to a given text, and at the root of this response are text-level comprehension issues.


164 A study showed that 3rd grade students were able to perform better than 7th grade students in a recall exercise after reading a text with whose topic domain they were familiar (the game of soccer, in this instance). “The high-knowledge students,” Zwaan and Radvansky explain, “had few problems constructing a situation model because they could assemble the model by retrieving relevant knowledge structures from their long-term memory;” Zwaan and Radvansky, “Situation Model in Language Comprehension and Memory,” 165.
The difficulty of *Gravity’s Rainbow* rests primarily at the macrostructural level, with a narrative structure that defies conventional norms of coherency, deploying in a vast multitude of different directions, never reconciling to a single point or clear thematic centerpiece, and featuring a cast of characters that is larger than that which would be contained in an entire library bookshelf of fiction novels. The strains on memory that this novel exerts are great, as many readers have identified. The reason for this is that, first, the narrative is deliberately unclear in its situation model-building instructions, so that models that inaccurately represent the text are built and continually (and erroneously) updated, compounding the problems further. What is more, even if situation models were to be properly imagined, with each distinct ontological reality and spatio-temporal framework correctly represented, because elements in the text (characters, items, place names, *etc.*) span so many of these different layers, huge fan effects would be created, slowing the pace of narrative processing as the cognitive load would be great. Second, the problems in situation model construction mean that the narrative is not only poorly comprehended, but it is also difficultly stored into long-term memory. Because of this, retrieval of its information (that is, what has already been read) is hindered, making the read that much more challenging.

Because *Gravity’s Rainbow* is so dense, it provides a great illustration of how readers can easily miss certain details in the text, which leads to different representations of what the novel contains. This, moreover, is not necessarily a failing on readers’ part, as the book, set up as a “reader-trap” according to some critics, both predicts and calls for this outcome. Not all readers, however, will consider the endeavour of reading the novel in this light. Some who believe that the work requires them to make sense of it will inevitably find themselves greatly discouraged rather early on in reading the text. A long list of readers, in fact, admits to abandoning the novel before the end of the first section, on average around page one hundred and fifty. By this point, hundreds of characters have already been introduced, and the connections amongst them and have grown only more and more disperse. The situation model building project starts to spin out of control, and model after model is constructed and revised, rarely with any certainty of the precision of the undertaking. *Gravity’s Rainbow* is not easy for readers, but for those who view it as an eternal work-in-progress may find more appreciation for and delight in reading its pages than others.

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Lost in the Funhouse, Rayuela, El Museo de la novela de la Eterna and Gravity’s Rainbow all indulge in a number of different structural games that challenge both the norms of traditional narrative form as well as the reading process. Simply put, none of these texts offers a clear, straightforward plotline. However, the way in which each novel tackles the subversion of conventional forms varies considerably from oeuvre to oeuvre. For instance, while Pynchon explores the creation of a vast, expansive, and irreconcilable narrative web that is difficult to represent in the mind, John Barth toys extensively with the metafictional paradox, with the voice of the author and even of the story itself finding expression within the fiction that he creates. The shape of the paradox is also recalled in a rather literal way throughout the text, with the first short story calling on readers to construct a Möbius strip, and every story thereafter linking to the others in a virtual narrative equivalent of this infinite form. Julio Cortázar, on the other hand, creates at least two distinct reading paths for his readers, very much in a playful choose-your-own adventure format, making for an anxious moment at the onset of the work where readers are to choose one path over the other. Macedonio Fernández also tinkers with the usual opening of the novel format, offering readers an extensive array of prologues that defer the start of the novel proper for approximately one hundred pages. If the works in question are difficult, as so many readers will readily attest, a large part of this difficulty is encapsulated in the play that exists at the macrostructural level.

Difficulty can only be qualified as such by an observer, and so it is important to better understand the cognitive reality behind these elements that readers find challenging. The lessons that can be gleaned in studying how these four texts can impact and challenge the reading process are plentiful. For instance, theories of embodied cognition propose an experiential view of language processing. It follows that narratives, too, call on the body as well as the mind to be comprehended, eliciting neuroactivity in parts of the brain that deal with sensation and even motor activity. The role of the right hemisphere in inference generation is also particularly fascinating. While the notion that the right hemisphere engages in coarser semantic coding pertains to questions relating to the microstructural level (word meaning), the implications of the proposal are vast and also extend to the bridging of narrative gaps at the macrostructural level. Working memory is naturally also at stake in inference generation. In fact, working memory capacity differences among readers helps explain much of the variance among their responses, both in terms of inference generation, but also in terms of long-term learning and ease of
information retrieval—another important component to the reading process, particularly at the level of narrative comprehension. The dominant view today of working memory is that it consists of a central executive (which is purely an attentional control), two storage systems—the phonological loop and the visuo-spatial sketchpad—and a multi-code episodic buffer that connects these systems with long-term memory. Readers are limited by their working memory capacity when they process a text, and if the information to be processed overwhelms their storage systems, it will not be properly stored in long-term memory, which discourages later recall. It should be noted, too, that a number of factors impact working memory capacity, including age and also experience (with the subject matter, or with situation model building, for instance). The multiplicity of reader responses, then, is attributable to a number of cognitive elements.

From a literary criticism standpoint, research into the cognitive sciences in an attempt to better understand how the difficulty of a text works allows us to highlights two very important points. First, the longstanding assumption that there exists an “active/passive” dichotomy in the way readers approach the text is revealed to be flawed. Reading is necessarily always a highly active activity, calling on the mind to process language, generate inferences, and embody the elements described in the text, among other processes. This dichotomy, rather than reflect any true cognitive reality, appears to stem instead from the “cultural gatekeeper” mentality identified by Diepveen, which marked the twentieth century and the time passed since then. According to this paradigm, “passive” reading is to be scorned as a thing of commoners or commercial aspirations, whereas “active” reading may provide a path to status for those who choose to trouble themselves with challenging texts. Second, literary critics often put forth a vision of the reader that is far too formal in a discussion of reader response. For example, Hägg’s notion of the “informed reader” in his analysis of Newton’s Rainbow, and Bernstein’s assumption that readers grant their undivided attention throughout the length of two interlaced passages in a section of Cortázar’s Rayuela both neglect to encompass the full reality of reading. In a very natural fashion, readers will inevitably miss certain details in a text as their attention ebbs and flows over the course of its pages. This reality in part helps to explain why readers not only interpret but also process texts differently (one way of looking at it is that they create different situation models based on the same set of instructions). The emotive responses that readers display and report flow from these deeper cognitive realities that exist at the level of text processing.
Difficulty, however, will not invariably incite negative responses. It is possible that the challenge it poses may be perceived as very enticing by some readers. Yet, in acknowledging the existence of negative responses to a text—the commonality of which can begin to be ascertained with just a quick glance at the variety of reviews posted on online discussion boards—, research into the root causes of this response ought to begin at the most basic level, that of language and text processing.
Chapter 4
Difficulty in Theory: An Analysis of De la grammatologie

1 The Difficulty of Derrida’s Writing, in Context

While the response to works of fiction like those of Pynchon, Barth, Cortázar and Macedonio has been polarized, that to certain works of theory belonging to the poststructuralist vein of thinking (or Theory, postmodern theory, or French Theory—under whichever moniker), has been even more divided. Leonard Diepeveen has shown that experimentation in the arts and literature has become increasingly accepted and thought to be the norm over the course of the twentieth century. That is to say, if difficulty is a “cultural gatekeeper,” it has grown to bar entry to far fewer individuals over time where fiction is concerned. However, in the case of works of theory, their gateway would appear just as barred as ever, as the merit of difficulty in this realm is still hotly debated even within academia, with literary critics like Denis Dutton and scientists like Alan Sokal on one side, and Jonathan Culler, Kevin Lamb and the band of contributors to their collection on the other, as seen in Chapter 1. The works of Jacques Derrida figure prominently within this discussion, as he is one of the thinkers who most fervently manipulates the form of his texts to make it cohere with the content, toying with the rules of grammar and especially logic, as well as readers’ expectations of coherency in the process. Critically, many of these games resonate with those featured in the works of authors of fiction that were his contemporaries, as will be seen in this chapter, and so the variance in responses has much to do with the genre of the work.

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“Jacques Derrida fut le philosophe le plus admiré et le plus détesté de son époque,” declares the back cover of a recent book published in France, entitled, Qui a peur de Derrida? The

1 Diepeveen, The Difficulties of Modernism (see chap. 1, n. 38).

statement not only highlights the polarization of Derrida’s audience throughout his career, but the superlatives also point to the immense fame that he achieved, not only in academic circles, but, to a certain extent, beyond the ivory tower as well. Derrida was trained as a philosopher, but his ideas hold enormous currency among literature departments as they deal intimately with language and interpretation. Their reception amongst both these audiences, however, has varied widely. There is also just as large a gap between Derrida’s reception in France, where he began his career, and that in North America, where he eventually taught and where his thinking became greatly influential. While cultural and institutional differences largely account for the disparity, the playfulness and difficulty of his texts are nevertheless centerpieces in any discussion on this exceptionally polarized response to his works.

Derrida was born in 1930 in Algeria, then a French colony, and after obtaining his bachelor’s degree, he studied in Paris at the École Normale Supérieure. Following a one-year visiting scholarship at Harvard, he registered in France a thesis entitled L’inscription de la philosophie: recherches sur l’interprétation de l’écriture (which he did not complete until 1980). From 1960 to 1965, he taught at the Sorbonne, and then took an appointment at the École Normal Supérieure, teaching the history of philosophy. Derrida was a hugely prolific writer. His vast array of publications include, in the early years, La Voix et le phénomène, De la grammatologie, and L’écriture et la différence, which all appeared in 1967.3 In 1972, another trio of books was published: Positions (a collection of interviews), La Dissémination, Marges de la philosophie.4 In these early works, Derrida established the foundations of deconstruction (a mode of analysis and criticism), the contribution for which he is arguably the most remembered today. In 1974, he pushed the bounds of conventions (literary and generic) even further with the publication of Glas, an exploration of Hegel’s and Genet’s philosophies that toys with the norms of traditional

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page layout and typography. Later in his career, he shifted his attention to other themes, including the institution, identity, and death, and some of the most notable works from these latter years include *Spectres de Marx*, *Force de loi*, and *Chaque fois unique, la fin du monde*. *De la gramma
tologie*, however, is nevertheless one of his most influential works, laying out the grounds of deconstructions and key notions such as “trace,” “supplement” and “jouissance”, concepts that eventually became buzz words within literary critic circles.

Sociologist Michelle Lamont has traced in a remarkably thorough fashion the ebbs and flows of Derrida’s popularity in a landmark paper entitled “How to Become a Dominant French Philosopher: The Case of Jacques Derrida.” In this study, she tracks the diffusion of Derrida’s thinking through the publication on his works in both France and North America, providing insight into the events and cultural context that shaped his career. As can be seen in the two graphs she provides here, reproduced in Figures 4 and 5, Derrida’s fame first grew in France, particularly within philosophical circles, but over time, his recognition trended towards the literary community in North America, where his stardom was ultimately cemented.

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9 Ibid., 604-6.
Derrida’s works were widely diffused in France at the onset of his career because of the way they fit with the social, political and institutional context of the time. On the one hand, Derrida aligned himself with the philosophical tradition considered most “prestigious” in the French context (German philosophy, with Heidegger, Husserl, Nietzsche and Hegel), which legitimized his own work, and on the other, he helped fill a philosophical void following the student protests of May 1968, when intellectuals in philosophy circles grew unsatisfied with classical Marxism, and turned instead to the “more subtle forms of manifestations of power” addressed by thinkers
such as Derrida, and Michel Foucault, Roland Barthes, and Gilles Deleuze. However, much of Derrida’s popularity is also wrapped up in the language and style in which he expressed his ideas. At the time in France, as Lamont explains, difficult language was already in vogue, and so Derrida’s own complex rhetorical flair both fit well within and was validated through this tradition. She writes,

A sophisticated rhetoric seems to be a structural requirement for intellectual legitimation in the French philosophical community [of the day]: rhetorical virtuosity contributes to the definition of status boundaries and maintenance of stratification among French philosophers. To participate in the field, one has to play the rhetorical game, and this environmental characteristic is present in Derrida’s work. (592)

Again stressing the importance of his linguistic techniques when it came to his early recognition, Lamont also notes how Derrida’s oeuvre offered a clear set of “theoretical trademarks”—newly devised terminology and ideas—that enabled the easy transmission of his ideas. Examples include the deconstructionist terms trace, gramme, supplement, hymen, tympan and dissemination. Lamont suggests, “Derrida’s theoretical apparatus is so clearly packaged and labeled that it can readily circulate in the intellectual community” (592). The thinker’s writing style, then, is in large part what conferred him his fame, even at the outset.

Derrida’s initial popularity within the academic community paved the way for his renown among the general reading public in France. French culture of the day played a key role. Given the limited opportunities for upward economic mobility at this time in France, the upper middle class turned to the consumption of cultural “produit[s] de luxe” as a means of cultivating status. “Among those ‘products’,” Lamont explains, “are sophisticated intellectual goods, including deconstruction itself, which is barely accessible even to the highly educated; it requires considerable investment to be understood and is targeted at an intellectual elite” (595). That Derrida taught at elite schools (the École Normale Supérieure and later at the École des Hautes Études en Sciences Sociales) inevitably also added to his perceived prestige. Cultural media such as newspapers and magazines that catered to the upper-middle classes helped promulgate

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Derrida’s work accordingly. They gave the author a good deal of attention when he published three major books—including *De la grammaatologie*—in 1967, and another group of significant works a few years later in 1972, which helps explain his spike in popularity in France at this time. Publications including *La Quinzaine Littéraire, Le Monde, L’Arc, Les Lettres françaises* and *Le Nouvel Observateur* all reviewed his titles, with the latter even deeming Derrida one of the four “high priests” of the French university (along with Roland Barthes, Michel Foucault and Jacques Lacan) in 1975.  

The very difficulty of Derrida’s writing, then, is one of the tactics that encouraged its wide diffusion among the French public. Returning to Diepeveen’s notion of the “cultural gatekeeper,” it would seem that members of the French upper-middle class indeed sought to define themselves as part of the elite by presenting themselves as culturally aware and unthreatened by the difficulty of Derrida’s texts. In fact, it is this very difficulty (or “sophisticated” rhetoric) that allowed them to present themselves as “in-the-know.” It should also be noted, however, that the French had a certain advantage over their future American counterparts as an audience of deconstruction since they were equipped with the proper general theoretical background to digest it, as philosophy was a subject taught in high school (as it was in certain other European countries).

As can be seen in Figure 4, Derrida’s popularity in France declined in the latter half of the 1970s, to the extent that in 1981, when a major French literary publication called *Lire* ran a survey to identify the three most influential living French intellectuals, Derrida’s name did not figure on the list. Lamont explains this decline in popularity by noting that Derrida had distanced himself from the French political scene, that he had disregarded academic norms in philosophy by not writing a dissertation until 1980, and that he had begun to adapt his work for the larger public instead of tailoring it specifically to the philosophy segment, touching on

11 Ibid., 598.


broader topics and outside the interests of traditional philosophy.\(^\text{14}\) His popularity among the wider French audience trickled off as well. This decline, however, coincides with Derrida’s growing popularity in the United States, particularly among literary critics.

In North America, Derrida’s writings did not catch on with philosophy departments as they did in France in the early years of his career as his thinking conflicted with firmly established philosophical traditions in this part of the world. His work did in fact interest a small number of phenomenologists at Northwestern University in its early promulgation, but it never caught on with a wider audience of philosophers since in the Anglo-American tradition, phenomenology is marginal and the philosophy of language instead dominates the discipline.\(^\text{15}\) This latter branch of intellectual thought is deeply analytical, and thus entirely antithetical to deconstruction and the style in which it is articulated. A strong Marxist tradition in the Anglo-American context, too, inhibited the growth in popularity of Derrida’s brand of thinking there. Nevertheless, this public was indeed aware of deconstruction, as it had been the focus of an essay by Richard Rorty (\textit{Philosophy and the Mirror of Nature}) in 1979, and an article by (and ensuing debate with) John Searle in the \textit{New York Review of Books} in 1983.\(^\text{16}\) Notably, both philosophers attack the rhetoric and logical play of Derrida’s work and deconstruction, though Rorty is decidedly less antagonistic.\(^\text{17}\) While he views Derrida as a “parasitic climber” on the Kantian edifice, “cover[ing] and conceal[ing]” the tower that continues to be built, he acknowledges that

\(^\text{14}\) Ibid., 608.

\(^\text{15}\) Ibid., 613.


\(^\text{17}\) Despite the critique in Rorty’s 1979 essay, the philosopher in fact greatly admired Derrida’s work. A 1998 essay in \textit{Truth and Progress} makes this clear: “We should not let the constant brouhaha around Derrida—created, for the most part, by people who have not read his books—either rush us into premature judgments or hinder us from being glad to be his contemporaries. We should be grateful that there is somebody around who can still, even after we have read quite a lot of him, blow us away with something we could never have expected—something like ‘Circumfession.’” Richard Rorty, “Derrida and the Philosophical Tradition,” chap. 17 in \textit{Truth and Progress}: \textit{Philosophical Papers}, vol. 3 (Cambridge, United Kingdom: Cambridge University Press, 1998), 328.
deconstruction is part of an important dialectic between the Kantian and the non-Kantian schools of thought.\textsuperscript{18} He writes:

But of course the non-Kantian is a parasite—flowers could not sprout from the dialectical vine unless there were an edifice into whose chinks it could insert its tendrils. No constructors, no deconstructors. No norms, no perversions. Derrida (like Heidegger) would have no writing to do unless there were a ‘metaphysics of presence’ to overcome. Without the fun of stamping out parasites, on the other hand, no Kantian would bother to continue building.\textsuperscript{19}

Nevertheless, despite his balanced view, Rorty does put forth several arguments that undercut the Derridian project, particularly at the level of logical play and rhetorical style. For example, he says,

The most shocking thing about his [Derrida’s] work—even more shocking than, though not so funny as, his sexual interpretations of the history of philosophy—is his use of multilingual puns, joke etymologies, allusions from anywhere to anywhere, and phonic and typographical gimmicks. It is as if he really thought that the fact that, for example, the French pronunciation of “Hegel” sounds like the French word for “eagle” was supposed to be relevant for comprehending Hegel.\textsuperscript{20}

Four years after Rorty’s essay, Searle published his own critique of deconstruction. In it he notes how it was never popularized among American philosophers, and questions why exactly it is that it captured the imaginations of literary theorists so. Reasoning that it is “very congenial for some people who are professionally concerned with fictional texts to be told that all texts are really fictional anyway,” Searle dismisses the mode of thought entirely.\textsuperscript{21} His move largely echoes the

\textsuperscript{18} Rorty, “Philosophy as a Kind of Writing: An Essay on Derrida,” 154.

\textsuperscript{19} Ibid., 158.

\textsuperscript{20} Ibid., 147.

reception of Derrida in America among philosophy departments. Meanwhile, among literary theorists on the same continent, Derrida achieved superstar status.

A symposium at John Hopkins University in 1967 is what prompted Derrida’s integration into the U.S. market. René Girard, a French academic working at the school, organized the meeting to mark the opening of the university’s new Humanities Centre and to introduce to America the structuralist system of thought, then popular in France, having supplanted post-war existentialism as the dominant philosophy. The conference, called “The Language of Criticism and the Sciences of Man,” rounded up some of the most important names in structuralism at the time, including Roland Barthes, Lucien Goldmann, Jacques Lacan and Tzvetan Todorov. Claude Lévi-Strauss, the founding figure of structuralism, was unable to attend, but he reportedly gave the proceedings his blessing.  

Derrida, who was then in his late thirties, was also invited by Girard, who had been impressed with an essay Derrida had written critiquing the work of Lévi-Strauss. Derrida’s conference paper, entitled “Structure, Sign and Play,” is seen by many as the moment in which poststructuralist thought—identified as such only retrospectively—began to supersede structuralism as the most chic philosophical system of the day. Between the late 1960s and the early 1980s, a band of literary scholars at Yale who were deeply influenced by Derrida’s deconstruction—Paul de Man, Geoffrey Hartman, J. Hillis Miller, and, to a certain extent, Harold Bloom—helped promote Derrida’s work in the North American context, where it eventually became deeply entrenched among literature departments. Just as Derrida had gained recognition among philosophers in France after the events of May ’68 by providing an answer to an identity crisis in the discipline, he was popularized among literature departments—and particularly comparative literature departments—for similar reasons. As Lamont succinctly puts it, the latter “did not have a long intellectual tradition and were in search of a new


23 Ibid., 3-4; Maria Ruegg, “The End(s) of French Style: Structuralism and Post-Structuralism in the American Context,” Criticism 21, no. 3 (Summer 1979): 195.

24 Well recognized overviews of Derrida’s thought in the context of literary theory include the following: Culler, On Deconstruction (see chap. 1, n. 5); Christopher Norris, Deconstruction: Theory and Practice (London; New York: Methuen, 1982).
paradigm,” adding that the discipline already esteemed French thinkers, which paved the path for Derrida and deconstruction.\textsuperscript{25} The circulation of Derrida’s ideas was also greatly enabled by the translation of \textit{De la grammatologie} by Gayatri Spivak in 1976.\textsuperscript{26} As a young scholar, in 1973, Spivak, who had been at the University of Iowa for eight years, was sent the title from France and, convinced of its importance, she tasked herself with its translation, which was eventually published by Johns Hopkins University Press with a long, hundred-page preface.\textsuperscript{27} The translation proved to be a watershed in the diffusion of Derrida’s works on North American campuses.

Even from the outset, however, not all academics responded favourably to Derrida’s works in the American context, and, importantly, much of the distaste had to do with his rhetorical stylings. On the one hand, the eccentricities of Derrida’s writing were indeed part of its appeal for some Americans, who were dazzled and intrigued by the style of the French import, as is the case with so many other products from France. Maria Ruegg writes, “like the products of Parisian dress design, structuralism seemed to epitomize the dangerously seductive qualities of style; as intellectual fashions go, it was flashy, different, ingenious and slightly exotic.”\textsuperscript{28} On the other hand, this same unconventional flair is what put off so many other scholars of the day, as Ruegg also notes:

> the majority of academics remained either hostile or suspicious. Most ‘serious scholars’ dismissed the phenomenon as a passing French fancy and, adopting the strategy of the ostrich, tried simply to ignore it, taking solace in the certitude that what is ‘in style’ this season will be ‘passé’ come the next.\textsuperscript{29}

\begin{footnotes}
\footnotetext[25]{Lamont, “How to Become a Dominant French Philosopher: The Case of Jacques Derrida,” 609.}
\footnotetext[27]{Cusset, \textit{French Theory: Foucault, Derrida, Deleuze & cie et les mutations de la vie intellectuelle aux États-Unis}, 120 (see chap. 1, n. 9).}
\footnotetext[28]{Ruegg, “The End(s) of French Style: Structuralism and Post-Structuralism in the American Context,” 189.}
\footnotetext[29]{Ibid., 197.}
\end{footnotes}
But the naysayers were overshadowed in time, and the popularity of Derrida’s oeuvre only grew over the following years in the United States, until Derrida became the most frequently cited scholar in MLA paper submissions and deconstruction was effectively canonized. Derrida, in fact, reached stardom. Of course, the achievement does not rest simply on his own efforts, as important institutional changes and particularities in the American academic system played a fundamental role in erecting his pedestal; nevertheless, his fame is arguably the most noteworthy among scholars.

The star system—the epitome of the cult of celebrity—has permeated the United States ever since the dawn of cinema at the beginning of the twenty-first century, but in the 1970s, it finally grew to encompass academia as well. Two important contributing factors were publications that personalized scholars with photos, and the growing popularity of the MLA conference circuit, which was facilitated by the accessibility and relative affordability of jet travel. Through these means, scholars could become broadly known throughout the discipline, and this of course advanced their reputations and careers. As David. R Shumway notes, Derrida used the conferences quite effectively, cultivating his stardom with his charisma. “These events,” Shumway suggests, were “performances of deconstruction in action and of Derrida’s personality in construction.” As the talks put deconstruction into action, it should be noted, they utilized much of the same rhetorical and logical play that Derrida’s written texts display. Derrida’s name became firmly established in the discipline in America, and over his career, he held regular visiting appointments at Yale, Johns Hopkins, and the University of California, Irvine. Further emphasizing his celebrity status, a movie about him referred to him as the “Madonna” of thought. Derrida was even able to gain a degree of celebrity among the general public in the United States, though the means of his diffusion there were considerably different than those in France. Whereas in France a growing segment of a large middle-class sought to define and


32 Ibid., 96.

33 Cusset, French Theory, 286.
elevate itself through its consumption of sophisticated intellectual products, in the United States, the demand for such products by the corresponding segment of the population did not exist. Nevertheless, Derrida’s concepts and ideas seeped into popular culture via television, publicity ads, and films, such as Woody Allen’s “Deconstructing Harry.”

Derrida’s writings have undergone a series of waves of interpretation over the decades. As Michael Thomas outlines, deconstruction was first welcomed into the United States in the 1970s by literary theorists, and in the early 1980s, it attracted the attention of Marxist literary critics specifically, thanks to the English translation of Positions (1981). A series of what Thomas refers to as “more conventional philosophical readings” of Derrida followed in the mid-1980s, and as of the early 1990s, the ethico-political angle of Derrida’s texts began to be especially stressed, particularly in the works of Simon Critchley, Geoffrey Bennington, Nicholas Royle and Richard Beardsworth. He has been incorporated into currents such as feminist thought and post-colonialism. Despite the ubiquity of deconstruction, however, its history has been marked with persistent doubts and challenges in its application. For instance, although in the field of rhetoric and composition it was first optimistically believed that Derrida’s thought could transform the discipline thanks to its emphasis on unraveling underlying power structures and its potential for social change, eventually, around the 1990s, interest faded and the field instead turned to the more overtly political texts of Foucault and Marx. Some retrospective views of deconstruction and its influence even in literary theory proper are especially trenchant, claiming that the approach was “exhausted” shortly after it took American literature departments “by

34 Ibid., 119.


storm” in the 1970s. Of course, the omnipresence of Derrida’s work in the literary canon and on North American campuses today would suggest that the response to deconstruction has not been so obliquely negative in the aftermath of its rise to popularity, but instead exceedingly polarized. Nevertheless, the resistance of deconstruction to practical application has been the bane of its further acceptance.

Part of the problem lies in its complex language and difficultly accessible logical play, which has, among other drawbacks, limited its ability to be taught properly among undergraduate courses. François Cusset writes:

Il faut dire que ses éléments récurrents—apories, mises en abyme, figures négatives, signifiants en excès—ne sont ni facilement accessibles conceptuellement ni aisément répérables dans les textes littéraires ou théoriques qu’ils sont censés corroder. C’est pourquoi cette approche si célébrée ne sera qu’évoquée, jamais étudiée et encore moins appliquée, dans le cadre des cours de premier cycle (undergraduate). Et qu’il sera difficile, dans les cours pour étudiants gradués, d’en faire la méthode imparable que l’utilitarisme éducatif américain aurait voulu faire d’elle.

Largely because of their inherent difficulty, Derrida’s texts are often not read directly or read only superficially in America, adds Cusset. It is no surprise, then, that many of the concepts therein are often ill interpreted, particularly Derrida’s balanced view of metaphysics, which is often forgotten and taken instead to be an argument against metaphysics: “[o]n promet de déconstruire la métaphysique, dont Derrida pourtant n’a cessé d’affirmer la nécessaire ‘complicité,’” writes Cusset. Today, the notion of deconstruction has become largely blunted to become a mere synonym of subversion amongst a great part of its audience, particularly the segment of the public outside academia who accesses Derrida’s ideas only second-hand through ad slogans and catchy lines on the small and big screens.

38 Ibid, 13.
39 Cusset, French Theory, 132.
40 Ibid., 131.
41 Ibid., 130.
Meanwhile in France, Derrida never regained the popularity he once enjoyed at the beginning of his career, when, at the apex of his fame there, he had up to twenty-nine publications written about him and his works, in 1973 when he published his second round of books. Today, it is believed that for every ten Americans who have read Derrida, only one French person has done so.\textsuperscript{42} Derrida himself has noted this sour response to his thought in France, epitomized by the fact that he was refused a university chair. In an interview with Christopher Norris, Derrida said, “Not only has the French ‘context’ been less and less determining for me, but there have been more and more instances of antipathy, rejection or misconception on the part of the French press and the French universities in relation to my work.”\textsuperscript{43} Derrida’s death in 2005 was an occasion to reflect upon his legacy. Max Genève sees in the disregard of Derrida’s work in France more than just a simple lack of interest or an oversight (though this may have in fact been the case to a certain extent), but a more grandiose conspiracy to silence a thinker whose ideas threatened to dismantle the common ideology of the university institution. The players in this supposed push to quiet Derrida range from scholars to the press—even Derrida’s own publisher, Galilée—according to Genève. His argument is worth quoting at length, as it nicely highlights the fierce opposition that Derrida faced in France over his career:

Derrida de son vivant connut la haine et le rejet, en France notamment. L’université française [. . .] mobilisa toutes ses ressources pour faire taire l’importun, comme si elle sentait dans les discours du philosophe le risque mortel de voir dévoilées ses pratiques censurantes et la fragilité de son assise impensée. À défaut de pouvoir le museler, elle chercha par tous les moyens à rendre sa parole inaudible, aidée en cela par nombre d’intellectuels médiatiques, au verbe plus haut que la pensée, et que déshabillait le premier souffle déconstructeur venu. La masse de ses adversaires trouva un allié aussi paradoxal qu’involontaire chez son propre éditeur, Galilée, qui édait Derrida comme s’il s’agissait d’un poète hermétique réservé aux seuls initiés (le refus de publier ses

\textsuperscript{42} Ibid., 118.

Derrida, of course, was not silenced, and his works spread across the world. Despite his eventually frosty reception in France, he has now been translated into countless languages, and his death drew attention from around the globe. Though the post-mortem reflections on his works were not always glowingly positive—as can be seen in the famous New York Times obituary that called him an “abstruse theorist”—what is certain is that Derrida’s contribution to thought has not been overlooked nor forgotten. Scores of articles documenting his impact and forums eulogizing his person surfaced, and deconstruction continues to be included in the university curriculum, particularly at the graduate level, but also at the undergraduate level as a movement of great import in the history of literary theory. The very publication of biting critiques of the man and his oeuvre even upon his death, however, goes a long way in demonstrating just to what extent the response to Derrida was polarized, much of the disparity having to do with not just the ideas he expressed, but the manner in which he chose to articulate them.

Derrida’s distinct style of writing is, significantly, from a formal point of view, not unlike that employed by authors of fiction and poetry, wordsmiths whose craft necessarily entails experimenting with the form of language, exploring its possibilities. Particularly in the twentieth century, as Diepeveen has shown, this experimental play grew exponentially, and audiences came to adapt to the aesthetic. But the acceptance has not yet fully passed the threshold of works of fiction to apply to works of theory—as the very mixed reception to Derrida perfectly illustrates—even when the play featured in the latter outright echoes that employed in the former. Arguably, from a stylistic point of view, Derrida’s writings are rather in line with that found in texts created by authors of fiction. The catalyst for this peculiarity is no doubt the author’s resolve to make his text enact what it professes—turning it into a performance—when

44 Genève, Qui a peur de Derrida?, 10-11.
45 Kandell, “Jacques Derrida, Abstruse Theorist, Dies at 74,” sec. 1 (see chap. 1, n. 21)
the topic that he takes up is the subversion of transparency of language and logic. In other words, when Derrida writes, he is acutely aware that he is speaking not just about but also within language. The point of view allows him to question the rules and conventions of language and logic paradoxically precisely as he employs them. Deconstruction—as it has come to be known—is what results.

A deconstructive text, however, is not without its own kinds of regularity. In fact, the genus has so many distinct idiosyncrasies and recognizable rhetorical traits that parodical snippets abound online, and some web pages even offer step-by-step instructions teaching how to write in a Derridian fashion. One such example nicely highlights the emphasis on the creative use of language involved in a deconstructive text. In a lighthearted essay entitled “How to Deconstruct Almost Anything: My Postmodern Adventure,” step 1, which entails the selection of a text to deconstruct, the author quips, “the choice of text is actually one of the less important decisions you will need to make, since points are awarded on the basis of style and wit rather than substance.”

Yet another do-it-yourself recipe outlines five important identifiable eccentricities of a Derridian analyse de texte, worth listing at some length here to include some of the clever and illustrative examples embedded within their descriptions:

- **Use the phrase "always already"**: Not only is the meaning of language always slipping out of our grasp, it has already moved on as we attempt to grasp it. What better phrase to express the urgency of this dynamic than to jam together two words which lesser minds would never have in the same room together? Thus, we are always already finding ourselves closer to the Derridean mode of expression.
- **Become a thesaurus**: Why use one word, term, phrase, idiom, when you can use many, multiple, a plurality, two, maybe five words for the same concept, idea, meaning, signified?
- **Open parenthesis wherever possible**: Derrida (who even now must be speaking, writing, discoursing in parenthesis (how can he not, when the world itself is parenthesised, bracketted, enclosed, circumscribed?) wherever he may be) would be offended by any sentence which did not branch off into several

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discrete parts, sometimes returning to the original thought (if such a thing were possible).

- **Pun like crazy:** The thought (which when taught, becomes taut, tight, tense, stretched to breaking, which is to say ever looser as it becomes tightened) is illuminated by the pun [...]

- **Never finish a sentence too early**

These are but five kinds of identifiable formal play within Derrida’s oeuvre, and although the examples provided are rather whimsical, they do nicely pinpoint some of the key rhetorical devices used by the thinker. Of course, a text like *De la grammatologie* features countless others. What the following sections will do is dissect this work to locate these peculiarities of Derridian writing, whilst weighing their possible cognitive impacts for readers.

Just as Chapters 2 and 3 examined the reader responses to texts of fiction by giving consideration to both the academic and the popular audiences, the analysis of Derrida’s readership will be just as inclusive, showcasing responses from both scholarly publications and online sources. Given that the discussion on the variance in responses between these two groups has been amply covered in Chapter 1 and in the opening section of this chapter, the emphasis here will be on identifying the elements of Derrida’s work that can be cumbersome to readers in general. There is in fact a great alignment between both groups on the types of formal games that trouble the reading process, even if the language used to express these observations sometimes varies in locution. That being said, a great deal of the commentary found online on book review boards is written in a distinctly professional, even scholarly tone, likely because French Theory is better known to those within the ivory tower than without.

The cognitive principles first explored in Chapters 2 and 3 will be here taken up anew and applied in an analysis of *De la grammatologie*, chosen because of its import as a seminal text in Derrida’s oeuvre and also because of its highly representative and comprehensive nature in terms of Derridian linguistic play. Many of the same researchers and their studies, then, will be recalled, with short asides summarizing their salient points to refresh readers’ memory and to initiate the discussions. New materials will also be introduced where appropriate. The same

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outline that structured Chapters 2 and 3 will here be maintained, with four microstructural features of the text and then four macrostructural features studied in that order, though many of the topics discussed naturally overlap. Questions of genre will be addressed along the way. However, differences in text processing based on genre will naturally be touched on more fully in the section on macrostructure which takes a more global view of the text. The section on microstructural features will instead tend to stress the similarities between a Derridian work and experimental prose at the local level, highlighting the formal alignment between the two. Remarks following these two sections will further elaborate on the implications of genre for text processing.

2 Microstructure

2.1 “Le tour d’écriture”: Graphic Cues and Eye Movements

Although play based on phonetics is an important feature in Derrida’s works, the thinker’s break with conventions at the orthographic level in *De la grammatologie* is decidedly less radical than, for instance, Julio Cortázar’s invention of Ispanoamerikano, a language based purely on its phonetic equivalent, or even his Glíglico, one that sprouts up countless new words nestled within an uncannily recognizable morphology. The extent to which the difficulty of Derrida’s text rests on the subversion of the graphic, or visual, cues therein, then, is relatively limited. His later work *Glas*, which undoes the bounds of conventional typography, pitting two texts (readings of Hegel and Genet) that unfold at the same pace against each other in two columns, and even inserting a third column at times, would certainly be a richer example of how Derrida is wont to influence the way in which his readers’ eyes move on the page. Nevertheless, several innovations within *De la grammatologie* may indeed impact readers in this fashion, within the first 200 milliseconds of word processing when orthographic decoding takes place (even before

49 Derrida, *De la grammatologie*, 216 (see chap. 1, n. 129).

semantic integration),\textsuperscript{51} including a number of puns, a handful of invented words, and several notable deliberate plays on spellings. As Peter W. Nesselroth has written, “The difficulty of Derrida’s writing(s), of his apparent ‘unreadability’ is, to a great extent, the result of a rhetorical strategy that exploits both graphemic and phonemic double meaning.”\textsuperscript{52} Whether or not Derrida’s textual manipulations consciously register with readers as “difficult,” what is certain is that they do impact the reading process, affecting the length of time the eyes fixate on and move around the page.

As Reinhold Kliegl, Antje Nuthmann and Ralf Engbert have studied, the length, predictability and frequency of the words within a text (among other features) influence the amount of time that words are fixated by the eyes.\textsuperscript{53} In toying with the conventions of writing, then, Derrida, exactly like authors of fiction, reorganizes the visual cues that influence how the eyes move on the page. Much of Derrida’s impetus for rearranging these stimuli is a fundamental understanding that written language is not a mere system of representation for spoken language. Structuralist thinkers such as Ferdinand de Saussure, and indeed most of the Western philosophical history that precedes him, devalued the written sign, Derrida argues, by granting an unwarranted attention to the spoken word, placing it under the lens of study and considering it a sign just once-removed from the thoughts or ideas that it means to indicate; the written sign, meanwhile, is relegated to a role of a sign of a sign, a mere derivative of the former, even further removed from the supposed originary meaning. As the title De la grammatologie suggests, Derrida unravels this hierarchy, placing emphasis squarely on the study of the written sign, and deconstructing the assumed relationship between the spoken and the written by redrawing the notion of supplementarity that binds them so. In so doing, by recognizing that writing ought not be seen as a mere “appendage” of spoken language (as translator Gayatri Chakravorty Spivak


\textsuperscript{53} Kliegl, Nuthmann and Engbert, “Tracking the Mind during Reading: The Influence of Past, Present and Future Words on Fixation Durations,” 12-35 (see chap. 1, n. 114).
refers to it), Derrida frees it of its responsibility of simply representing speech, and begins to explore its malleability.\textsuperscript{54}

A number of linguistic games result from Derrida’s redefinition of the sign, and these, in that they alter the conventional norms of spelling and grammar, necessarily affect the way in which readers’ eyes move throughout the text before them. First, a series of invented words is introduced throughout the text, which would inevitably have an impact on the reading process. Derrida creates a number of neologisms (or, “neographism[s],” as Spivak puts it) that he uses throughout \textit{De la grammatologie}, and indeed his entire \textit{oeuvre}.\textsuperscript{55} The expressions \textit{grammatologie}, \textit{phonocentrisme}, \textit{archi-écriture}, and \textit{déconstruction} are perhaps among his most recognized creations. Semantics aside, strictly for being new expressions for readers, these terms would impact the reading process in that they would invite longer fixation times. It does remain to be studied, however, how readers with a tangential understanding of these words from study outside of Derrida’s works themselves—through secondary works or other sources—would differ in their responses and length of fixations. In any event, as the new expressions introduced in \textit{De la grammatologie} appear throughout the text, it would seem that there would eventually be a lexicalizing effect, whereby readers learn the meaning of the word through its repetition and use in different contexts. While this semantic integration phase is fraught with its own difficulties for reasons that will be seen in a separate section devoted to semantics, at the level of eye movements, it does seem that the destabilizing effect would become less pronounced as the word continues to appear throughout the text, given that some of the key factors deciding the length of fixations include the predictability and frequency of words. The above-mentioned expressions \textit{archi-écriture} and \textit{déconstruction}, for instance, each appear approximately just under twenty times in the text. It is worth noting, too, that because Derrida’s neologisms are all, generally speaking, pronounceable expressions, comprised of both consonants and vowels, they would be especially effective at increasing the length of the fixations, as they would pass the “legality test” that Seymour and May suggest readers issue when they process new words, a

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\textsuperscript{55} Ibid., xlii.
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check that takes place within the first 250 ms of word processing. Had Derrida’s creations been unpronounceable consonant clusters—illegal non-words, in the researchers’ terminology—the eyes would tend to pass them over more quickly, as in the interest of efficiency, the unsound orthographic configuration would encourage readers to skip the normalization step that would otherwise have them process the words.

Derrida is perhaps best known for his plays on words. While the term “différance,” which he created out of the terms difference and deferral (“différence” and “différer” in French) is arguably his most famed innovation, a variety of puns pepper his text. For example, Derrida titles one section of De la grammatologie “Le tour d’écriture,” a triple play on the French words for turn, trope and trick. Another iconic expression of his which means doubly (though it is not a pun per se) is the word déjà, which, out of context, means simply “already.” “Always already,” or “toujours déjà” in French, is an expression that surfaces often in Derrida’s text, perhaps understandably so as it so effectively encapsulates the anti-teleological vein of his line of thought. But as Nesselroth has noted, it is also much more, for it is a play on Derrida’s own name JAcques DErrida, with the first syllables of each word inverted. Yet another example of punning in De la grammatologie is the phrase, “À tous les sens de ce mot, l’écriture comprendrait le language,” where comprendrait could signify both to understand and to contain. This particular word game, though certainly far less of a focal point in the text as compared to the signature expressions différance and déjà, nevertheless goes a long way by way of an example where the two meanings implied by the pun seem not only to reinforce each other, but, in their homophony, also appear to have provided the very inspiration for Derrida’s argument. It is worth noting that this type of play on homophones—more common in texts of


57 Derrida, De la grammatologie, 216.

58 Jacques Derrida, Of Grammatology, 287 (see chap. 4, n. 26).


60 Derrida, De la grammatologie, 16; italics Derrida’s.
fiction than theory—is precisely what irked the philosopher Rorty, who accused Derrida of acting as though recognizing that the word “eagle” sounds like Hegel (in French) provides any kind of insight into Hegel’s philosophy.\textsuperscript{61} Indeed, it does seem that Derrida’s arguments, in a rather self-referential fashion, often spring out of this type of analysis and manipulation of words, phonemes and letters. As Marion Hobson has noted,

Derrida’s writing seems to work at the surface, in the sense that the makings of language itself are at the fore, with the words that make up the unfolding of an argument themselves also standing as the objects of its analysis, all in a self-perpetuating flow that appears to undo the usual sequence of cause and effect in philosophical discourse. This game, far beyond simply rankling some readers as noted above, also has consequences for textual processing where eye movements are concerned. In the cognitive sciences, homographs where both meanings are equally common are known as \textit{balanced}, whereas those where one meaning is dominant and the other subordinate are known as \textit{biased}. Heather Sheridan, Eyal M. Reingold and Meredyth Daneman have shown that when the context preceding a biased homograph instantiates its subordinate meaning, fixation times are longer on the homograph itself (in what is referred to as the \textit{subordinate bias effect}).\textsuperscript{63} When the preceding context is neutral, on the other hand, and the disambiguating region occurs \textit{after} the homographs, fixation times are longer on a homograph when it is presented in a single-meaning context condition instantiating its subordinate meaning (e.g., “The man with a toothache had a \textit{crown} made by the best dentist in town”), and on the disambiguating region occurring after the homograph in a dual-meaning context, i.e., a pun (e.g.,

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\textsuperscript{61} Rorty, “Philosophy as a Kind of Writing: An Essay on Derrida,” 154.
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“The king with a toothache had a crown made by the best dentist in town”). Sheridan, Reingold and Daneman suggest that the lengthened fixations reflect deeper processing delays.

What this all means for Derrida’s text, then, is that his play on words does indeed impact readers’ perception of the text, extending the amount of time which their eyes fixate on the words therein. Given Derrida’s penchant for terms where the primacy of the dual meanings forever remains in the balance (“undecidables”), most of the homographs he presents would impact readers in an especially significant way, causing important processing delays. In the examples of “comprendrait” or “tour,” for example, the context never disambiguates the homograph. An expression like “différence,” moreover, which encapsulates even so much more as it forms the crux of the book, is even more elaborate, and leads to questions around how long over the repetition of puns the lengthened fixation effect is sustained. Novel words for readers, too, lengthen the amount of time that they eyes fixate the letters and words before them, and how they dart about the page. While it may not be a difficulty in and of itself, the movement of the eyes (longer fixations, more frequent regressions) due to the subversion of usual visual cues reflects an extended length of time spent on the writing itself. In other words, it is quite simply the physical manifestation of the Russian formalist principle of defamiliarization. And so, in that Derrida’s text toys with the graphic representation of language, it is natural to expect that a certain de-automatization would result.

2.2 “Rendre énigmatique ce que l’on croit entendre sous les noms de proximité, d’immédiateté, de présence […] serait

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64 Ibid., 875.

65 More specifically, the researchers say their studies support the reordered access model, hypothesized by Keith Rayner and Lyn Frazier, which claims that word meanings become available to readers in two different ways: one suggested by the prior context, and another based on the dominant meaning of the expression. When these two paths provide different meanings at approximately the same time, processing delays ensue due to competition among them. Sheridan, Reingold and Daneman, however, further suggest that the model must incorporate the effect of postlexical information as well. Sheridan, Reingold and Daneman, 876, 879; Keith Rayner and Lyn Frazier, “Selection Mechanisms in Reading Lexically Ambiguous Words,” Journal of Experimental Psychology: Learning, Memory, & Cognition 15 (1989): 779-90.
donc la dernière intention du présent essai”.

Semantic Processing

The difficulty of the vocabulary used by Derrida in his works, including *De la grammatologie*, is often cited as one of the most challenging aspects of his texts. Case in point, a companion book to Derrida’s oeuvre called *Le vocabulaire de Derrida* has been published, and while the work is in fact part of a larger collection, “Vocabulaire de…,” which provides explanatory overviews of the terminology used by a selection of thinkers, Derrida’s inclusion in the series is significant.

As the introduction to the volume notes, the difficulty of Derrida’s text results from his deconstructionist project, which turns metaphysics on its head:

Les *mots*, chez Derrida, ne sont pas des tremplins pour les *concepts*, mais bien plutôt des obstacles sur lesquels ils viennent buter, ou des pièges dans lesquels ils viennent se prendre—la plus grande partie de l’histoire de la philosophie, et principalement ce qu’on appelle ‘métaphysique,’ écrivant ainsi la répétition tragi-comique d’un envol contrarié.

Derrida acknowledges the slipperiness of language, and is thus able to experiment with it in a way that his predecessors in philosophy generally did not. The consequence of this wordplay on the reading process is paramount. New terms and old terms used in new ways directly impact the ease of text processing for readers. Oftentimes, these semantic innovations discourage and deter members of his readership, as an online review so aptly illustrates in lamenting that Derrida continually makes use of “strange” words with obscure significations: “I can’t find them in my dictionary and I even have a French one.” The sentiment expressed here is not uncommon among Derrida’s readers. In fact, the difficulty of the vocabulary in Derrida’s works is one of

66 Derrida, *De la grammatologie*, 103.


68 Ibid., 3.

the most important elements that trouble the reading process and presents barriers to understanding.

Erudition, it should be noted, is sometimes the culprit, as, particularly given Derrida’s roots in the phenomenological philosophical tradition, the text is infused with jargon specific to that body of knowledge. In this sense, the difficulty of Derrida’s texts (De la grammaïologie, and also other publications by him) is little different from that of texts of other philosophers. For example, De la grammaïologie is sprinkled with terms such as phonè, telos, istoria, and ontico-ontologique, none of which typically surfaces in common parlance (17, 17, 20, 38). However, because Derrida views language as malleable, he pushes its bounds further and creates new terms. As Rorty rightly puts it, inherent in Derrida’s work is “the wish to revolt against the eternalization and cosmologization of the present vocabulary by creating a new vocabulary which will not permit the old questions to be asked.” While Rorty has in mind the invented expression di-fiérance when he advances this argument, Derrida’s repository of linguistic creations also includes words such as archi-écriture, grammaïologie and déconstruction, to mention just a few examples found in De la grammaïologie; the list is far more expansive when the rest of Derrida’s lifetime of works is considered. Not only is the vastness of this inventory of invented words problematic for readers’ comprehension of the text, but his sometimes sparse usage of them can also be disconcerting. As a reviewer online notes, “[Derrida] creates new concepts and terms only to drop them after a few paragraphs.” Interestingly, Derrida not only creates new words, but he also applies wider meanings for words that are otherwise rather common, such as brisure and trace, which he applies to the notion of writing, and the word écriture itself, which adopts signification beyond that which is written on the page.


If readers have difficulty with any of these novel expressions, it should register with them around 400 ms into text processing, as this is when semantic integration takes place.\textsuperscript{72} Differences in prior lexical knowledge, as well as general cognitive abilities are among the most important factors influence the ease of reading. Regarding the former, Charles Perfetti has put forth the lexical quality hypothesis, which states that readers not only have different vocabulary sizes, but the quality of the representations (encompassing form and meaning) for the words therein varies.\textsuperscript{73} High quality word representations can be retrieved easily and quickly, whereas low quality word representations lead to word-level difficulties in reading. Other researchers have termed less clearly represented—or partially represented—expressions “frontier” words. A great deal of the vocabulary items in \textit{De la grammatologie} could be considered low quality representations and frontier words for readers, though the amount and selections would inevitably vary among them. Such expressions can elicit distinct ERP patterns, as Gwen Gwen Frishkoff, Charles Perfetti and Chris Westbury have shown.\textsuperscript{74} Curiously, these differences are evident only with what the researchers would classify as “high skill readers,” suggesting the high skill and low skill readers use different processing techniques. Differences in working memory span, too, lead to differences in text processing, as individuals with high working memory spans tend to rely more on information from the mental lexicon from the context before them, as compared to low working memory span readers. It would seem, then, that readers are impacted by the text differently, according to their prior lexical knowledge and their general cognitive capabilities. This is of course true of any text, but it also certainly helps explain the disparity in responses to Derrida’s \textit{De la grammatologie}.

\textsuperscript{72} For an overview of the N400, see Kaan, “Event-Related Potentials and Language Processing: A Brief Overview,” 571-59 (see chap. 1, n. 121).

\textsuperscript{73} Perfetti, “Reading Ability: Lexical Quality to Comprehension,” 357-83 (see chap 2, n. 124).

\textsuperscript{74} Frishkoff, Perfetti and Westbury, “ERP Measures of Partial Semantic Knowledge: Left Temporal Indices of Skill Differences and Lexical Quality,” 130-47 (see chap. 2, n. 125).
Anna Mestres-Missé et al. have shown that readers can learn new words by inferring their meaning and lexicalize them after just three exposures. Importantly, this “acquisition effect,” as the researchers call it, can occur only when the meaning of the words in question can be derived. Yet, in *De la grammatologie*, it is precisely this that Derrida seems to discourage, insisting instead on the ambiguity and malleability of meaning. He does this in a number of ways throughout the text, one of which involves repeating the same word in a slightly different context so that it means differently. A signature phrasal construction of his is the repetition of a single word, separated by a preposition such as “*de*” in French (or “*of*” in English), so that the same term can mean differently. Among the countless examples throughout the work are “science de la science,” “signe de signe,” “l’origine de l’origine,” “à l’intérieur de l’intérieur ou à l’extérieur de l’extérieur,” and “supplément de supplément” (43, 63, 90, 63, 398). Here, two definitions of the same word become at play within the text—the conventionally accepted one, and the version once-removed that describes the mirror version of itself. For example, the generally understood meaning of science is superimposed onto itself so that a meta-science emerges (questioning the very bounds of the term in the process). Comprehension problems may arise especially if the word in question is then used in isolation as it has been shown to mean doubly. A variant of this repetition with a difference is the recycling of a word in a different grammatical function. For example, “la littéralité littéraire,” “la nature se dénaturant elle-même,” “le désir désire,” “la logique non logique,” and “la nécessité de la non-nécessité” (383, 61, 238, 367, 367). Again here, the relationship between signifier and signified is highlighted and questioned, as words are made to stretch into different significations through the addition or subtraction of a few letters, at times even doing a *volte-face* into their antonyms, suggesting a certain *reductio ad absurdum*, as with “la nature se dénaturant” and “la logique non logique,” for instance. While in these examples, the words stay (more or less) intact whilst their significations flit around, in a reversal of the repetition-with-a-difference structure, the same (or near-same) meaning is suggested through disparate terms. In this type of phrasal construction, Derrida explores the possibilities of the preposition “ou” (“or,” in English), or simply uses the comma, as in the following examples: “le sens de l’être n’est pas un signifié transcendantal ou trans-

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équivoal,” “paralyser ou stériliser la recherche,” and “pour que la jouissance de soi ne soit pas altérée par l’intervalle, la discontinuité, l’altérité” (38, 43, 353). The suggestion is both that the same point or idea can be conveyed with different words, and also paradoxically that not a single word is enough to convey it. By using more than one term, Derrida allows himself not to commit to any particular meaning. In these three types of construction, the relationship between the written word and meaning is subverted—a theme that permeates De la grammatologie as a whole.

While these small-scale puzzles can be troubling for text processing, it is more what they imply about the approach to language in De la grammatologie that is important for understanding the difficulties of the text from the standpoint of vocabulary. In these examples, the close proximity of the words in question (the identical terms, the cognates and the synonyms) make it relatively easier to see when a single expression can mean doubly, or when several expressions mean similarly; it is far less simple than when the words are located farther apart in the text. Because of his views on the impenetrability of language, Derrida generally does not feed his readers clear, straightforward definitions of the coinages he presents them—words that he either creates or redefines. Readers are instead to infer the meanings for themselves over the course of the read. Yet, this task is itself far from simple, as many of the key expressions in the text—those around which the entire work seems to revolve, such as différence, supplémentarité, or trace, for example—are explained only through an extended, mazelike and self-referential network where each neologism is defined through yet another neologism. In other words, the meaning of the words is exceedingly difficult to infer. The following diagram illustrates some of the lexical inter-connectedness featured in the work. Within each bubble, a critical word is defined through yet another important and equally ambiguous word. The links between the bubbles show that the global context where these words are reused clarifies little.
If these expressions are further defined in the text, it is usually through the use of other vague terms such as presence and absence, origin, and inside and outside. In some instances, the tautology of the web condenses to a pinpoint: for example, the term supplement is defined in the following manner: “Le supplément est toujours le supplément d’un supplément” (429). The self-reflexivity on display here reinforces the idea that scouring the text for a clear definition of a Derridian term is a necessarily futile endeavour, for this very kind of linguistic clarity conflicts with the thinker’s aesthetic and philosophy.

From a cognitive point of view, Gretchen Kambe, Keith Rayner and Susan A. Duffy have shown that when readers cannot infer the meaning of a word from its immediate context, they attempt to infer it from the global context. Yet, as seen above, Derrida allows for neither. He does not

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offer straightforward definitions, and even from a more panoramic perspective, he does not let
the meaning of his unique expressions be easily inferred. These words are therefore learned with
more difficulty, if at all, by readers, which in turn inevitably impacts their further comprehension
of the text inasmuch as these words reoccur. While Derrida certainly very effectively challenges
logos through his rhetorical play throughout *De la grammatologie*, this type of wordsmithing is
also a great barrier to the process of lexicalization (learning), and thus one of the primary reasons
why readers report the vocabulary of the text to be so difficult.

2.3 “La complexité de cette structure, nous la découvrons aujourd’hui”.77 Syntax

Among the criticisms launched at Derrida’s works, including *De la grammatologie*, in terms of
its comprehensibility are accusations of an overly complex and convoluted syntax. For example,
one reader from the general public, in an online forum, cites Derrida’s “syntactical [sic] abuse
after abuse” as reasons underlying the unfavourable review granted to the work.78 Academics,
too, sometimes share in this observation, even if the sentiment behind it differs, perhaps from
frustration to appreciation. E. R. Davey writes,” The syntax is often complicated, conveying an
air of redundancy or obsessive, intricate selfqualification.”79 Yet, while Derrida’s writing at
times does present syntactical challenges, on the whole, it does not stray so far from the usual
norms and conventions of grammar—especially if one is to compare a work like *De la
grammatologie* to fictional works such as the short stories in John Barth’s *Lost in the Funhouse*,
where sentences are broken off and left incomplete, quotation marks are sometimes never closed,
and punctuation is spelled out rather than given in its graphic form. Instead, where Derrida’s
syntax takes on a degree of difficulty—namely, when his sentences grow long or seem to shift
their focus along the way—the arrangement of the words on the page appears to be merely the
result of an excited state of mind (or flow, in cognitive terms). The syntactical subversions in *De

77 Derrida, *De la grammatologie*, 137.

78 Amazon (customer reviews for *Of Grammatology*, entry by D.S. Heersink, August 11, 2001),

79 E. R. Davey, “‘The Words Which We Are Using Do Not Satisfy Me…’ Interpreting Derrida: A Dissenting
la grammatologie, then, are perhaps not so disruptive to the reading process and comprehension as other elements of the text, but they do pose certain important challenges to readers attempting to follow Derrida’s train of thought at a good pace.

Derrida’s long sentences appear to be part of an overall strategy which sees written language decoupled from its assertive forces, almost so that it connotes rather than denotes. Critics have taken note. Davey, for instance, comments the following troubling sentence cited from Derrida’s Éperons (or, Spurs in English), typical of Derrida’s style.

Dès lors que la question de la femme suspend l’opposition décidable du vrai et du non-vrai, instaure le régime époqual des guillemets pour tous les concepts appartenant au système de cette décidabilité philosophique, disqualifie le projet herméneutique postulant le sense vrai d’un texte, libère la lecture de l’horizon du sense de l’être ou de la vérité de l’être, des valeurs de production du produit ou de présence du présent, ce qui se déchaîne, c’est la question du style comme question de l’écriture, la question d’une opération éperonnante plus puissante que tout contenu, toute thèse et tout sens.80

Davey writes,

This long sentence is built up with one declamatory statement after another—la question de la femme suspend l’opposition décidable du vrai et du non-vrai, instaure le régime ..., disqualifie le projet herméneutique ..., libère la lecture de l’horizon du sense de l’être, des valeurs ou de présence du présent ..., ce qui se déchaîne, c’est la question du style comme question de l’écriture, la question d’une opération éperonnante ...etc.—such that one discerns in it something akin to a poetics of association. It is the voice of one very loosely marking out territories, perhaps, rather than arguing for his ‘right’ to them (although the sheer confidence of the voice does seem to do something very like that). If it is intended to persuade at all—and there is no guarantee that it is, by the way, or even that it can (without Derrida apparently involving himself in contradiction)—then its persuasive force is basically rhetorical, not dialectical.81


Examples of such structures, where Derrida suggests rather than identifies, abound in the text. Sometimes, Derrida creates lengthy sentences as a result of a long association or list of ideas. This tendency is recognizable even in shorter segments, such as the following sentence:

L’horizon du savoir absolu, c’est l’effacement de l’écriture dans le logos, la résumption de la trace dans la parousie, la réappropriation de la différence, l’accomplissement de ce que nous avons appelé ailleurs la métaphysique du propre.82

Words or ideas are given in several different forms, almost in such a way as to cloud or confuse the exact meaning of the idea, as several different possibilities are given—the same idea is repeated, but every time with a difference. In this particular case, the horizon of absolute knowledge is described through several different expressions separated by commas. First, it is a deletion, then a reprise, then a re-appropriation, and finally, a fulfillment. In such cases, the sentences nevertheless exhibit some structure, with the punctuation (commas or semi-colons) potentially guiding the readers from proposition to proposition, playing its customary role as prosodic cue inviting a pause. At other times, however, the structure of Derrida’s sentences seems far more convoluted, with the ideas therein wafting in a variety of directions, putting forth a number of points for readers to understand and remember. While this moving around through language can indeed occur over several sentences in some especially complex passages, this erring about often takes place in a singular, multifarious sentence. The following sentence, which takes up a full page in the French Les Éditions de Minuit edition to discuss and complicate the idea of the origins of writing (archi-écriture), provides examples of both how Derrida uses the “list” strategy to string ideas together, thereby lengthening his sentences, and also how the thoughts written out meander about as though each word on the page spurs a new, exponential proliferation of ideas, seeing as how the clauses therein themselves sometimes expand over several lines:

Que l’accès au signe écrit assure le pouvoir sacré de faire persévérer l’existence dans la trace et de connaître la structure générale de l’univers ; que tous les clergés, exerçant ou non un pouvoir politique, se soient constitués en même temps que l’écriture et par la disposition de la puissance graphique ; que la

82 Derrida, De la grammatologie, 41.
stratégie, la balistique, la diplomatie, l'agriculture, la fiscalité, le droit pénal soient liés dans leur histoire et dans leur structure à la constitution de l'écriture ; que l'origine assignée à l'écriture l'ait été selon des schèmes ou des chaînes de mythèms toujours analogues dans les cultures les plus diverses et qu'elle ait communiqué de manière complexe mais réglée avec la distribution du pouvoir politique comme avec la structure familiale ; que la possibilité de la capitalisation et de l'organisation politico-administrative soit toujours passée par la main des scribes qui furent l'enjeu de nombreuses guerres et dont la fonction a toujours été irréductible, quel que fût le défilé des délégations dans lesquelles on a pu la voir à l'œuvre ; qu'à travers les décalages, les inégalités de développement, le jeu des permanences, des retards, des diffusions, etc., la solidarité reste indestructible entre les systèmes idéologique, religieux, scientifical-technique, etc., et les systèmes d'écriture qui furent donc plus et autre chose que des 'moyens de communication' ou des véhicules du signifié ; que le sens même du pouvoir et de l'efficacité en général, qui n'a pu apparaître en tant que tel, en tant que sens et maîtrise (par idéalisiation), qu'avec le pouvoir dit 'symbolique,' ait toujours été lié à la disposition de l'écriture ; que l'économie, monétaire ou pré-monétaire, et le calcul graphique soient co-originaires, qu'il n'y ait pas de droit sans possibilité de trace (sinon, comme le montre H. Lévy-Bruhl, de notation au sens étroit), tout cela renvoie à une possibilité commune et radicale qu'aucune science déterminée, aucune discipline abstraite, ne peut penser comme telle. (141)

Although the sentence is broken up into smaller segments through the use of semi-colons, it is nevertheless a behemoth structure with complex and lengthy clauses presented throughout. The list strategy is evident in the sentence, with each new item introduced with the subordinating conjunction “que” (or, in English, “that”). Adding a level of difficulty to the read, even the first segment of the sentence is a dependent clause that is part of this list, so that the point of the sentence and the connection between and relevance of the clauses is not stipulated until the very end of the page-long construction, with the cue “tout cela renvoie.” A lack of clarity may therefore cloud the reading of these numerous opening clauses.

The cognitive impact of such convoluted constructions is significant. Syntactical anomalies register with readers at about 600 ms into text processing (as evidenced by the P600, a spike in activity in the parietal lobes) suggesting that in the timecourse of reading, this is when syntactical integration takes place (though, as studies by Yamada Yoshika and Helen J. Neville have shown,
it is difficult to separate out semantic integration as the two are rather interlinked.\textsuperscript{83} As working memory is involved, differences in working memory capacity among readers lead to variations in response times, from 600 ms for readers with average working memory, to 900 ms to 1500 ms for readers with low working memory capacity.\textsuperscript{84} Importantly, as syntax does not seem to have a component of working memory devoted to it specifically, it depends on the same resources as other activities, and is thus limited by the same load constraints.\textsuperscript{85} It would seem, then, that Derrida’s exceptionally long sentences, which would require readers to maintain propositions within working memory over several lines—even over half of a page, at times—would cause a particular challenge to the reading process. The effect would be even more pronounced in readers with a lower working memory capacity. Critically, as Alan Kennedy and Wayne S. Murray have shown, sentence length also has an effect on eye movements.\textsuperscript{86} The duo analyzed structurally ambiguous sentences, where the ambiguity is resolved either early or late in the rest of the sentence. They provide the following example of early and late closure sentences, respectively:

1a. Since Jay always jogs a mile this seems like no distance to him.
1b. Since Jay always jogs a mile seems like no distance to him.\textsuperscript{87}

Generally speaking, when faced with ambiguity, readers perform a re-analysis task, reflected by longer fixation times on the disambiguating region of the sentence and also regressive saccades.


\textsuperscript{84} Otten and Van Berkum, “Does Working Memory Capacity Affect the Ability to Predict Upcoming Words in Discourse?” 92-101 (see chap. 2, n. 179).


\textsuperscript{87} Ibid., 834.
Kennedy and Murray found that longer fixations were more pronounced in longer ambiguous sentences, supporting their theory that, “[w]ith long ambiguous phrases the reader must either hold more information in memory until the ambiguity is resolved or be forced to assign a single interpretation, which may need to be revised.” Derrida’s long sentences, then, are taxing on working memory, and often time, even more so because—whether it is owing to structure or semantics—they present a number of ambiguities to readers.

Although Derrida’s syntactical structure in *De la grammatologie* is not so radically subversive—at least compared to some of his other linguistic play in the book, or to the works of certain authors of fiction—it does nevertheless pose certain challenges to readers, as online reviews and academic analyses suggest. Sentence length is the most apparent challenging structural element in the work. Even on an intuitive level, it is clear that the breathlessness of the sentence hinders its comprehensibility as readers would lose begin to lose focus as its end nears. Working memory is at stake, as its capacity is limited. Eye movements too—longer fixations, more frequent regressive saccades—would be impacted by the peculiarity of constructions. It seems, then, that these long sentences, along with any other syntactical irregularities or ambiguities that Derrida may present, would indeed be effective in de-automatizing the reading process, lengthening the time of perception and increasing the work involved in understanding the text.

### 2.4 “La sémiotique ne depend plus d’une logique:” Word-Level Logic

Derrida does not use language in the same way as do most philosophers. Instead, with an acute awareness of the relationship between the ideas he presents and the medium in which he delivers them, Derrida enacts deconstruction as he speaks of it. The usual denotative quality of words consequently shifts to make way for more ambiguous, often paradoxical meanings. Many of the expressions he uses, in fact, have not only multiple significations, but also meanings that actually directly contradict or oppose each other. In some cases, they are written *sous rature* (under erasure), directly crossed out on the page so that both the affirmation and the negation stand, and

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88 Ibid., 835.

89 Derrida, *De la grammatologie*, 70.
in others, they are more general lexical items that are made to suggest in-betweeness or undecidability in a similar fashion (such as *hymen* and *tympan*, for example), all in keeping with the overarching thrust against the science of presence in his writings. Such logical play and the incompleteness that it implies risk irking and staving off readers. George Steiner, for example, has rebuked deconstructionist analysis as “portentous banality,” faulting it for indulging in what he deems futile irresolvability; he writes,

> The central dogma, according to which all readings are misreadings and the sign has no underwritten intelligibility, has precisely the same paradoxical, self-denying status as the celebrated aporia whereby a Cretan declares all Cretans to be liars. Immured within natural language, deconstructive propositions are self-falsifying.  

The same sentiment is echoed among certain readers of the general public. One online reviewer who rates *De la grammatologie* unfavourably explains simply, “Logically Illogical.”

Traditional logic is certainly what is under attack in *De la grammatologie*, as Derrida attempts to untangle—or deconstruct—the science of presence and its underlying assumptions. While this may intrigue and challenge some readers, others may be less amused by the formal play.

This idea of writing *sous rature*, where two opposing significations are represented in a single linguistic entity, Derrida borrows from Heidegger. In order to conceive of the term Being (*Dasein*) anew, to attempt to save it from a potential metaphysical pitfall whereby Being impossibly stands as the presupposition of any definition or thinking, Heidegger crosses out the word visually on the page (*Dasein*). The word and its deletion (or negation) thus co-exist. It is in part the paucity of language that leads to this strategy. As Spivak explains, “Since the word is inaccurate, it is crossed out. Since it is necessary, it remains legible.” Derrida makes use of this strategy in the very same visual manner on several occasions in *De la grammatologie*, for

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92 Spivak, *Of Grammatology*, xiv (see chap., 4, n. 54).
much the same reasons. The first such instance is the following, in an early chapter appropriately entitled “L’être écrit.”

L’‘essence formelle’ du signe ne peut être déterminée qu’à partir de la présence. On ne peut contourner cette réponse, sauf à récuser la forme même de la question et commencer à penser que le signe est cette chose mal nommée, la seule, qui échappe à la question institutrice de la philosophie: ‘Qu’est-ce que…?’.93

The crossing out in this example extends beyond the verb “to be” to apply to the noun “chose” as well (“thing” in English), an expression that extends the sense of presence that Derrida is questioning in this sentence. The method is used once again rather prominently in a section heading: “Le dehors est le dedans.”94 Yet, these visual examples are rather sparse throughout the text as a whole. The contradiction that they stand for, however, where a perpetual in-betweenness prevails, nevertheless underlies a great number of the expressions within the text. These “undecidables,” for Vincent B. Leitch, include expressions such as supplément, différence, écriture, hymen, and they promote “not clarity but unreadability.”95 Nesselroth explains the same notion of undecidability by way of dichotomous pairs, such as “either/or,” “proper/improper,” “inside/outside,” which “overflow into each other and overcome their own textual limits and semiotic demarcation lines.”96 Importantly, the notion of writing sous rature also seems to extend to Derrida’s text as a whole. Derrida himself suggests that notions he presents ought to be viewed as presented under erasure: “Quant au concept d’expérience, il est ici fort embarrassant. Comme toutes les notions dont nous nous servons ici, il appartient à l’histoire de la métaphysique et nous ne pouvons l’utiliser que sous rature.”97 Whilst acknowledging the deficiencies of language (the absoluteness they suggest, and the forgetfulness

93 Derrida, De la grammatologie, 31.

94 Ibid., 65.


97 Derrida, De la grammatologie, 89.
of their arbitrariness that they induce), Derrida must nevertheless *use* language to convey his ideas. One means of dealing with this tension is to write entirely *sous rature*. Words and arguments may be put forth, but they are in the same movement taken back, in a way, given only “as if,” another fundamental principle permeating Derrida’s work.

The intended cognitive effect of Derrida’s exploration of in-betweenness is stated clearly by Spivak in her introduction:

> At once inside and outside a certain Hegelian and Heideggerian tradition, Derrida, then, is asking us to change certain habits of mind: the authority of the text is provisional, the origin is a trace; contradicting logic, we must learn to use and erase our language at the same time.\(^98\)

A de-automation, in essence, is what is being sought, whereby readers are invited to de-condition themselves from thinking in absolutes, to contemplate instead both what is said (a presence) and its deletion (an absence) at once. From a cognitive sciences point of view, Derrida’s play here could perhaps be viewed through the lens of studies on puzzle-solving, a subset of a larger pool of research on inference generation. Working memory is an important part of the cognitive reality behind problem-solving, with the visuo-spatial sketchpad taking on a particular importance, and working memory capacity (which determines the number of chunks of information that can be manipulated at once) going a long way in accounting for the individual differences among readers’ facility with the resolution of logical puzzles.\(^99\) Naturally, puzzles that involve more steps for resolution will place more demands on working memory. While the left hemisphere plays an important role in working through logical problems (as has been seen in studies on inference generation in the context of reasoning with propositional syllogisms, particularly of the Aristotelian kind),\(^100\) the semantic meaningfulness of the information presented is also important. Arbitrary and more realistic information will tend to elicit activity in

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\(^98\) Spivak, *Of Grammatology*, xviii.

\(^99\) Bühner, Kröner, and Ziegler, “Working Memory-Visual-Spatial-Intelligence and their Relationship to Problem-Solving,” 672-80 (see chap. 2, n. 232).

\(^100\) Noveck, Goel and Smith, “The Neural Basis of Conditional Reasoning with Arbitrary Content,” 613-22 (see chap. 2, n. 233).
different parts of the brain and engage the hemispheres differently, with the right hemisphere being especially involved when materials present implausible conclusions, as more inferences would necessarily be invited.\textsuperscript{101} Derrida’s undecidables, then, where conflict resolution is effectively impossible, may not only place unusual demands on working memory if readers attempt to work through their illogical logic, but they may very well also elicit notable activity in the right hemisphere.

Interestingly, as seen in Chapter 2, the type of syllogism known as \textit{reductio ad absurdum} has been shown not to elicit the same kind of neurological activity related to reasoning as other syllogisms (such as Modus Ponens and Modus Tollens) that have a resolution. In fact, \textit{reductio ad absurdum} instead incites a response no different from the baseline condition (a propositional syllogism where the conclusion is trivially true, such as \textit{If there is a black rectangle then there is a blue circle. There is a red triangle}).\textsuperscript{102} The researchers’ explanation of this perhaps surprising discovery was cited in Chapter 2 but warrants reiteration here: “no further processing is required on the critical concluding sentence,” they say, “in effect, there is no more reasoning to do once it is recognized that the two premises prompt no valid inferences.”\textsuperscript{103} This conclusion is primordial in the study of Derrida’s undecidables, as it suggests that the logical impasses that they put forth do not trap and stall readers; instead, readers who recognize the impossibility implied by the terms (particularly those under erasure which directly and visually show the term and its negation), can move along comfortably with the reading process. The human mind is not constrained by the same rules as formal logic.

Derrida’s undecidables, however, may still impact the text processing in that they are (partly) negated statements. It has been shown that negated statements are first thought in the affirmative

\textsuperscript{101} Ibid., 614.

\textsuperscript{102} Ibid., 615.

\textsuperscript{103} Ibid., 620.
form, with the negation finally taking effect between 500 ms and 1000 ms into processing. Importantly, because they are first processed in the affirmative, negated statements would involve more processing costs for readers. Derrida’s expressions written *sous rature*, then, in that they are negated statements, would seem to require a certain amount of work from readers to be comprehended. What is particularly difficult about this particular brand of play with undecidability and in-betweenness, however, is that readers appear to be called upon not only to contemplate both polarities (the presence and the absence of the sign), but also to do so *at the same time*. While Derrida cautions against the idea of simultaneity in *De la gramma­tologie*, warning, “La simultanéité coordonne deux présents absolus, deux points ou instants de présence, et elle reste un concept linéariste,” he does nevertheless promote an altered version of the concept through the use of certain expressions such as *à la fois* (*at once* in English). For example, he writes, “elle [la rupture entre le sens originaire de l’être et le mot] y est comprise et la transgresse à la fois,” and “la présence est à la fois promise et refusée” (36, 203). The distinction is slight, but necessary if Derrida is to avoid absolute concepts. In its non-“concept” form, simultaneity becomes a fleeting event, as this remark in *De la gramma­tologie* makes evident: “À la fois : c’est-à-dire dans un movement divisé mais cohérent” (204). The terms written *sous rature* and the *non-concepts* Derrida puts forth are microcosms of this ephemeral duality. The concurrent processing of an affirmation and a negation (a presence and an absence) that they would imply, however, would seem to stretch the limits of human cognitive ability. As studies on visual processing have shown, with reversible figures that could depict either one image or another using the same outline (the most recognizable such optical illusion is perhaps an image in which an outline traces either a vase or two facial profile), attention can turn to only one image or the other—not both at once. Viewers may oscillate between the two images, with top-down processes deliberately directing attention, but only one may be in focus at any given

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105 Derrida, *De la gramma­tologie*, 127.
Point. 

Importantly, studies on language comprehension would support the idea that two irreconcilable meanings can lead to processing difficulties. As an embodied view of language would suggest, readers take longer in processing sentences that present two competing actions that would involve the same sensorimotor system. 

Although Derrida’s instances of play on the absence/presence dichotomy are rather abstract, perhaps the same principle of mutual exclusivity applies. After all, even Derrida, as James S. Hans points out, can focus on just one polarity at a time; he must eventually choose one side to run with:

But if this were true, how could differance be anterior to motor or sensory operations, how could it be anterior to sign and concept? The exclusions here suggest at first that differance is neither sensible nor intelligible and then that it is both sensible and intelligible. This is the usual manner of formulating such an unnameable non-concept, yet after the paradoxical formulation, one must go ahead and talk about the non-concept in one set of terms or the other, since discourse would be impossible if one had to continuously formulate the notion of differance both as neither sensible nor intelligible and as both sensible and intelligible at the same time. So, to avoid this problem of discourse, one defines the non-term in terms of a paradox and then continues to discuss it largely one way or the other, and Derrida chooses to speak of a non-term which is neither sensible nor intelligible.

What Hans notes is impossible in discourse would seem to be equally unlikely in cognition. A competing presence and an absence cannot comfortably nor lengthily be thought of “at once.” Derrida’s continuous calls on readers to try and perform this exercise should naturally put certain strains on them and, to the extent that readers seriously attempt the maneuver, slow the reading process.


Readers respond differently to Derrida’s logical play. In part, this is due to differences in working memory capacity, as the manipulation of the logical game pieces that he presents can be demanding. Interestingly, in the case of visual reversible figures, the emotive response of viewers is generally favourable, with viewers usually reporting the images as pleasing, as studies have shown. While the reversible terms in Derrida’s work (notably, those written sous rature), would appear to show the same level of either/or simplicity as these visual image, the complexity that they imply for the rest of the read, as well as other moments within the book that enact the deconstruction of conventional dichotomies, would appear to seriously complicate the straightforward flip that they entail. It would seem, then, that the scale of the puzzle and the degree of cognitive work that it implies should have a great impact on the overall pleasingness levels that readers attribute to the linguistic and logical games they encounter. In other words, word-level paradoxes may be judged far more favourably by audiences than the larger, more complexly entangled narrative-level paradoxes that the same text presents, as will be seen in the following macrostructure section.

3 Macrostructure

3.1 “[I]ls ont cédé à l’imagination”:¹⁰⁹ Inference and the Right Hemisphere

When a work is difficult, it often also promotes a certain pedagogical project whereby the challenges therein are meant to provoke thought and engagement in readers, teaching them along the way to read differently. Derrida’s De la grammatologie is no exception. The author, however, does more than simply prompt his readers to adopt a redesigned method of reading, and he instead encourages them to also learn a more flexible manner of thinking, one that is not bound by the rules of classical logic. As Derrida carries out this project throughout his work, both exercising it through distinctive stylistic and rhetorical play and teaching it at times by example and others by direct appeal, certain demands are placed on readers’ cognitive faculties, for the text before them that results from this experiment is infused with open-endedness,

¹⁰⁹ Derrida, De la grammatologie, 55.
seemingly outright contradiction, and counter-intuitive propositions. Readers’ imaginations are meant to be awakened, and their authorial powers meant to be emboldened. From a cognitive point of view, it is possible to view these activities through the lens of inference generation. It would seem that many of the games and deliberate logical fallacies that Derrida embeds into his text would suggest that the right hemisphere would have a special importance for the processing of the work.

Deconstruction, which is at the core of Derrida’s work and his general philosophy, is in essence a call for creativity, to see structures differently, and to generate new inferences by breaking and undermining the boundaries and links of traditional logic. This general notion percolates throughout Derrida’s text in a variety of ways, unfolding the commonly understood meaning of terms (e.g., trace, supplement, logos), highlighting typically unperceived connections, ambiguities, and paradoxes within the works of established philosophers and other thinkers (such as Rousseau, de Saussure and Lévi-Strauss in *De la grammatologie*), and undoing the logic of metaphysical assumptions and principles, including teleology, causality, and meaning. However, Derrida does not write under the pretence that he alone may conduct this creative work; instead, his project, it would seem, is set up to encourage and to teach readers how to adopt a similar scepticism towards logos and to loosen its links in whichever manner suits them best. In this sense, *De la grammatologie* serves as but one example of deconstruction, meant to inspire others. Readers are to engage with the text. To borrow the dictums of the poststructuralist school of thought—readers are meant to actively author rather than to passively consumer the text.

Derrida’s deconstructive project translates into a number of different rhetorical, stylistic and structural forms in *De la grammatologie* that invite a certain involvement from the readers. For one, a peculiar sense of medias res tends to permeate the text, for readers are continually plunged into a host of new terminology and ideas without much introduction or preliminary contextualization. The tone presupposes familiarity with the subject matter, and there is little by way of explanatory commentary. From the very beginning, the work—particularly for the uninitiated in Derridian thought—is difficult, for it forces readers to make causal connections and intellectual leaps for themselves, in order to attempt to catch up to the author’s train of thought. *De la grammatologie* opens with a high-level discussion about “la dévaluation [. . .] du mot ‘langage’” and it is only in the following section, which begins approximately one page
further, that the author addresses—briefly—the historical context behind this assertion; yet, even this is done using very vague, all-encompassing terms.\footnote{Derrida, De la grammatologie, 15.}

Or par un mouvement lent dont la nécessité se laisse à peine percevoir, tout ce qui, depuis au moins quelque vingt siècles, tendait et parvenait enfin à se rassembler sous le nom de langage commence à se laisser déporter ou du moins résumer sous le nom d’écriture. (15-16)

The universal statements (“tout”, “quelque vingt siècles”) make it difficult not only to decide whether to agree or disagree with his premise, but to truly understand its foundations—who exactly has been referring to everything as “language,” what is this “everything,” and what exactly does this turning point refer to, where “language” begins to become summarized under the name of “writing”? This inclination towards uncertainty persists throughout the text, as the philosophies of de Saussure, Rousseau, and Lévi-Strauss are never explicitly introduced in clean synopses, but continually alluded to as though readers are as familiar with the materials as the author himself. A recognizable entry point to the text is effectively foregone.

This omission is of course deliberate, as it fits into the subversion of teleology that pervades the text, as Derrida undoes traditional logos and the conventions of clear-cut origins and finite endings that it implies, asking readers, in the process, to stretch their imaginations to comprehend language differently. The very title of this first chapter is in fact the first clouding of a common or stable starting point, for it begins with the end: “La fin du livre et le commencement de l’écriture” (15). Fittingly, the final section of De la grammatologie rounds out the text with a similar paradoxical wording, with the last title ending on the word origin: “Le supplément d’origine” (441). In this way, the text ends on an opening. Resonating closely with this dissolution of teleology is also the confusion of causality found in the text. The game of beginnings and endings shifts slightly to the relativity of the before and after. An illustrative example is Derrida’s take on the order between writing and speech. Whereas writing is commonly (and in the philosophical tradition) assumed to derive from speech, Derrida suggests that it instead both precedes and follows it: “L’écriture précède et suit la parole, elle la comprend” (339), he writes, according “écriture” a certain primacy as well by suggesting that it
in fact comprehends (contains and understands) speech. Derrida often confounds opposing terms such as beginnings and end, and before and after in this way, in the process inviting readers to question their supposed antagonism. Oftentimes, these are paradoxical inconsistencies that he notes in the works of others. For instance, in Rousseau’s essays, he locates contradictions around the notion of presence: “Dans l’allocution, la présence est à la fois promise et refusée” (203). However, some of the central tenets of Derrida’s work also employ such flattened dichotomies. Différance, for instance, plays on the rules of prohibition and possibility: “La différence produit ce qu’elle interdit, rend possible cela même qu’elle rend impossible” (206). Supplementarity, moreover, similarly rests on an oscillating dialectic between presence and absence. Derrida writes:

dans la mesure où nous désignons l’impossibilité de formuler le mouvement de la supplémentarité dans le logos classique, dans la logique de l’identité, dans l’ontologie, dans l’opposition de la présence et de l’absence, du positif et du négatif, et même dans la dialectique, si du moins on la détermine, comme l’a toujours fait la métaphysique, spiritualiste ou matérialiste, dans l’horizon de la présence et de la réappropriation. Bien entendu, la désignation de cette impossibilité n’échappe au langage de la métaphysique que par une pointe. Elle doit pour le reste puiser ses ressources dans la logique qu’elle déconstruit. Et par là même y trouver ses prises. (442-43)

Impossibly, supplementarity is neither presence nor absence, and more importantly, it also paradoxically depends on the very logic that it deconstructs. The clash of these opposing terms and ideas subverts classical rules of logic, and instead invites readers to contemplate the dichotomies anew, to see their interdependency, and to begin to think them and the formal structure in which they exist (language, logic) differently. They are encouraged, in other words, not to construe contrasting binary terms as oppositions, but to find their common ground, and the necessary dependence of each term on the opposition to the other. This push to use language differently is a call for a creative reinterpretation of it. Inference-generation would come into play not simply in solving the puzzles of seemingly incongruous oppositions and of impossible paradoxical structures, but also in re-imagining language—its authority, its usage, and its limits.

Readers generally recognize that their creative and interpretive faculties are being strained in new ways by the composition that Derrida has laid out for them, whether or not they are aware of the larger pedagogical project at work. Robert Scholes points out the counterintuitive nature of
some of the notions that Derrida puts forth. For example, taking issue with the way in which Derrida seems to equate “meaning” and “truth,” Scholes questions his reversal of reading and writing. He writes

I think that our notion of reading depends on some irreducible minimum of recuperation in the process of generating meaning. Reading comes after writing [. . . .] Derrida seems at times to be denying this.\textsuperscript{111}

Derrida’s hierarchical, chronological and causal inversions in \textit{De la grammatologie} continually defy expectations, and as such, they ask that readers contemplate new possibilities. Like Scholes and countless other scholars, many readers from the generalist audience recognize the end-goal of Derrida’s subversions. One reader online comments, “Derrida’s greatest lesson is forcing us to look closer, he wants us to pay attention to what is really going on (or at least, to pay attention to other possibilities that may be at work).\textsuperscript{112} Another reader more succinctly states, “Ponderous,” and others still use qualifiers like “mind-expanding” and “mind-blowing” to describe the work.\textsuperscript{113} Ambiguity permeates the read, and as such readers are continually called upon to work to find sense in it. As many admit, the task is not easy. For example, one reader says online, “I have almost no idea what it said even though I tried very hard to know what it was saying.”\textsuperscript{114} Part of the problem is often the coherence breaks that Derrida works into his text, such as the omissions of much background information on the secondary works to which he refers. Interestingly, readers are often left to feel personally culpable for their lack of understanding. One writes, “I don’t know Rousseau at all, so most of the stuff towards the end


escaped me and I skipped around to what I could grasp (which wasn’t much).”

The absence of sufficient contextual information often renders it difficult for readers to make straightforward connections confidently. Instead, logical leaps are inferred, with the result that the work feels—as one reader nicely puts it—“like you’re putting puzzle pieces together.” According to the poststructuralist vein of thought, readers are encouraged to engage with the text in such a way that they are said to actively “author” it—to navigate its web in an individualized fashion and establish its meaning for themselves. However, as these reviews suggest, sometimes, the jumbled threads that lie before them confuse rather than inspire, and some readers are left befuddled before the ambiguity through which they are meant to sort.

A cognitive reality underlies the processing of ambiguity in a work of art. With visual art, for instance, it has been shown that abstract works require more effort for processing than more straightforward, representational works. Viewers tend to oscillate between the local and the global context to extract meaning out of the indeterminacy, eliciting activity in the temporal-parietal junction (TPJ) responsible for this alternation. With literary works, meaning gaps—or “coherence breaks”—similarly result in distinct neurological patterns as readers generate causal inferences to bridge these holes. Importantly, significant activity tends to be recorded in the right hemisphere, which is generally associated with more open-ended semantic processing such as that involved in metaphor or joke comprehension. Coherence breaks are problematic in the read for they complicate comprehension as readers move through the text. Significantly, readers with high working memory tend to be better able to avoid such breaks and


117 Fairhall and Ishai, “Neural Correlates of Object Indeterminacy in Art Compositions,” 930 (see chap. 3, n. 51).


119 Ibid.
perform semantic integration. Working memory capacity, then, is an important factor in accounting for why readers experience varying levels of difficulty in reading a text.

Discussions of the right hemisphere in the cognitive sciences appear to create an interesting parallel with the “authorial” form of reading identified by the poststructuralist school of thought. The poststructuralists, of which Derrida is a key player, argue that whereas works are passively consumed by readers, texts are actively authored by them. In the sciences, it has been shown that both reading and writing do in fact elicit similar neural activity, but this is so regardless of the artistry or supposed difficulty (the readerliness or writerliness) of the composition. Instead, the call for “active” or “authorial” reading from the poststructuralists resonates more closely with the level at which the right hemisphere, which is responsible for coarser semantic coding, is recruited. While the left hemisphere is thought to play a special role in the construction of more determinate, literal representations, the right hemisphere is instead associated with more indeterminate, fluid representations. In language comprehension, it is believed that the right hemisphere generates inferences that are then further processed by the left hemisphere, which works to incorporate them into the discourse representation. Both hemispheres work in tandem in linguistic processing, but the poststructuralists seem to especially prize the type of activity that is generally associated with the right hemisphere.

It would seem, then, that in offering up his readers a text filled with semantic and logical gaps, Derrida is placing a special emphasis on the work generally associated with the activity of the right hemisphere. Of course, both the left and the right hemisphere are critical to the reading process, and while the task is far from carried out independently by either region, the notion of “active” reading which encourages the inference generation that Derrida promotes throughout this and other texts resonates especially well with the work of the latter. The right hemisphere, it seems, plays a key role in facilitating the kind of imaginative, unexpected and convention-defying associations invited by the author’s text. The left hemisphere, which is believed to be more closely linked to literal interpretation, would reign in these associations sparked by the text

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120 Ibid.

121 Goel, et al., “Hemispheric Specialization in Human Prefrontal Cortex for Resolving Certain and Uncertain Inferences,” 2249 (see chap. 3, n. 63).
to allow readers to continue to move through it. Interestingly, coherence breaks, which negatively impact the comprehension of the text as readers continue with the read, are repeatedly invited in *De la grammatologie*. The marked absence of contextual clarifications and the subversion of conventional oppositions such as beginnings and endings, and before and after, can make for confused moments in the read which further complicates its continued understanding. Readers with high working memory tend to be able to better avoid such coherence breaks to achieve semantic integration compared to readers with low working memory, which likely accounts a great deal for the differences in perceived difficulty in understanding the text. That being said, even readers with high working memory, it would seem, would have difficulty in navigating around the gaps in logic that Derrida creates for them—a rupture with the conventional form of writing and of thinking is, after all, the crux of the book.

3.2 “[P]ar un effet de retardement inadmissible pour la conscience”\(^\text{122}\) Deferral and Suspense

One of the key principles in Derrida’s *De la grammatologie* is that of deferral. The term applies primarily to the notion of the deferral of the denotative meaning of words, an idea that Derrida encapsulates in his coinage *différance*, but it also has a structural implication, too, whereby Derrida continually defers the points that he makes over the course of the book—inevitably a direct consequence of offering solely *non-concepts* which cannot be defined positively in lieu of absolute concepts. The read is therefore necessarily lengthy and slow-paced, and, especially because of all of the other difficulties that the text also contains which compound the problem, as many readers have reported, it is not easy for them to maintain attention. Authors of fiction tend to delay the onset of a main event with deliberate and subtle forewarning in an effort to create suspense; arguably, the deferral present in Derrida’s text works in a similar fashion, only that, because of either its execution or the genre in which it is presented (a theoretical text), the technique is apt to lose rather than captivate readers. Cognitive studies on suspense and attention can further elucidate the reader response to deferral in the context of a Derridian text.

\(^{122}\) Derrida, *De la grammatologie*, 98.
Deferral (in French, *différer*) is one half of Derrida’s neologism *différance*, the other half being *difference* (“difference,” in English). The “a” in *différance* comes from the present participle of the French verb *différer, différant*, and the fact that the distinction between Derrida’s invented word and the word *différance* cannot be heard is a subversion of the traditional order as Derrida sees it where a certain primacy in scholarship has hitherto been accorded to speech over graphic writing. Altering the Saussurian theory that posits that meaning results from the oppositional differences between signs so that concepts are defined not positively according to their content, but negatively by contrasts with other items in the same system, Derrida suggests that the meaning of words is instead continually deferred, postponed over an infinite chain of signifiers, other words that differ from the one in question. As such, the same word will mean differently to every person, and in every moment; its meaning is not fixed.

All too appropriately, the word *différance* is first introduced in *De la grammatologie* through a deferral, with the definition delayed until some later moment in the text. The first instance of the term is the following: “et par rapport à ce que nous appellerons plus loin la *différance*, concept économique désignant la production du différer, au double sens de ce mot.”123 The end of the paragraph echoes the same movement of postponement: “C’est grâce à elle [la pensée de la différence ontico-ontologique] que nous pourrons plus tard tenter de faire communiquer la différence et l’écriture.” (38). The definition of *différance*, which contains the element of deferral, is autologically deferred in the text—and in fact, infinitely so, for a neatly packaged, clear meaning is never proffered, for non-concepts such as *différance* cannot be absolutely nor positively defined. Derrida often uses this technique to delay the definition of terms and the further unraveling of the concepts he puts forth. Instances of deferral at the structural level of the text, such as when Derrida says, “Mais laissons provisoirement cette question ouverte” or, “Marquons ici une pause avant de reprendre le fil du débat,” abound in the book (49-50, 247). On one occasion, Derrida even opens up an aside that lasts approximately seventeen pages. He writes, “Tout cela apparaît dans le maniement du concept d’articulation. Il nous faudra faire un long détourn pour le montrer” (327), and later returns to the thread of his original argument with the cue, “Ce détourn était nécessaire pour ressaisir la fonction du concept d’articulation” (344).

123 Derrida, *De la grammatologie*, 38.
There is a certain self-reflexivity in these declarations, for an awareness of the text and its structure is put to the fore. The following sentence offers a more succinct example:

La ‘rationalité’—mais il faudrait peut-être abandonner ce mot pour la raison qui apparaîtra à la fin de cette phrase—qui commande l’écriture ainsi élargie et radicalisée, n’est plus issue d’un logos et elle inaugure la destruction, non pas la démolition mais la désédimentation, la dé-construction de toutes les significations qui ont leur source dans celle de logos. (21)

The text comments on itself as it moves forward (here by identifying the sentence itself), so that content and form are closely intertwined. Deferral is both a key idea presented in the text and an important structural feature of it.

Oftentimes, Derrida’s textual delays are not announced so overtly. Instead, digressions from the topic already under the lens and lengthy explorations of secondary sources are introduced. A certain inertia can pervade the text, with Derrida exploring terms and concepts from every angle, presenting his ideas in a manner that reminds us of how Picasso paints his subjects, ceaselessly defining them through incomplete fragments of the whole—the whole, in this context, corresponding to a singular, clear denotative meaning. The definitions and justifications of the terms and ideas he presents, meanwhile, continually elude him and readers in the text. In one revealing instance, he forewarns, “Que l’écriture soit l’autre nom de cette différance, nous ne cesserons maintenant de le vérifier” (378). Derrida will constantly reconfirm the point which he is making here, continually turning the text back onto itself in the process, offering little by way of forward momentum. In part, the slow pace of exposition in De la grammatologie is grounded in the idea of shirking the authority of the authorial position. Rather than actively argue, prove or demonstrate, Derrida will instead passively follow the flow of the discussion, discovering it along the way. He does not race from argument to argument, but lets them unfold naturally before him. For instance, he writes, speaking of Rousseau, “Nous voici naturellement conduit au problème de la composition de l’Essai” (279). From an empirical point of view, one which acknowledges that Derrida is indeed the man with pen in hand writing the text, the idea of flow passes from the movement of the text to the mental state of the author. Often, particularly when Derrida presents paradoxical non-concepts, which, by their very nature, present infinite possibilities in countering the notion of absolutes, his writing turns to excited, breathless passages as he explores the boundaries and implications of the non-concepts. In the following
example, the mention of the term *archi-écriture* (along with the related coinage *différance*), generates a long series of clauses framed by a “c’est parce que,” as Derrida applies these notions to a passage written by Lévi-Strauss that states that the use of proper names in the Nambikwara culture is prohibited:

> Avant de nous en approcher, remarquons que cette prohibition est nécessairement dérivée au regard de la rature constitutante du nom propre dans ce que nous avons appelé l’archi-écriture, c’est-à-dire dans le jeu de la différence. C’est parce que les noms propres ne sont déjà plus des noms propres, parce que leur production est leur oblitération, parce que la rature et l’imposition de la lettre sont originaires, parce qu’elles ne surviennent pas à une inscription propre; c’est parce que le nom propre n’a jamais été, comme appellation unique réservée à la présence d’un être unique, que le mythe d’origine d’une lisibilité transparente et présente sous l’oblitération; c’est parce que le nom propre n’a jamais été possible que par son fonctionnement dans une classification et donc dans un système de différences, dans une écriture retenant les traces de différence, que l’interdit a été possible, a pu jouer, et éventuellement être transgressé, comme nous allons le voir. Transgressé, c’est-à-dire restitué à l’oblitération et à la non-proprité d’origine. (159)

As Derrida uncovers how the non-concept of *archi-écriture* and the obliteration of proper names work similarly, both implying an origin that paradoxically is and is not, his text enters into a moment of flow, where a winded sentence is generated. As for the readers, they would move through it, lengthily anticipating an end that makes itself evermore elusive. What is more, in typical Derridian fashion, the end of this sentence is also another beginning, as it introduces a notion that will be further elaborated on later in the text—“comme nous allons le voir.” The present and the future, ends and beginnings collide here, as teleology is subtly subverted. This kind of play on ends and beginnings is also rather typical of Derrida’s work, and feeds into the notion of an infinite deferral where the end point is continually pushed further back. Questions of how natural a sense of closure may seem to readers would ensue, along with what would be the cognitive consequence of Derrida’s subversion of this order.

Derrida’s constant deferral of clarity in meaning does indeed pose challenges for readers, even leading many to dismiss the book. One reader comments online, for example, “he never makes
his point,” and others similarly chide Derrida for his wordy digressions, calling the work “verbose nonsense” and accusing the author of “mak[ing] mountains of molehills.” 124 In suspending the traditional rules of logic and teleology, Derrida also is apt to create suspense: deferring meaning in his text (definitions, the crux of arguments) could cause a certain anticipation in readers who read with a view to discovering it. As seen in Chapter 3, this experience of suspense has a very corporeal reality to it, as higher cognitive processes are not independent from the body (physical sensations and emotional states). 125 It involves a more rapid heart rate, increased blood pressure, faster breathing, heightened eletrodermal response, and differences in eye movement. 126 Importantly, attention and interest play a key role in the phenomenon of suspense which is manifested by these bodily responses, and they must be maintained for the effect to occur. 127 The extent to which Derrida’s suspense-creating techniques are effective depend, then, on how well readers’ attention is maintained in the read.

Anecdotal evidence suggests that Derrida’s De la grammatologie does not always sustain readers’ attention very successfully. One reader, possibly a teacher, writes online, “I’m dubious about its value as an instrument of undergraduate curricula; it wants a different kind of attention to the kind paid by all but a few students.” 128 The maintenance of attention, of course, depends from reader to reader and situation to situation. As Eric I. Knudsen has shown, attention is not simply deployed in a top-down fashion, but it instead appears to involve a certain feedback loop whereby information competes for access to working memory, where decisions are made that


125 Damasio, Descartes’ Error: Emotion, Reason, and the Human Brain (see chap. 1, n. 103).

126 Vorderere, Wulff, and Fiedrichsen, Suspense: Conceptualizations, Theoretical Analyses, and Empirical Explorations, 339 (see chap. 3, n. 93).

127 Ibid.

determine top-down signals that put certain information into focus. The material under study, then, as well as working memory, plays a large role in sustaining attention. Interestingly, external motivation can lengthen reading times and encourage readers to be more attentive (better able to recall elements from the material read), so long as the reward is perceived to be worth the energetical costs in performing the task. If De la grammatologie readers, then, consider the teachings of the text to be sufficiently rewarding, or if, for example, the text is introduced in a classroom setting where its reading is tied to a grading system, readers’ attention could be better sustained. However, if the energetical cost required to carry out the activity is deemed greater than the potential reward, whatever it may be, attention is likely to drop off. Importantly, given the lexical, syntactical and structural difficulties inherent to De la grammatologie, these costs seem rather elevated. What they also entail, moreover, is the possible onset of mental fatigue in readers. Illustrating this prospect, one reader comments online that the text is “totally exhausting.” Mental fatigue is brought about by a lengthy period of “demanding cognitive activity” and it is apt to affect top-down processes involved in, among other activities, sustaining attention. But interestingly, it has been shown that if individuals pay less attention when performing a reading task, it is more likely that it is because they are bored with the task at hand than because they are mentally fatigued. As one reader writes of the book, “It’s passé, and it’s boring.” How readers perceive the value of the text and the work it entails, then, will contribute to how well they pay attention to it, and consequently, how well they are able to recall its elements, and thus process the text further on in the read.

129 Knudsen, “Fundamental Components of Attention,” 73 (see chap. 3, n. 96).


It is in fact quite natural that attention ebb and flow in the reading process, and so it cannot be expected that every sentence of Derrida’s *De la grammatologie* is read with the same attention even by the same reader in the same sitting. This phenomenon of wafting and waning of attention has been studied by researchers under the name of “mind wandering,” and what is particularly enlightening about this research is the way in which it accounts to a large extent for the differences among readers in terms of how well they stay focused on the read. The extent to which attention flows to the outside world depends on a host of factors, but the primary ones include working memory capacity, experience with the material at hand, emotional state, and certain cultural factors (such as the practice of sending short instant messages [IMing]). If mind wandering is a natural phenomenon in the activity of reading, it would seem that elements of the read would inevitably be missed. Readers would then have to turn back in the text, and strain to make sense of the present material and context. In a text as dense as Derrida’s, especially with its lengthy sentences and often unclear anaphoric references, this process seems to make the read especially cumbersome. It seems, then, that the challenging and erudite nature of the text would make it difficult not only to attract readers’ attention (as is evident in readers’ comments, noted above), but also to accommodate the natural increases and decreases of attention.

The deferral of meaning showcased in Derrida’s text—an idea both discussed and enacted—structurally, very much resembles the suspense-creating techniques typically found in works of fiction, particularly when Derrida explicitly hints at what is to come, such as when he points to an ever-elusive definition, as with his introduction of the term *différance*. However, there are a number of elements that cause the anticipation created in readers to lead them to grow disinterested rather than engrossed in the work, among them, the genre of the work, the factor

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deferred (meaning, rather than a story climax), and the length of the postponement—here, indefinite, in accordance with Derrida’s defiance of absolutes. At times, Derrida of course does return to the thread of the arguments that precede his digressions, but these moments are rare, for the author prefers to allow the text to unfold naturally and in whichever direction. Significantly, highlighting an important divergence between the formal features of the text and the cognitive, empirical response of readers to these features, while meaning is suspended in the work, suspense per se is not invariably generated in readers.

3.3 “Tel est le paradoxe de l’imagination”: Text Structure and Strange Loops

To understand the self-reflexive play that Derrida carries out at the macrostructural level, it is useful to revisit analogous paradoxical structures at the microstructural level. Derrida’s undecidables (items written sous rature, where both the affirmation and the negation stand, and non-concepts, which point to a similar ambiguity) are small scale representations of larger conceptual puzzles he puts forth, where the boundaries between opposites dissolve, the usual rules of logic are deconstructed, and absolutes cede way to inconclusiveness. The study of these linguistic items highlights a number of important principles about cognition. First, negated statements take longer to be processed than affirmative statements, as the affirmative versions of the statements are first processed. Derrida’s undecidables are not straightforward negations, however, as readers are asked to consider both the affirmative and the negative as valid (in the case of words written sous rature, for instance, the word is still shown, though crossed out). Instead, they are a lot like reversible figures, or logical paradoxes (such as the Cretan’s paradox) where both the affirmation and negation are provisionally true. Logical puzzles require a number of inferences to be solved, and so working memory capacity is primordial in explaining differences among reader responses. In the case of reductio ad absurdum, however, a formal paradox, the response has actually been shown to be negligibly different from a baseline condition of a syllogism with a trivially true solution, likely because when readers see the

136 Derrida, De la grammatologie, 438.

137 While semantic integration generally takes place at around 600 ms, negation takes effect between 1000 and 1500 ms.
inherent inconclusivity of the puzzle, they cease attempting to solve it. This begs the question, then, how would readers respond to larger scale puzzles of this nature, where the boundaries are not so clear?

It has been suggested that puzzles are diagrammatic in nature, and Derrida’s constructions would seem no different. The structure that is continually taken up in *De la grammatologie* can perhaps best be described as a “strange loop,” where, in Douglas R. Hofstater’s words, “by moving upwards (or downwards) through the levels of some hierarchical system, we unexpectedly find ourselves right back where we started.”\(^\text{138}\) Some of the tightest loops that exist in Derrida’s work can be contained within a single phrase. For example, the thinker concisely encapsulates the paradox that underlies his key principle, différance: “La différance produit ce qu’elle interdit, rend possible cela même qu’elle rend impossible.”\(^\text{139}\) Similarly, he notes that in Heideggerian thought, the transcendental signified both opens the logos and is contained by it: “ouvrant ainsi l’histoire du logos et n’étant lui-même que par le logos : c’est-à-dire, n’étant rien avant le logos et hors de lui” (33). Many of the formal impossibilities that Derrida presents are, in fact, paradoxes that he locates in deconstructing the work of fellow thinkers. In Rousseau, he finds that imagination self-reflexively awakens itself: “Quand Rousseau dit qu’elle ‘s’eveille,’ il faut l’entendre en un sens fortement réfléchi. L’imagination ne doit qu’à elle-même de pouvoir *se donner le jour*” (265). A circular logic is inscribed within these examples. The size of the loops with which Derrida presents readers, however, grows far greater than these succinct paradoxes, though these tightly-woven nexi often underlie larger puzzles and themes in his work and philosophy (such as with the example of différance above). The implications of the strange loop structure are far-reaching, for it entails the dissolution of both teleology (ends and beginnings become indistinguishable, and thus irrelevant), and boundaries between dichotomies (as they depend on each other for their existence—with the Liar’s Paradox, falsity exists only through truth and vice versa). These repercussions are evident in *De la grammatologie*, where the notion

\(^{138}\) Hofstadter, *Gödel, Escher, Bach: an Eternal Golden Braid*, 10 (see chap. 1, n. 70).

\(^{139}\) Derrida, *De la grammatologie*, 206.
of trace undoes the concept of origin,\textsuperscript{140} and différance and supplementarity deconstruct binary structures, for being at once presence and absence, interior and exterior: “Le supplément n’est ni une présence ni une absence. Aucune ontologie ne peut en penser l’opération” (442). Derrida writes with an awareness of these shortcomings in language, but to convey his ideas, he must nevertheless use the very language of presence with which he finds fault. In doing so, his writing enacts deconstruction precisely as it professes it. This leads to the ultimate paradoxical structure in Derrida’s oeuvre, whereby the text serves as a commentary on language—and thus itself. But the strange loop does not even necessarily end there, for Derrida’s subversion of language and logic extends outside the work at hand to encompass all conventional logical structures. Deconstruction knows no bounds. As Derrida famously put it, “il n’y a pas d’hors-texte,” and a text can always be deconstructed (227). Interiority and exteriority here implode, seeing as how, in a strange loop fashion, language originates itself, writes itself into creation. As for the cognitive effect of these logic games on the reader, in her introduction, Spivak has made clear just how counter-intuitive such structures are: “Humankind’s common desire,” she writes, “is for a stable center.”\textsuperscript{141} The difficulty of Derrida’s deconstruction, then, lies precisely with its subversion of absolutes—of conventional forms and expectations.

Part of the reason why these puzzles can be difficult is precisely because they defy expectations of a stable centre. The tradition that Derrida rails against is one of absolute meanings, clear beginnings and a sense of closure, and opposing propositions presented in an either/or fashion rather than impossibly lumped together with an and. These conventions, however, are also to a certain extent firmly engraained in the way we process language. Theories of embodied cognition suggest that thought and language are based on experience with the environment; the same sensory, motor and affective processes are involved, so that thinking about an event is a lot like living it, except that the physical actions are not carried out.\textsuperscript{142} It is perhaps reasonable to

\textsuperscript{140} Derrida writes, “Or qu’il n’y ait pas d’origine, c’est-à-dire d’origine simple; que les questions d’origine transportent avec elle une métaphysique de la présence, c’est bien ce qu’une méditation de la trace devrait sans doute nous apprendre” (109).

\textsuperscript{141} Spivak, Of Grammatology, xi (see chap. 4, n. 54).

\textsuperscript{142} Wilson, “Six Views of Embodied Cognition,” 625-36 (see chap. 3, n. 18).
expect, then, that Derrida’s undecidables (where two opposing meanings are equally true—and equally false) and similar structures would affect the pace of reading, for they reflect a defiance of mutual exclusivity that is difficult to apply to the tangible world (our bodily experience would teach us that an object is either present or absent, not both). What is more, because Derrida’s deconstructed dichotomies tend to be raveled up in strange loop structures that cycle about themselves (the opposing terms in fact rely on each other for their existence), it is likely that thinking through the paradox would involve the motor cortex. It has been shown that when readers encounter sentences describing the manual rotation of an object, activity is elicited in the neural substrates of manual rotation. In that Derrida’s strange loop structures invite following propositions along a circular path, it would seem that the substrates of manual rotation would be involved in their processing, to the extent that readers move through the logical steps. This hypothesis would, in fact, seem to be supported by the very contents of the text in question (and a slew of metafictional texts that similarly discuss this idea), which propose that the contemplation of the infinite—as with these paradoxical structures—invites a sensation of vertigo. Medically, vertigo is a spinning sensation that results from the loss of one’s sense of direction, but in common parlance, the term has adopted a far more narrow definition, with the same dizzying sensation triggered exclusively by heights (the technical term for the fear of heights is actually acrophobia). Spivak applies the term in describing a strange loop found within Nietzsche’s philosophy:

The ‘knowledge’ of the philosopher places him among the dreamers for knowledge is a dream. But the philosopher ‘knowingly’ agrees to dream, to dream of knowledge, agrees to ‘forget’ the lesson of philosophy, only so as to ‘prove’ that lesson…. It is a vertiginous movement that can go on indefinitely or, to use Nietzschean language, return eternally.143

The circular movement of the paradox, whereby a philosopher proves a lesson by operating outside its bounds, is “vertiginous,” she says. Perhaps not surprisingly, Derrida’s own language has been said to cause this same sensation. One reader comments online that, “The book’s

143 Spivak, Of Grammatology, xxx.
language is dense and vertiginous by turns.” The circularity of the strange loops that Derrida creates most certainly recalls a spinning movement resembling the dizzying sensation reported to be felt in the experience of vertigo. The suggestion of the infinite that these puzzles put forth in their deconstruction of teleology, with ends and beginnings becoming unidentifiable, also recalls the sense of disorientation associated with vertigo. What is more, in that the strange loop figures present a perpetually self-sustaining, self-reliant motion, their eerie dissociation with—or suspension from—other grounded structures appeal to the more narrow, colloquial sense of the term vertigo, where a fear of heights arises when one is suspended from above. While the term vertigo may be used only in a metaphorical sense in reader responses to texts, because understanding language is an embodied activity, this qualifier is nevertheless intensely revealing about the effect of paradoxical puzzles.

As experiments documenting the neural activity associated with solving the syllogism known as reductio ad absurdum have shown, when readers recognize a paradox for what it is—that is, when they perceive its irresolvability—they cease to process it. To do so, however, to deem the puzzle inherently inconclusive, it would seem that readers need first to understand the syntax and scope of the paradox at hand. Herein lies one of the greatest difficulties in Derrida’s texts, for the strange loops that he creates are both complex and far-reaching, engulfing larger ontological concepts and even the entirety of the very text before the readers in a self-reflexive twist reminiscent of the metafictional paradox, where a text circles back and comments on itself (in a structure similar to the Möbius strips presented by John Barth). If readers cannot fathom the components of the puzzles (the hierarchical steps of the strange loop that brings them back to the beginning), how are they to recognize its inconclusive nature? De la grammatologie presents a virtual barrage of these structures, so that even if some strange loops are grasped, others loom. Working memory would be continually taxed in working through these puzzles.

A survey of reader responses suggest that individuals who grasp some of Derrida’s most important large strange loops—namely, the fact that he deconstructs the conventions of language while using these very same conventions—have a greater appreciation for the text. For example,

\[\text{Amazon (customer reviews for Of Grammatology, entry by D M R FOX, September 9, 2002),}\]
one reader who rates *De la grammatologie* favourably writes that the language used in the work is “often rhetorically masterful even as it probes the resources of such mastery.” Another similarly wonders if Derrida is not “playing a little ironic game with the reader.” These readers understand that there is an overarching paradoxical structure to the work at hand, and so while some of the puzzles therein may continue to be troublesome, there is an overall comfort with this ultimate irony. In other words, they see this crucial and all-important strange loop for what it is. Other readers, however, find difficulty in dealing with Derrida’s large scale paradoxes. One writes, “Too damn difficult for me to grasp my mind around,” indirectly pinpointing the inability to see and manage all of the pieces of the puzzle as the root cause of his troubles. Other readers, of course, see the nature of play that is before them for what it is, but reject its premise: “you get the feeling you’re being cheated when you read his books—it’s just a massive, complex, intellectual joke,” one reader writes. Personal preference, of course, also explains much of the variance in response among readers. While some readers enjoy sorting through large-scale paradoxes and have the working memory capacity and patience to do so, others, though not incapable of the same, prefer to spend their time elsewhere. In this case, their response is much like the deeming of the *reductio ad absurdum* inconclusive and moving on—not with the read, but with other activities.

145 Ibid.


3.4 “Puis les choses se compliquent, elles deviennent plus tortueuses, plus labyrinthiques”: Text Structure and Situation Models

Derrida’s *De la gramma
tologie* is a labyrinthine text that puts into parenthesis the idea of linearity. Although the work appears to be neatly divided into two sections and generally grouped around the thinking of three philosophers (de Saussure, Lévi-Strauss, and Rousseau), the structure of the text is nevertheless meandering as the author works through his arguments and engages in deconstruction. Not only are clear-cut beginnings and endings squarely avoided in a rebuking of traditional logos and teleology, but multiple contradictory lines of thought are often taken up in the identifications and exploration of paradoxical structures. Detours, repetition, asides, abandoned lines of argumentation, and logical leaps are also often employed in what could arguably be compared to a veritable stream-of-consciousness exercise. The text is on the move. From the readers’ point of view, however, this journey of discovery can be rather difficult to follow, and this naturally has implications for long term memory and learning.

The potentially disconcerting, labyrinthine structure of the text is far from accidental. Instead, it results from the mirroring of content and form that Derrida undertakes in *De la gramma
tologie*. Underpinning his conception of language is the notion of freeplay, the fluid movement of meaning across the text. As James S. Hans reminds us, defining this term, as it is with all of Derrida’s coinages, is far from easy, for the thinker resists the pinning down of meaning:

the ‘origin’ of his thought, which is finally not deconstruction itself but rather his notion of freeplay as the unnameable movement of alterity, of différence. The problem here is simply that freeplay is for him unnameable, however much one might choose to locate it momentarily by calling it ‘différence’ or the ‘gramme’ or the ‘trace.’ It resists formulation precisely because it is the non-origin of différence, of the play of writing.

However, what freeplay (as well as its associated terms) point to, more or less, is this flow of meaning, or, as Derrida himself puts it in *L’écriture et la différence*, “ce champ est en effet celui

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149 Derrida, *De la gramma
tologie*, 167.

d'un jeu, c'est-à-dire de substitutions infinies dans la clôture d'un ensemble fini.”

And so, when this principle is applied on a grander scale, in the same manner that meaning is dynamic and continually shifting, the text in *De la grammatologie* adopt a constantly forking, mazelike structure that recalls the infinitude of possibilities.

To the same extent that meaning is difficult to pin down, according to Derrida, so too is one’s exact place within the philosopher’s text and his line of argumentation. The abstract nature of his subject matter certainly compounds the problem, but the root cause is arguably the way in which Derrida does not stand on either side of an issue, for this very act of affirmation or negation is emphatically disallowed in his subversion of logos. “Le jeu [freeplay] est toujours jeu d'absence et de présence,” Derrida has written. When this notion is translated into the structure of the text, two opposing sides of a contradictory statement or set of terms are simultaneously taken up, apparently both equally true. The very frame of the work—inasmuch as one can be cleanly identified—exhibits this paradoxical structure: Derrida makes it clear that he is not negating the tradition of metaphysics, only exploring its other side. This same duality permeates every branch or pathway of his text. Every argument for a point is also an argument against it. In a highly illustrative—though extra-textual—example, when asked whether deconstruction is the “God of negative theology,” Derrida answered, “It is and it is not.”

This same splintering structure, where contradictory realities or terms are provisionally true, is echoed at a continually more microscopic level throughout *De la grammatologie*. In fact, it would seem that the exploration of these very antagonisms is what generates the text, which could perhaps be compared to a binomial tree in which every branch (possibility), forks into at least two other branches, which themselves bifurcate further. In the following passage, for example, Derrida first takes up the notion of metaphysics, which quickly detours into a discussion of the idea of supplementarity, where contradictory terms like presence and absence, positivity and negativity,

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152 Ibid., 426.

and effacement and writing are manipulated into a rapid-fire series of paradoxical constructions that gather momentum as the text advances.

La métaphysique consiste dès lors à exclure la non-présence en déterminant le supplément comme extériorité simple, comme pure addition ou pure absence. C’est à l’intérieur de la structure de la supplémentarité que s’opère le travail d’exclusion. Le paradoxe, c’est qu’on annule l’addition en la considérant comme une pure addition. *Ce qui s’ajoute n’est rien puisqu’il s’ajoute à un présence pleine à laquelle il est extérieur [. . .]*

Le concept d’origine ou de nature n’est donc que le mythe de l’addition, de la supplémentarité annulée d’être purement additive. C’est le mythe de l’effacement de la trace, c’est-à-dire d’une différence originaire qui n’est ni absence ni présence, ni négative ni positive. La différence originaire est la supplémentarité comme structure. Structure veut dire ici la complexité irréductible à l’intérieur de laquelle on peut seulement inférer ou déplacer le jeu de la présence ou de l’absence : ce dans quoi la métaphysique peut se produire mais qu’elle ne peut penser.\

As soon as a statement is given here, it is also taken away in such a way that it is and it is not, usually through the use of circular logic (e.g., “on annule l’addition en la considérant comme une pure addition”). Similarly, when propositions are considered, their antonyms are given equal weight as well (“une différence originale qui n’est ni absence ni présence, ni négative ni positive”). It is as though when the text begins to make an affirmation, it is then pulled just as strongly in the opposing direction, thus nullifying any concrete statement and remaining in the realm of non-concepts. The ideas brought forth in *De la grammatologie* often appear to be the result of this careful maintenance of equilibrium. In the passage above, for instance, the conjunction “donc” suggests that it is the prior reflection on the presence/absence dichotomy in the context of metaphysics that leads to the deconstruction of origins (they are “que le mythe de l’addition”). Significantly, the paradoxical structures are referred to in terms of displacement and movement (elsewhere, Derrida writes, “la différence dans son mouvement *actif*”), recalling not just the non-static nature of the labyrinthine text, but also the activity of readers who tread its paths, following, or, attempting to follow, the slanted logic of the arguments Derrida puts before

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them, making the connections for themselves to grasp at the whole.\textsuperscript{155} The text moves and advances as a result of the balancing act that it plays between conventional oppositions.

Readers generally agree that Derrida’s \textit{De la grammatologie} is a difficult text to follow, regardless of whether they are academics or members of the general audience. Whether they recognize the deconstructive project against logos or not, most are able to identify that the cause of their consternation is the logical structure of his argumentation. As Julian Wolfreys recognizes, in this text, “the alogical is unveiled.”\textsuperscript{156} A reader less aware of the overarching game misguidedely recommends online that Derrida “should take a biology and a logic course.”\textsuperscript{157} Others yet seem to be cognizant of the play, but reluctant to entertain it: one reader criticizes online that Derrida here engages in “gratuitous irrationality.”\textsuperscript{158} The labyrinthine structure of Derrida’s text is certainly apt to draw strong reactions from readers who want to make sense of it. The following response highlights not only this, but also the idea of moving through the mazelike construction: “I eventually managed to push down the frustration (and at times, the blind rage) I felt at reading his stuff and took my time to follow him where he wants to take us.”\textsuperscript{159} However, although Derrida’s words can indeed direct readers’ attention, his voice is far from Ariadne’s thread leading them out of the construction. Instead, it only thrusts them further into an ever-expanding puzzle.

The summarizability of the text is really what is at stake. \textit{De la grammatologie}, like effectively all of Derrida’s texts, cannot be summed up—neatly packaged into a finite, clear statement or series of statements, for language, as the thinker sees it, is far from being so definitive. To this

\textsuperscript{155} Derrida, \textit{De la grammatologie}, 206.

\textsuperscript{156} Julian Wolfreys, “‘Deconstruction, if Such a Thing Exists …’,” introduction to \textit{Deconstruction: Derrida} (New York: St. Martin’s Press, 1998), 14.


effect, scholar E.R. Davey notes, “In my judgment, there are enormous problems here, most of them plain logical problems [. . . ] language of this sort seems to exact a severe penalty on anyone who wishes to ‘summarize’ it.” Attempts to sum up the text have inevitably left optimists bewildered, not only in the process of creating their synopsis, but even afterwards in reviewing their product. Susan Van Zyl admits:

The result of this summarizing effort, with its very modest preliminary aim, is itself some 35 pages long and many of these pages are, despite my determination to be as clear as possible, by no means easy reading. In fact, looking back on them now, I wonder whether I ever really managed to be clear enough and whether I still understand them!

De la grammatologie is structured in such a way that an easy outline of its primary arguments is not forthcoming. While, as is evident in Van Zyl’s example, this reality is problematic for offline processes such as post-read commentary, it is also critical in online processes, i.e., reading in real time.

The general consensus in the cognitive sciences on the activity of reading is that text comprehension involves at least three levels of representation, all of which are interconnected in memory: the surface structure, the textbase, and the situation model. The surface structure level involves the exact representation of the text itself (its wording, its syntax). The textbase is also a close representation of the text, but it reflects only propositional network while losing the surface details. The situation model refers to the mental representation of the situation (the reality or fictional world, for instance) described by the text. In reading, comprehension is tantamount to the construction of an accurate situation model. This situation model—as seen in Chapter 3—is comprised of three phases: the current model, which is constructed as the words are read, the integrated model, which is continually updated, and the complete model which is


stored in long-term memory (though it should be noted that the complete model is always still available for revision). There are two ways of viewing the updating process of the situation model, as two frameworks for memory have been put forth. K. Anders Ericsson and Walter Kintsch believe that the three model phases are stored in different memory systems (the current model in short-term working memory, the integrated model in long-term working memory, the complete model in long-term memory), and that retrieval cues in the text foreground certain information in LTWM then updates it with information from STWM. Alan Baddeley and Graham Hitch, on the other hand, in a nowadays more widely adopted model, replace the notion of short-term memory with a model of working memory comprised of an attentional control mechanism (the central executive), two storage systems (the phonological loop and the visuospatial sketchpad), and—a latter addition by Baddeley—the episodic buffer, a multi-model storage system that acts as the interface between the latter two subsidiary systems. Importantly, this episodic buffer is responsible for binding information between the storage systems and long term memory, and the strength of its bonds depend on expectations or prior semantic associations (for example, bread and food are easier to associate that bread and chair), and the extent to which the resources of the buffer are stretched due to concurrent tasks demanding attention. Understanding the workings of memory alone goes a long way in explaining some of the difficulty inherent to Derrida’s *De la grammatologie*. The complex, maze-like structure of the text, its obscure references and frequent neologisms, and its long-winded sentences certainly all place important demands on attention as readers work to process the text. As the buffer is tied up with these tasks, it has fewer resources to devote to the creation of strong bonds between what is being read and the information previously stored in long term memory. The result is that the current information is stored into memory less efficiently, which impacts further text processing as readers move through the work, and thus overall text


165 Ibid. 19-20.
comprehension. Readers’ avowal of the difficulty inherent in summarizing De la grammatologie is a testament to their difficulty in creating a situation model, particularly as the text subverts conventions of causality and thus inhibits the creation of strong bonds.

The situation model framework applies to both narrative and non-narrative texts, though some differences do exist. Rolf A. Zwaan—who along with and Gabriel A. Radvansky put forth the influential Event-Indexing Model (as seen in Chapter 3)—has suggested that readers allocate their resources differently in constructing the three levels of representation (the surface structure, the textbase, and the situation model) depending on the genre being read, so that reading an expository text may lead to a stronger situation model, and a literary text, a greater focus on the textbase.166 Noting that goals tend to guide readerly strategies during the reading process (for example, they cite research affirming that news articles tend to be read with a view to expanding one’s knowledge of the world, manuals with an eye on learning to perform a certain action, and literary stories for aesthetic enjoyment), they have shown that not only do textual features and content contribute to the allocation profile along the representation spectrum, but the mere expectation of genre also does this. In an experiment where an identical text was shown to subjects, with some participants told it was a news story and others, a literary story, for the two groups reading under different perspectives, the strength of their individual representation levels differed (as measured through reading speeds and memory tasks). Subjects reading with a literary perspective dedicated more resources to constructing surface and textbase representations, while those reading with a news perspective constructed stronger situation models.167 Zwaan reasons that readers knowledgeable with the conventions of literary texts “know that they usually cannot commit themselves too early to one interpretation of a text because it might easily be an erroneous one.”168 And so, these readers take a “wait and see” approach, delaying the commitment to one interpretation or the other, here defined as a “strong situation model, a representation in memory that will tend to dominate incoming


167 Ibid., 930.

168 Ibid., 921.
Consequently, readers construct a textbase representation, and postpone the creation of a situation model representation until more information is available. Because readers familiar with generic conventions would expect a literary work to feature a certain level of indeterminacy at the outset, even when the text in question is identical to a news story, they tend to create a stronger textbase representation and weaker situation model representation. In the experiment noted above, it was a literary story and a news story that were contrasted. However, other experiments have shown a similar distinction in processing for narrative and expository texts. For example, Michael B. W. Wolfe and Joshua M. Woodwyk found that subjects relied on prior knowledge more with expository texts than with narrative texts, likely because they perceived the goal of the task to understand the content, which led to stronger situation models. Paul van den Broek et al., who conducted experiments with comparable results, hypothesize that readers have distinct “standards of coherence” for each genre that define the necessary criteria for comprehension and help determine the frequency with which readers make inferences to generate coherent representations. Genre, then, whether it is clear from the text, or simply stated at the outset, affects how a text is represented in the mind.

What is interesting about a Derridian text is how the subversion of genre plays against this framework for comprehension. Throughout his oeuvre—in this text and elsewhere—Derrida places an equal emphasis on content and form. His stress on the textual features of writing, the way he undermines their usual transparency, is more in line with a literary text than with an expository work, as the distinction is understood in the above-noted experiments. Especially with the forking paths of meaning that he sets out (at both the lexical and the logical levels), where readers are best to suspend a positive interpretation, it is a textbase representation which Derrida seems to be inviting. The creation of a situation model, in fact—where a clear scenario can be outlined, remembered and later updated—appears to be discouraged. Performance and

169 Ibid.


memory are impacted accordingly, which is rather evident in the way readers report not being able to summarize the text satisfactorily. On the one hand, it could be that readers who are unaware of the difficulties and particularities inherent to a Derridian text go into the read with expectations and goals that are more properly in line with an expository or more straightforward theoretical text. In other words, they approach *De la grammatologie* with an inapplicable set of standards of coherence. On the other hand, given that French theory has in itself become a well recognized genre, it could be that this subversion of expectations based on generic conventions may not take place in such a simplified way. Readers may be well aware of the playfulness of the text, but the goals that they set for themselves in the read will determine their response. Outright comprehension of the text, which is discouraged inasmuch as Derrida argues that language is anything but transparent, may be the most misguided goal and the one which leads to the most frustration with the read, as signaled by the readerly commentary noted above. Situation model building, which is, in effect, comprehension, does indeed seem to cede way to stronger textbase representations which allow for the flexibility (and even duality) in meaning that Derrida champions.

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The response to Derrida’s work has been quite polarized throughout the thinker’s career, owing especially to the manner in which he has opted to convey his ideas, making the form of his texts self-reflexively echo its content. Importantly, the author’s writing style features countless stylistic idiosyncrasies and rhetorical devices more typically associated with works of fiction than works of theory. Although French Theory in general has drawn criticism from within and without the academia, few if any other authors of this tradition have been able to garner the same amount of simultaneous criticism and praise as Derrida. The seminal *De la grammatologie* showcases countless examples of formal play, from invented words and spellings and long sentences to logical paradoxes at both the lexical and the structural levels (including the subversion of teleology and causality).

The cognitive effects of this play are quite real. Broadly speaking, the linguistic games that Derrida employs at the local—or microstructural level—are a lot like those explored by authors of fiction. For example, he toys with the graphic form of language (crossing out certain words), he makes extensive use of the pun, he subverts the usual denotative meaning of words, and he
creates long sentences with seemingly erratic syntax. Oftentimes, it is as though the shape and perceived sound of the words are what generate the text, so that the surface structure of writing matters a great deal and linguistic transparency is questioned. These games invariably affect the way readers’ eyes move along the page, encouraging longer fixations on certain words (on homophones and “undecidables”, for examples) and more regressive saccades on the surrounding text. Unclear, invented and logically ambivalent terms also affect the semantic integration stage, which usually takes place about 400 ms into the timecourse of reading. In general, as per the author’s philosophy on the transparency of language and the rejection of positivist presence, the text is crafted so that word acquisition is seriously challenged. Syntax, too, which usually registers with readers at 600 ms in, is here convoluted through the use of long, breathless sentences which stretch the limits of working memory capacity. At this local level, there is little distinction to note between processing a text of fiction and one of theory. Graphic, semantic and syntactical subversions should affect readers of both genres similarly in terms of the immediate, online responses here discussed.

It is at the more global, macrostructural level that differences between texts of fiction and of theory are more noticeable in terms of linguistic processing. One area in which Derrida’s *De la grammatologie* and texts of fiction—particularly of the experimental variety seen over the last century—greatly converge is on the emphasis on inference generation, sparking greater activity in the right hemisphere. Owing to the differences in microcircuitry between the two brain hemispheres, it is believed that while the right hemisphere, which has a more diffuse network of neural pathways, is particularly involved in coarser semantic processing while the left hemisphere reigns in these more fluid inferences to zero in on a more determinate meaning to integrate it into the discourse representation. Poststructuralist thinkers—Derrida included—place a great emphasis in their philosophy on the activity typically associated with the right hemisphere (associating it with the idea of actively authoring a text) in a manner that resonates closely with authors of fiction who similarly employ coherence breaks to challenge their readers and spark their imagination. In both cases, the effect on readers can be rather disconcerting, and their tolerance for or enjoyment of the ambiguity is greatly tied up in their generic expectations and agreement or not with whether the text before them ought to be playing with the conventions of writing and exposition in this way. Similarly, Derrida creates for his readers all-encompassing tautological arguments that remind us of Hofstadter’s strange loops which equally complicate the
reading process. It would seem that the enjoyment of these puzzles is greater when their scope can be fathomed—for example, with tightly woven word- or sentence-length paradoxes—but when the logical steps of the circular hierarchy of the structure spreads across (and in Derrida’s case, even beyond) the text, confusion and disenchantment may arise. Again, questions in readers’ minds as to whether or not a text of theory ought to be structured in this paradoxical fashion dominate the discussion of offline reader responses.

Some features of Derrida’s textual play highlight especially well the different manner in which expository texts (or, texts of theory) and texts of fiction are processed. The deferral that the author enacts at the structural level in *De la grammatologie*, for instance, whereby he continually delays the act of providing a definite word meaning or definitive position on an issue, does not appear, based on reader responses, to captivate readers in the same way as texts of fiction are able to in employing similar devices to generate suspense. While the suspension of logic and of meaning is a crux that thrusts the text forward, it simply does not translate into suspense *per se* with readers, who are more likely to grow bored or fatigued with the text than engrossed in it. It ought to be noted, moreover, that the anticipation that Derrida should create with his deferrals is also likely thwarted by the fact that his suspensions are not finite, with the propositions he opens up never being fulfilled. Perhaps the greatest way to look at the effect on readers of Derrida’s generic subversions, however, is through the lens of the situation model framework developed in the cognitive sciences, and its implications for text comprehension and long term memory. The convoluted, labyrinthine way in which *De la grammatologie* is structured simply does not lend itself well to the creation of a solid situation model, a representation in the mind that can be equated with the comprehension of the text. Its forking paths and circular logic are too numerous to be easily grasped. Other difficulties on all levels within the text, from semantics to syntax to logical puzzles, also tax the limited resources of working memory, creating serious hurdles for the creation of strong bonds needed for storing the mental representation of the text into long term memory, from where it needs to be later retrieved for continual updating. It seems that Derrida, with his equal emphasis on form and content in *De la grammatologie*, is encouraging readers to create a strong textbase representation of this text, one more typically associated according to cognitive scientists with literary works, than a situation model. While the subversion is sound from an aesthetic point of view, it does indeed pose challenges to the
reading process, especially if readers enter the text with standards of coherence that are not well suited for this specific read.
Conclusion

Readers approach, read, interpret and respond to texts differently. Reader response and reader reception theories to date, however, have acknowledged only part of this reality. While Russian formalism in the early decades of the twentieth century, with its main proponent Victor Shklovsky, interested itself in how texts could impact readers, as the name of the movement suggests, the analysis rested at the level of form and did not explore the empirical reality of the reading process. It was understood that rhetorical and narrative techniques (for example, metaphor, alliteration, euphemism, detailed description, etc.) would cause a particular sensation of de-habituation in readers—called ostrananie, or defamiliarization—and that this response constituted the distinguishing feature of literature (as opposed to non-literary writings). While the behaviour of readers was considered, it was so only in an abstract fashion, for it was believed that the defamiliarizing features of a text would invariably elicit the same response, regardless of the prior experiences, reading proficiency, intellectual maturity, cultural context, or the interests and patience of readers. Reader response and reader reception theories that came about in the decades that followed, such as those of the Constance School ( Jauss, Iser) and in the United States (Fish) increasingly granted that culture, historical context and interpretive community played a role in the reading process, so that the meaning of a text could shift over time and among readers. Poststructuralism (Barthes, Derrida) pushed even further the idea of the multiplicity of interpretations, conceptually allowing for them to multiply infinitely, a theory that was later reeled in by Umberto Eco who argued for the practical limits of the deferral of meaning. What all of these approaches to the reading process have in common, however, is the continued abstraction of the reading audience—a focus on the role of the reader rather than on the reality of the plurality of the readership. Their primary objects of study are the text and the articulation of the defining features of literature, not the audience.

Texts that present readers with challenges highlight especially well the truly varied nature of their responses. As Leonard Diepeveen has shown in The Difficulties of Modernism, difficult texts and art elicit a whole range of responses, from intrigue, to frustration and even to boredom.
and disinterest. The very variety of these responses, in fact, is what allowed for the cultural paradigm that grew to dominate the twentieth century, in which those who appreciated and purported to understand difficult texts set themselves apart from those who did not see their value. Difficulty was the “cultural gatekeeper” of the age, with the experimental forms of artists such as Picasso and authors such as James Joyce forcing discussions around its merit. As the modernist aesthetics earned a greater foothold in the arts and literature, in the late 1960s, difficulty slid into new genres such as theory with the advent of poststructuralist thinkers—namely Derrida, but also Michel Foucault, Gilles Deleuze, Julia Kristeva, and Luce Irigaray, among others. The sense of controversy largely shifted along with it. While works of fiction published around the same time with comparable linguistic and logical play, such as the defining texts of postmodernism by John Barth and Thomas Pynchon in the United States and the similarly self-reflexive works of Latin American authors Julio Cortázar and Macedonio Fernández, continued to garner some mixed reactions, the fiercest debates were reserved for the value of difficulty in theoretical works, with tongue-in-cheek contests on “bad academic writing” (Denis Dutton’s competition), parodic publications in unassuming journals (the Sokal hoax), challenges to awards from academic peers (the Cambridge philosophers’ petition against Derrida), and stinging obituaries of a lifetime’s work (upon Derrida’s death). The writings that characterize this period, then, are ideal materials for a probe into reader response: they share a similar aesthetic and audience, they emphasize how readers respond differently to texts, and, when the reactions to both works of fiction and works of theory are considered and compared, they remind that genre plays a large role in readers’ expectations of coherency and thus their responses.

The emerging field of cognitive literary studies creates a new framework through which to analyze the relationship between readers and texts, one where the cognitive reality of the readers may be brought to the fore in a fashion hitherto unseen in reader response and reader reception theories. Such an approach draws on the ever-increasing pool of scientific research on language comprehension, in part made possible with the advent of technologies such as neuroimaging and eye movement tracking in the last few decades. While the sciences have not necessarily tackled

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172 Leonard Diepeveen, The Difficulties of Modernism (see chap. 1, n. 38).
the above-mentioned experimental texts at length, it is possible to extrapolate from the results of experiments run on other sample texts how challenging works like those in question can impact readers. For example, one of the most fundamental lessons gleaned in the cognitive sciences that can enrich literary critics’ understanding of reader response for any given text is the time course of reading: research suggests that readers decode orthography around 200ms after words are viewed, semantics after 400ms, syntax around 600ms, prosody around 800ms, and negation between 500ms and 1,000ms. When authors manipulate certain linguistic elements of written language, then, the effect on readers will occur at different moments, depending on the item in relief. For example, the orthographic subversions penned by Cortázar in *Rayuela* are necessarily responded to earlier than the semantic challenges presented by Pynchon in *Gravity’s Rainbow*, the anaphoric tricks played by Barth in *Lost in the Funhouse*, or the games of negation undertaken by Macedonio in *El Museo de la novela de la Eterna*.

The theory of embodied cognition is yet another important contribution to the understanding of language comprehension and the reading process, one that helps explain why certain texts present difficulties to readers. This theory suggests that thinking about an activity elicits similar neural patterns as actually carrying it out (including in the motor and visual cortexes), insisting on the relationship between the body and the brain in reading. The implications of this discovery alone are vast, providing insight into the way readers comprehend scenes and how characters move through them. In many ways, situation model building (the predominant model for narrative comprehension in the cognitive sciences today) depends heavily on embodied cognition, for readers construct settings and understand timelines based on experiential knowledge. A text may seem challenging when it presents information that contradicts this knowledge. While the suspension of disbelief is of course implicit in the reading of fiction, there still exist certain expectations of coherency based on information gathered by the senses. When a character or item, for instance, is presented in multiple mutually exclusive settings, is made to appear in timeframes that cannot be reconciled, or is described inconsistently, various situation models must be constructed. When that common element is later recalled in the text, reading times may slow as all pertinent situation models are activated in the mind in a fan effect, placing strains on working memory. This is a tactic exploited especially well by the author Pynchon in *Gravity’s Rainbow*, which presents readers with a web of inconsistent and tangled vignettes, but it is also employed by authors who explore deconstructed dichotomies, such as Macedonio with
his characters that are said to both exist and not exist, and Derrida who presents a similar game of presence and absence through paradoxical vocabulary and arguments. The framework of embodied cognition is also a promising lens through which to understand the potential difficulty of experimental self-reflexive texts, by suggesting that comprehension of the metafictional paradox—an endlessly looping structure not unlike that evoked by the structure of the Möbius strip presented by Barth on the opening page of *Lost in the Funhouse*—may involve the motor cortex. The ease with which metafictional elements of a text are understood, in other words, may depend on the facility with which their paradoxical form can be manipulated in the mind. Tighter “strange loops” (to use the terminology of Douglas R. Hofstadter), like Barth’s Möbius strip, may be easier to conceive of and to handle than larger, more sprawling strange loops (such as Derrida’s infinitely deferring networks of signification) that can place strains on working memory.

The importance of working memory in the reading process cannot be overstated. Working memory, which is composed of a visuospatial sketchpad, a phonological loop, and an episodic buffer, all managed through a central executive system, is not only a fundamental component of every aspect of language comprehension (from word recognition, to syntactical parsing, to meaning-making and global text comprehension), but working memory capacity—the amount of information that can be processed at once—also helps explain a good deal of the variance among readers in their responses to a given text. With word acquisition, for example, when readers encounter frontier words (terms with which they are unfamiliar, and for which they have but partial mental representations), those who have a greater working memory capacity tend to rely more heavily on their existing mental lexicon rather than the context before them to infer the signification of the new word. Before Pynchon’s uncommon vocabulary, then, readers employ different strategies related to their cognitive make-up. Similarly, where syntactical anomalies are concerned, such as the incomplete sentences that Barth pens, readers with lower and higher working memory appear to process the same information differently, both displaying neural activity at 300ms to 600ms after presentation of the stimulus, but only the former showing activity 900 to 1,500 ms later as well, suggesting some reconciliation effort between their predictions and the new information. Logical challenges, moreover, whether at the linguistic or narrative level (such as Derrida’s indeterminate terminology resulting from his questioning of presence, or Cortázar’s jumping storyline in the version of *Rayuela* that includes the expendable
chapters), which require readers to generate inferences as they attempt to solve the puzzles, necessarily depend on working memory for their processing—particularly the visuo-spatial sketchpad—so that readers with higher working memory capacity can likely find more ease in grappling with the brainteasers than those with lower working memory capacity. A greater working memory also helps readers process complex information in such a way that it can more easily be stored in long term memory, from where it is later retrieved as the read continues. Pynchon’s intricate web of scenes and characters, as well as Derrida’s similarly oblique network of signification, for example, should seem more or less challenging to readers depending on their working memory capacity. Even the ability to sustain concentration on a given text is explained through working memory, with executive control processes responsible for directing attention—a lesson of course relevant to all the texts studied here.

The cognitive sciences not only help explain of the divergence in reader responses before a given challenging text, but they also some shed light on the rather vast variance in reactions exhibited before comparable formal play in texts of fiction and texts of theory. Of course, in many respects, the experimental forms explored in various genres will impact the reading process in a similar fashion. Online responses to games with orthography, semantics and syntax which occur a fraction of a second into the timecourse of reading should have no reason to differ from one generic context to the next, even though the responses will differ in strength and amplitude from reader to reader depending on cognitive factors such as working memory capacity. Derrida’s puns, convoluted anaphoric references, and lengthy sentences, it would seem, should elicit similar responses (N400, N600, increased regressive saccades, and the like) as Pynchon’s obscure vocabulary, Barth’s invented words, Macedonio’s logically ambiguous denotations, and Barth’s exploratory sentence structures. Where generic expectations begin to play a part in reader responses appears to be in the later, offline responses of readers to these de-automatizing microstructural features, when judgment is passed on their appropriateness. Where they also matter greatly is at the macrostructural level. It would appear that readers approach texts with a set of expectations determined by their knowledge of the work at hand, which is shaped by an innumerable host of factors, including readers’ personal histories and experiences, as well as the context in which the text has come to be discovered (for example, the way it has been described by a recommender, the library or bookstore section in which it is shelved, the classroom syllabus which it shares). The “standards of coherence” that readers apply to the read based on this
information will largely determine the ease or difficulty that they encounter in attempting to process it. The expectation, for example, that the plotline or thesis argument will cohere into a logical whole after some effort will shape the way attention is focussed, and thus which elements are engaged with in working memory; if the read before them is never meant to come together in such a way, then this struggle may be rather disheartening. Significantly, standards of coherence based on generic expectations appear to lead readers to focus more closely either on the propositional network of a text (i.e., building a textbase representation) or its underlying structure (i.e., building a situation model). Approaching a read with a view to constructing a situation model when the author engages in tactics that discourage precisely this will surely lead to difficulties. According to studies, readers generally expect that a text of fiction ought to be read with a focus on building a strong textbase, as information here is presented with important nuances and open-ended issues to be answered only in time; expository texts and texts of theory have traditionally been more straightforward, and so readers generally approach them with a view to building a situation model. It is perhaps not surprising, then, that when authors turn this convention on its head—such as Derrida and his fellow poststructuralists—readers are taken aback as the words before them do not lend themselves well to their usual text processing strategies.

The importation of knowledge from the cognitive sciences into literary criticism not only helps critics better understand the reading process from a psychological point of view, but it is also an impetus for a re-examination of the rhetoric used in existing reader response frameworks and theories of interpretation in literary criticism. For example, an important lesson put forth within these sciences is that the mind is always active during the reading process. With the value of difficulty being emphasized during the twentieth century, a distinction came to be made between “active” and “passive” reading, perhaps most notably with the poststructuralists who championed “writerly” texts that challenged readers over “readerly” works that are supposedly more straightforward. However, from a cognitive standpoint, this system of categorization does not hold, for all reading involves work on readers’ part. Just reading a word on a page implies a good degree of mental activity, as neurological scans obviate, with a number of resources being called upon (working memory, long term memory, the right and the left hemisphere, etc.). Moreover, whether a narrative is complex or not, a good deal of effort is spent attempting to reconcile between the immediate information received and the global context. While the right
hemisphere tends to be associated with more imaginative thought (metaphors, joke comprehension, varied connotations, etc.) and the left hemisphere with more denotative interpretations, the work of both are required at all times during the reading process. To separate the work of the two, associating their functions to texts with varying levels of difficulty, holds but in a metaphorical sense.

Yet another important point to be made in incorporating of research from the cognitive sciences into reader response analysis in literary studies is the necessary acknowledgement that not every word is read with the same attention—and sometimes, certain words and passages are simply not read at all. Details are often missed (as seen with Macedonio’s inconsistencies in character naming), some anaphoric references are never solved (as seen with Barth’s layering of quotations that make the search for the referent difficult if not futile), some words are never properly learned (as seen with Pynchon’s erudite and at times inventive vocabulary, and with Derrida’s linguistic creations with indefinitely deferring meanings), some entire sections of novels are glossed over or ignored (as seen with Cortázar’s intervening expendable chapters that are often unread, as readers attest), and some storylines are altogether misunderstood (as seen with some of Pynchon’s scenes that are later quietly revealed to be imaginary or dreamed, leading even literary critics astray in narrative comprehension). Critically, reading can carry on—readers go back on passages, or plough through to the next page. These peculiarities of each read make for not just a different reading experience, but also a different mental representation of the book’s contents, and a different understanding of the text. Formalist reading theories will not acknowledge this, and while poststructuralist ones recognize that texts are understood differently, they dismiss the notion that reading is a bodily activity whereby each reader not just interprets but also responds differently to a given text, and that this is an integral part of text comprehension.

What most reader response and reader reception theories to date also fail to respect is the existence of a readership outside academia. When acknowledged, these readers are often dismissed through elitist language and views (for instance, as with Barthes’s consumerist, “work”-reading audience). The theories of reading that have dominated the twentieth century and beyond have sought to defend the notion of literariness rather than to understand readers—as individuals, as a multiplicity, and as corporeal beings who respond to the same stimuli in various fashions. This study has attempted to remedy this exclusion by giving just as much weight to the
popular audience as to the scholarly one in the analysis of reader responses. In fact, doing so has allowed for a greater pool of uncensored commentary thanks to the nature of the common media through which these views are often communicated (online blogs, forums and other).

Just as significant advances have taken place in the cognitive sciences over the past two decades or so (MRI, EEG, etc) that have allowed us to review the act of reading with a new lens and a slew of informative data, online technology and particularly social media have advanced at a comparably rapid pace to provide a once-unimaginable bevy of analytics through which to understand reading habits. Over the few years it took to write this dissertation, numerous new technologies and products have been introduced to the market, at a speed which made them difficult to incorporate into the present work post-factum. However, they are certainly worthy of a mention in the concluding thoughts. Perhaps not surprisingly, these statistics-collecting tools and systems have primarily been devised by companies and corporations to better understand their consumer base and how to appeal to it (Amazon, Chapters and other online book sellers, as well as publishing companies). That being said, the burgeoning technologies available today to gather intelligence on the behaviour of readers are already impressive, and can just as equally nicely serve more academic research on the reading process as well. At its most basic, online purchasing companies can easily track the books which customers browse and ultimately buy, enabling them to suggest other titles that may interest them (based on their selections, and comparing them against information collected from other site users). Some of the most game-changing technologies, however, probe readers’ behaviours, preferences and habits far deeper, amassing data on the marginalia of the twenty-first century. The advent of e-books (electronic books) and the e-reader platforms that support them (Kindle, Kobo, Nook, etc.) have made possible a gathering of information and insights onto the reading process in a manner that could hardly be imagined in Shklovsky’s early 1920s era. The markings, notes and dog-eared pages of traditional print books are effectively impossible to collect en masse; however, those of the electronic variety can be compiled, statistically processed, and shared within an instant. Even data about the number of pages read and the amount of time spent reading can be tracked by e-book publishers. Remarkably, this type of information allows them to better grasp reading habits across genres. As The Wall Street Journal journalist Alexandra Alter writes, Barnes & Noble, owner of the Nook e-reader,
has determined, through analyzing Nook data, that nonfiction books tend to be read in fits and starts, while novels are generally read straight through, and that nonfiction books, particularly long ones, tend to get dropped earlier. Science-fiction, romance and crime-fiction fans often read more books more quickly than readers of literary fiction do, and finish most of the books they start. Readers of literary fiction quit books more often and tend [to] skip around between books.\textsuperscript{173}

Intelligence technologies are being developed, improved and released at an exponential rate nowadays, and the momentum and new possibilities only continue to grow with the rising popularity of electronic books. In May 2011, Amazon, the current market leader in e-book sales, announced that for each print book that it sold in the United States, it also sold 105 electronic books on its Kindle platform.\textsuperscript{174} In August 2012, it announced that e-book sales similarly overtook print book sales in the United Kingdom at a ratio of 114 to 100.\textsuperscript{175} The world of reading, readers, and the reading process is undergoing a monumental shift at this time, and so it is perhaps more important now than ever to look at the real relationship between texts—inclusive of their physical format—and readers.

The cognitive sciences—a relatively new field of science made possible thanks to advances in technology—will continue to gain momentum in the coming years, offering new insights into the brain. A better understanding of language is part of this research, and the number of studies that are published on language and reading is growing steadily year over year. Given that literary theory, at its core, has the same object of study—language—it seems that a tighter relationship and more frequent dialogue between the two disciplines would be immensely beneficial to both areas of study. On the one hand, questions posed by literary critics (around difficulty and genre, for instance) could shape research conducted in the sciences, and even push it to consider its


object of study and findings within a larger, more holistic context that incorporates culture, history, and philosophical implications; on the other hand, insights from the cognitive sciences should necessarily encourage new lines of questioning and novel, practical approaches to meaning-making in literary theory. As literary studies looks to find its place amid today’s high-tech, multi-media, fast-paced world, and in many cases, even prove its practical relevance to today’s society before financially-strained university boards, cognitive literary studies may be precisely the refreshing approach to literature that is needed. It is sure to uncover a wealth of new, pragmatic, revolutionary and—quite simply—fascinating knowledge that is surely of interest both within and outside the discipline.
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