A GRAMMAR OF ATTENTION:
A Treatise on the Problem of Meaning

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Introduction

The library routine

As an academic working in an English department in a research university, I routinely walk from my office across campus to the university's main library (named Kelvin Smith) with the intention of borrowing or returning books. One day as I was about to enter the building from the pedestrian avenue running from my office to Kelvin Smith Library and climb to the third floor to retrieve a book I've been meaning to read for some time, my attention shifted to the ongoing renovation project on the rear facade of an adjacent building: Severance Hall, home of the Cleveland Orchestra. I was so thoroughly enthralled with the spectacle before me that I walked straight past the library entrance, forgetting for a moment the very reason why I was outside. I offer this synopsis (of which a complete version awaits you inside these pages) to call your attention to the preeminent role attention plays in meaningful human activity. Even the most mundane activity offers to the astute observer abundant insights into the workings of the human mind. All thought and action depend on our capacity to attend, so the title of this treatise.

Starting Points: Definitions, Metaphysics, and Method

Definitions

Readers familiar with rhetorical and literary criticism cannot ignore in the title a strong echo of Kenneth Burke's *A Grammar of Motives*. Like Burke, I use grammar to mean elemental principles of an art or science laid out in methodical form. In the present context, the term grammar does not refer to iron-clad rules but to general principles for modeling experiential patterns which, as Halliday puts it, "enable

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human beings to build a mental picture of reality, to make sense of their experience of what goes on around them and inside them"(1985: 101).

Having just clarified the meaning of grammar in the present context now leaves me with the trickier task of clarifying the meaning of *attention*, a term signifying for many the key component of conscious mental life. I take the view that a theory of attention stands as a prerequisite for building the theoretical framework of a cognitive semiotic: the study of the online construction of meaning as we stand, walk, sit, think, speak and listen, read and write, and otherwise apprehend, perceive, and muse *in* and *about* the world, *with* and *about* ourselves and others. The cognitive semiotics program I outline in this book begins with the assumption that human cognition is *situated*. To say that cognition is situated is to say that *what* individuals sense and perceive, *how* they conceive the ongoing activities of daily life, and what they *do* while sensing, perceiving, and conceiving develop simultaneously in specific locations (Clancey 1997). If cognition is situated, then sensing, perceiving, conceiving, and acting are mutually reinforcing activities, not separate faculties or modules.

But these reinforcing activities only take place as we learn to attend.

Attention, then, is at once the *sine qua non* of intelligent behavior and a most vexing category in cognitive sciences, so much so that many researchers avoid using the term altogether. I, on the other hand, cling boldly and foolishly to the term attention and further contend that its six theoretical constituents-- *alerting*, *orienting*, *selecting*, *sustaining (focusing)*, *controlling (switching & dividing)* and *sharing*-- provide an enabling vocabulary modeling the emotions, knowledge, beliefs, and actions that follow from and feedback into meaningful experience.

I am certainly not the first to recognize the importance of attention in cognitive science, nor am I the first to recognize its importance in linguistics, and for centuries rhetoricians have been suggesting (with varying degrees of explicitness) that the art of rhetoric is the art of getting and maintaining the attention of the other. However, this study is the first to construct systematically from preexisting theories

and models a dynamic framework for studying meaning construction. I do so from the perspective of three interrelated fields of inquiry: semiotics, linguistics, and rhetoric.

For several years, I had been trying to construct an approach to meaning construction that would be at once semiotic, linguistic, and rhetorical in character. Even though it is easy to see overlapping concerns in all three disciplines, it has proven to be devilishly hard to articulate precise points of convergence. I realized that a more comprehensive account of meaning requires a metatheory that could encompass both nonverbal and verbal forms of meaningfulness. The six components of attention presented here constitute such a metatheory. Furthermore, I hope to demonstrate that the approach I have developed is a good theory in that it makes concrete, testable predictions (although I do not pretend to have rigorously tested any of them much beyond methodological framework of text analysis), that it exceeds mere observation, and that it can compete with other theoretical frameworks.

I am using the term "framework" as a substitute for what some derisively call *grand theories*, or theories that are doctrine-driven rather than problem-driven. In calling it a theoretical framework, I am acknowledging that this study is both doctrine *and* problem-driven. In assuming that a theory of attention is the most appropriate metatheory for developing a theory of meaning, I am adhering to a particular doctrine: all other cognitive and cultural processes ride piggyback on attention. There may, in fact, be many alternative metatheories on which to build a theory of meaning, and, indeed, one may develop better theories of attention on which to ground a theory of meaning. In assuming, however, that all human beings have a capacity to attend and are subject to distractions that can derail complex tasks, I am articulating a widely recognized problem. This study is additionally problem-driven to the extent that specific aspects of meaning making can be properly characterized as semiotic, linguistic, or rhetorical or some combination thereof. I am imposing certain boundaries on selected data and claiming the need for analysis by one or more of these perspectives, each with its own tell-tale characteristics. For example, a semiotic problem is one which focuses on how signs and sign systems interact: how buildings can mean

functionally, aesthetically, and ideologically, for instance. A linguistic problem is one which focuses more specifically on how verbal signs interact with other verbal signs and with other sign systems: how a name corresponds to an icon on a map, for instance. A rhetorical problem is one which focuses on the public uses of signs and their effects in and over time: why the new building for the Weatherhead School of Management is more commonly referred to as "the Gehry building" instead of its proper designation, the "Peter B. Lewis Building". The theory outlined here regards all three perspectives as equally important: no theory can approach "the problem of meaning" without looking at acts of meaning as problems that are at once semiotic, linguistic, and rhetorical.

Whatever its deficiencies, my grand theoretical design serves the noble purpose of simplifying that which is devilishly complex. During the early stages of any theory's development, oversimplifying is more often enabling than inhibiting—and lest one think that because Western civilization has been doggishly contemplating the meaning of meaning for over two millennia that we have reached a mature stage—I remind you that current consensus among most scholars is that no comprehensive, mature theory of meaning has yet survived to adulthood (with the possible exception of Peirce's semiotics). It stands to reason that a theory outlined here is still in its infancy. As such, I see my task as one of nurturing the infant theory to childhood and beyond.

Metaphysics

A project aspiring to develop into a general theory of meaning construction should, at the outset, reveal its metaphysical biases. Every theory of meaning has to admit to its initial assumptions of how human beings relate to the world. Broadly speaking, the philosophical tradition in the West has given us two opposing positions that, to my mind, constitute the metaphoric Scylla and Charybdis of theories of meaning: rationalism and radical relativism.[1]

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[1] The rationalism-relativism controversy mirrors the realism-nominalism debate in medieval semiotics over the existence of universals. Realists like St. Anselm of Canterbury (1033-1109) and William of Champeaux (1070-1120) followed the Platonic doctrine stipulating that universals existed independently of particular objects, thus

Headstrong rationalists assume the existence of a world independent of signs and sign processes. Natural language exists on top of this world and consists of a core set of conventionally held definitions and referential expressions for linking these definitions to objects in the world. For rationalists, meaning arises only when the established link between linguistic sign, referent, and definition obeys a prior set of truth conditions.[2] Whatever its merits might be for developing systems of logic, the problem with the rationalist position is that no accommodation can be given to the prior act of generating the set of definitions that obey truth conditions. How is it that true propositions develop? Rationalism eliminates the role signification itself may play in conceptualizing the reality one intends to describe. Both the individual and the culture claiming her for its own are removed entirely from the system. The rationalist position also leads to the troubling need for arbitration from outside the universe. Correct interpretations of the world must come from someone or somewhere inaccessible from inside our world.

Zealous relativists, on the other hand, assume a world constituted by linguistic signs.[3] All thought

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general predications like "rock" were in fact real things, for they distilled essences of "rockness" manifest in any particular rock. Nominalists like William of Ockham (1285-1349) argued that only particulars existed in nature, and that universals only refer to names, or signs without any existence of their own. A third, "conceptualist," option was advanced by Peter Abelard (1079-1142) and Thomas Aquinas (1225-1274) that universals are mind-dependent phenomena (a nominalistic trait) but that these mind-dependent universals were, in fact, formed by real similarities between particulars, that is to say, particulars actually had common forms. The third option in medieval semiotics has much in common with the third option described in these pages, with the crucial distinction that universals and particulars exist a dialectic between the sensory-perceptual qualities of human interaction with a three dimensional world and the conceptual qualities of human capacity to make generalizations. The appeal to "real similarities of common form" obscures the dialectical nature of universals as emphasized in the modified realist position I embrace. (see Nöth 1990:18)

[2] Frege, in his *Begriftsschrift* (1970[1879]) provides us with a good example of the rationalist position as he tries to model "pure thought" based on arithmetic.

[3] I associate these radical relativist positions to later work of Baudrilliard (2001: 148) on "hyperrealism" and Lyotard's account of the "differend". I am purposefully avoiding the appellations "postmodernist" or "poststructuralist" here because I do not want to equate the views of Baudrilliard in particular with the views of other thinkers identified by the same name, such as Bourdieu, Derrida, and Foucault. As near as I can tell, Baudrillard's project can be characterized as "rapant theorizing" whereas Bourdieu's, Derrida's, and Foucault's projects (each quite different from the other) can be characterized as "poststructuralist critique" of fixed meanings. Lyotard is a complex case. On the one hand, he is more like Foucault than Baudrilliard in that his project seeks to reveal how different "discourse regimes" are at war with one another, but what makes him a zealous relativist in my estimation is that he sees signification as a process of one set of signifers doing violence to another set of signifiers. Lyotard's battlefield resembles more Baudrillard's "control screens" than Foucalut's "systems of knowledge,"although Lyotard's notion of "tensors" tacitly appeals to the persons controlling the screen, something for which Baudrilliard's theorizing cannot consider, as Ruthrof points out (2000:165). Foucault, on the other hand,

is linguistic, all reality is linguistically mediated, and no referential relationship can hold world and language together. Taken to its logical extreme, meaning becomes little more than the senseless unfolding of signifiers, thwarting all reference and meaning. Semantics decays into the surface of arbitrary signifiers. And a set of arbitrary signifiers is sufficient to produce culture and world view, since the world is controlled by signifiers doing nothing but directing attention to other signifiers: we are totally in the thrall of linguistic significations because there is no outside the signifier. Cast in metaphoric terms, acts of meaning are terrorist acts taking place within "an agonistics of language" and all of semiotics can be reduced to the study of "language moves". Whatever the merits may be of focusing attention on linguistic control screens and language moves (which are considerable in my estimation), the theory behind it, as Ruthrof (2000: 29) points out, runs into "massive contradictions" when one wants to understand the "mechanisms of control" or when one wants to specify the "initiators of language moves".

I think it fair to hold both the rationalist and relativist positions accountable to some fairly well-established facts that cannot be understood in terms of *a priori* definitions or the endless unfolding of verbal signification: all cultures linguistically encode experiences of gravity and words for the earth, the sky, and the sun; all cultures contain words and phrases for emotions and facial expressions, and manipulate general scenarios about human intention (Palmer 1996:44). All cultures have populations within them able to employ *modus ponens* reasoning (i.e., from the antecedent) or *modus tollendo tollens* reasoning (i.e., from the consequent) when trying to understand everyday reality (see Hutchins 1980:13). By contrast, no culture survives on the beliefs that bodies defy gravity, that predators do not exist, that fire will not burn flesh, and no culture uses back-to-back conversation as a default mode of interpersonal communication.

Neither hard-headed rationalism nor extreme relativism allow for any hard-won insights from cognitive and neurosciences to enter the picture, either. I think it also fair to hold both positions

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does not reduce the "modalitites of power" to signifiers. In fact, Foucault goes even further and rejects the notion that language itself is "autonomous and . . . constitutive of reality" (Hoy 1986: 4). For Foucault the subject emerges from discursive *and* behavioral practices.

accountable to some fairly well-established facts regarding how the human visual system operates, since visual perception is particularly relevant to how human minds conceptualize real or imagined states-of-affairs. Our visual perceptual system automatically leads us to believe an object persists even when we do not sense it continuously (i.e., "sensationless perception"); our visual system leads us to assume that an object is rigid on the basis of perceiving that all its parts move together (i.e., "object persistence"); and we persistently believe a perceived object will conceal and reveal portions of the background ("persistence and change in the environment").[4] In their purest forms, rationalism and relativism rely either on predetermined sets of fundamental definitions or on arbitrary sets of linguistic signifiers only. Both offer us little more than ungrounded formalisms. It seems fool hardy, however, not to consider how cultural regularities and invariant features of perception (visual or otherwise) presage the theorizing of meaning.

One metaphysical position piloting us between the Scylla of rationalism and Charybdis of relativism is *abductive realism*, a term I credit once again to Ruthrof (2000: 5, 171), but which has as its proponents Peirce, Gibson, Bühler, among many others, and which fits within the greater metaphysical tradition Flanagan calls *naturalistic emergentism*. Associated with William James, naturalistic emergentism is the view that all things "must emerge in law like ways from the complex interactions of natural objects, events, and processes" and that the universe is *closed*: "immaterial stuff" cannot give rise to "material stuff" (Flanagan 1991:44). Notice that rationalism, taken to its logical conclusion, postulates an *open* universe of outside arbiters; notice as well that radical relativism seems to regard ungrounded symbols and signification processes themselves as outside arbiters. Each of these positions places considerable faith in the generative power of ungrounded formal systems, but they do so for seemingly opposed reasons. The abductive realist position falls into neither trap. So, what exactly is the abductive realist alternative?

To answer this question, let us consider each term separately and then together, starting with realism.

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[14] See Ramachandran & Anstis 1986 for an accessible overview of human visual perception.

Realism in this context deviates from rationalism in assuming that the world can be known accurately through perception (no pure thought system exists). Apprehending the real is first and foremost an ontological achievement that subsequently pays out epistemological dividends. I associate this position with Gibson (1966, 1979), whose ecological approach to perception postulates that human beings are set up to be sensitive to information patterns and appreciate their nuances.[5] That is to say, low-level perception of the real world does not project ambiguous sensations that are perceived only when top-down inferences are applied to them. Rather, the observer "resonates" with her environment and perception is direct because stimuli come prepackaged as meaningful constructs. For instance, a pattern of light itself carries information about its source, i.e., whether it is luminous or illuminated (1979: 47),we detect directly surfaces, their textures, continuities, and discontinuities and we pick up crucial information from these perceptual events that subsequently influence the way we think.[6] Given the way human

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[5] Invoking Gibson may seem inappropriate, since I am developing a semiotic theory that relies on a collection of terms, such as "mental," "inference," "sensation," "cognitive maps," "schemas," and "representations", that Gibson himself found highly problematic. Gibson appears so notoriously antimentalistic to critics like Fodor & Pylyshyn, that "According to Gibson, perception is not mediated by memory, by inference, nor by any other psychological processes in which mental representations are deployed" (qtd in Clancey 1997: 271). But as Clancey (1997: 271) points out, the notion that Gibson did not "believe" in internal representations stems largely from unstated assumptions about the meaning of the term *mental*. Fodor and Pylyshyn, for instance, use the term mental to mean all neural operations, since perception itself is mediated by a symbolic "buffer". But for Gibson, mental only means conscious, deliberative processing, nothing more. Perception is direct in that it does not require mediated symbolic representations *in order to count as perception*. My use of the term mental is inclusive like Fodor and Pylyshyn in that mental stands for cognition in general; however, I side with Gibson in assuming that perception needs no symbolic mediators. More fundamentally, this project embraces Gibson's insight that all knowledge (including abstractions) rests on the uptake of information from an environment.

[6] According to Gibson's theory of direct perception, patterns of light constitute properties of an environment that are reliably present to an organism. If normal development occurs in that organism, there is no way she or he can fail to detect that property (i.e., nothing has to be inferred indirectly). Consider the statement "Todd perceives Kelvin Smith Library." The fact that Todd senses a multilevel building is a matter of direct perception, whereas the fact that Todd categorizes it as a particular kind of institution is a matter of direct perception plus a host of other social cognitive and symbolic processes involving long-term memory and higher-order categorizations. With respect to direct perception, however, this statement presupposes a law, *L*, in which a property (or set of properties) *P* of an "ambient array" (e.g. light, surfaces with contours and disruptions, textures, and so on) relates lawfully to the Environment, *E*, in the organism's (i.e., Todd's), *O*, niche. Given *L*, "Todd perceives Kelvin Smith Library" calls attention to a factual state of affairs if E is present and if P embedded in E to form L is available to O, and if O in fact detects the property, P, detectable in E by means of L. Succinctly put, my perception of this structure as a structure is a lawful and direct unfolding of my ability as a sensing organism to detect invariant properties of my environment. (This account follows closely the description of direct perception offered in Turvey & Shaw 1994:156-157.) Furthermore, the manner in which I live my life (i.e., my niche) guarantees that I will be in a position to perceive these properties. In contrast, indirect theories of perception (associated with the philosophy of

perception seems to work, the structure of the perceptual world is already given to an observer in unambiguous ways, because organisms (including human beings) attune to environmental properties directly without mediation from higher-order mental representations. At higher orders of perception and cognition, the observer then uses unambiguous information to build complex and provisional mental models of the world based on bodily interaction with that world. It is at these higher orders of cognition that human interests, needs, and concerns shape what human beings will perceive. Therefore, Gibson's ecological realism necessitates its complement of embodied realism, a position associated with Lakoff and Johnson (1980, 1999) and anticipated obliquely by Peirce's (CP 2.227) notion of *Coenoscopic* observation--i.e. individuals analyze phenomena on the basis of ordinary experience--and anticipated directly by Bühler's theory of *ocular deixis*--i.e., individuals experience their "*tactile body image . . .* in relation to visual space" (1934: 145 author's italics).

Abduction refers to one of three modes of reasoning (the other modes being *induction* and *deduction*) characterized as synthetic rather than analytic. Due to its conjectural and presumptive nature, abduction was traditionally regarded as an invalid mode of reasoning until Peirce made the case that to understand anything at all, one has to engage in abduction. If inductive inferences are bottom up classifications of data, and if deductive inference is top-down predictions, abductions are inferences that negotiate bottom-up and top down processes by conjecturing or presuming (usually causal) relations between them. When someone observes another person in a crowd laughing and smiling, she may infer a specific emotional state or general mood of the observed by "interpreting" the individual's facial expressions and verbalizations against background "knowledge" of festive occasions.[7]

Kant and the science of Helmholtz) would add a layer of "unconscious reasoning-like steps," the output of which is a series of still unconscious propositions about the perceptual world resulting in true or false beliefs. In the Hemlholtzian and Kantian traditions, *conceptualization rules perception*. In the Gibsonian and situated cognition traditions, *perception rules conceptualization*.

[7] I am placing these words "interpret," "knowledge," and "readings" (appearing in the next paragraph) in quotation marks because I am not convinced that they are the most accurate terms at this point, conveying too strongly conscious deliberation processes that may not be so conscious or deliberate. However, our current lexicon has few felicitous alternatives. Clancey's notion of "structural coupling" to denote the relationship between organism,

In summary, abductive realists assume human beings access the world through sensation and perception, and high-order perception is, in fact, the interpretation of nonverbal signs. We continually produce nonverbal "readings" of the world. Individually and collectively, we are thrown into a world accessible only through visual, aural, tactile, olfactory, motoric, and gustatory sensations. Each sign functions in a network of related or relatable signs, the emergent properties of which produce either familiar or novel readings of the world. Commitment to a nonverbally constituted world, however, is not a commitment to metaphysical realism. Abductive realism commits to the position that the world out there does exist, and its very existence and structure imposes constraints on the kinds of signs we have and use. At the same time, it acknowledges that the world can only be accessed through those signs. We are, therefore, committed to the metaphysical belief that one cannot bypass the semiotic world, even though we frequently bypass the linguistic world. The universe is "closed."

The reunion of perception and conception implicit in the abductive realist stance brings us back to the notion of attention. All living organisms attend to their immediate environment. They attend in order to select specific items (in the broadest sense) and to ignore other items. Based on a metaphysics grounded in the abilities and limitations of bodies, we can conclude that human beings have a highly selective perspective on the world; we think we sense it all, but in reality we sense only a very small portion of what is out there. Furthermore, we do not know directly from the bottom-up; rather, we base our specific sense impressions on models, schemas or frames; thus, we are always interpreting. The selection, sustain, and control of attention provides a useful model for understanding how we "compose" reality (and alternate realities or fictions), and, once composed , how we turn these compositions into thought and action. Abductive realism, then, poses the existence of reality out there, but places the human sensory system and human culture front-and-center, without relying on extraterrestrial arbiters of truth and without putting language in charge of everything. In a grammar of attention, language is one

environment, and information is an attractive new term suggesting the sensorimotor substrates of the conceptualizing processes connoted in the terms used above.

(preeminent) sign system among many others, and one that can never function without these other sign systems. Ultimately, meanings are most often about what is happening outside of language.

There is an additional advantage to abductive realism. It allows us to replace talk of truth with talk of sufficient reason, conferring our metaphysic with a decidedly rhetorical dimension. Sufficient reasoning acknowledges what the truth cannot: we live in a world of contingencies and exigencies; therefore, we must stop the reasoning process in order to act (Ruthrof 2000: ch. 11). At some point, we have to suspend the reasoning process and declare sufficient reason for believing and acting. Abduction suggests that all we can do is attend selectively to information out there, interpret it with respect to general schemas and specific mental models which culture provides, and make judgments based on converging semiotic evidence.

Method

The study of semiotics and linguistics is fraught with disagreements over method, particularly with regard to the kind of data to use, how to collect it, and how much of it to examine. At the risk of oversimplifying, I would claim those conflicts about method in disciplines in which I work can be captured by the same two traditions of inquiry that Galison (1997:19-31) argues identifies the source of disagreements among some particle physicists: The *image tradition* and the *logic tradition*.

The image tradition has as its goal the representation of natural processes in all its complexity. As such, it demands that researchers build and use machines such as nuclear emulsions, cloud chambers, and bubble chambers for capturing an event as it occurs(the so-called "golden event"). In the image tradition, evidence for the existence of a particle or effect depends on the presentation and interpretation of single events. In contrast, the logic tradition has as its goal representations of statistical regularities across natural processes and aims to make generalizations across events. As such, it demands that researchers build and use electronic machines like counters, spark chambers, and wire chambers for

assembling masses of data and making statistical generalizations across many similar events. In the logic tradition, evidence for the existence of a particle or effect depends on statistical frequency of particle behaviors. The upshot is that research in the image tradition is often immune from the charge that it has left something out, but vulnerable to the charge that it has located a fluke or oddity. On the other hand, research in the logic tradition is immune to the charge that it has located a fluke or oddity, but vulnerable to the charge that it has left something out of the account.

Galison's description of these two traditions may be appropriate heuristic for a self-conscious assessment of method as it pertains to semiotics, linguistics, and rhetoric. The image tradition of inquiry focuses on golden-events with the aim of capturing as much of a given event as possible. Much rhetorical and literary criticism, discourse analysis, and semiotic analysis routinely mine for golden events. The logic tradition of inquiry focuses on statistical frequency with the aim of capturing regularities of form and meaning within a language or sign system. Much work in composition studies relies on quantitative research on the production and distribution of written forms (i.e., genres and sub-genres) within specific settings. Corpus based linguistic research operates within this tradition, and, most recently, various usage-based models strive to go beyond introspection to capture such frequencies.

A criticism leveled against the image tradition is that an investigator has focused too much attention on a textual fluke or oddity and may not reveal anything substantial about mind and language; a criticism one might charge against the logic tradition is that an investigator has focused too much attention on the distribution of forms and has missed important pieces of the puzzle.

In defense of the image tradition, I would argue that the attested existence of a particular semiotic event, no matter how novel or odd, calls for an account. A supplementary defense would be the claim that models used to interpret semiotic exotica are more likely to "scale down" to the everyday, mundane instances of meaning construction, while models used to deal only with everyday items generally fail to "scale up" to the exotic instances. Hence, focusing attention on golden events in their historical contexts

is still a promising method.

In defense of the logic tradition, I would argue that, properly done, the research proceeds from development in the image tradition before proceeding to the logic tradition. Current usage-based theories of language developed by Langacker (1998, 1999), Barlow & Kemmer (1999) are exemplar cases.

The method of this study reflects strongly the *modus operandi* of image tradition. The data studied definitely fall within the golden event category, for I take seriously the advice "in any field, find the strangest thing and then explore it." However, I do attempt to support select accounts with corpus data from the text corpora. In fact, some linguistic examples receiving extended commentary come from the Lexis-Nexis data base, a resource providing investigators with examples of specific constructions and their use in specific rhetorical situations (at least uses among print and television journalists). While I will focus on specific examples, many of the examples come from this and other corpora and sources, and I will try to make some generalizations about a given construction by looking across examples, too.

An Outline of the study

To prepare you for what comes next, I conclude this introduction with a brief outline of the proceeding chapters.

The first chapter, "Attention and Cognition," introduces this study. In it, I present a familiar story: walking from my office to the university's main library to borrow a book. Reflecting abductive realist assumptions, the story portrays individual human cognition as arising from the perceptual acuity and material culture of the person walking. Reflecting image tradition methods, this account is itself a golden event illustrating the role attention plays in everyday thought and action. Reflecting rhetorical strategy, this account of common daily practice provides an occasion for defining basic terms current in cognitive science, linguistics, and cognitive anthropology, and provides a forum for discussing the cognitive

processes of memory, categorization, and valuation.

This study proceeds with three chapters comprising the components of the theory, a fourth chapter dedicated to descriptive applications, and a fifth concluding (and highly speculative) chapter on the brain, the self, and autism.

Chapter two, "Semiotics and Attention," presents a cognitive theory of semiotics (the most general of the three areas of inquiry). I argue that sign production and interpretation are attentional phenomena best understood within a Peircean framework. Reusing the story recounted in the introduction as my principal illustrative case, I show how a semiotics of attention employs the mental spaces and blending framework developed by Gilles Fauconnier and Mark Turner, a full description of which will show why it is one of the most promising theories of online meaning construction to date, but a theory still in need of further development, especially with respect to the allocation of attention. I conclude this chapter by laying out six principles of semiotics that underlie acts of meaning construction. They include the following: subjectivity, intentionality, temporality, simulation, publicity, and materiality.

Chapter three, "Linguistics and Attention," applies lessons learned in the previous chapter to linguistic theory. Linguistic theory in the later half of the twentieth-century was guided by the notion that knowledge of language is cognitively-encapsulated, separated from the outset from other 'general' cognitive processes, such as attention, memory, and categorization. I favor a new emerging view that regards the most interesting aspects of linguistic knowledge to derive from usage events constrained by general cognitive operations. Linguistic knowledge is rather a system continually shaped, from the very beginning, by linguistic usage events, which, in turn, depend on an expanding attentional budget. In this respect, I draw on cognitive linguistic theories, such as accessibility theory, cognitive grammar and semantic, and, of course, mental space grammar to create a linguistics of attention. I do so by analyzing a range of real examples in their full contexts, including marked lexical constructions and idioms, reflexive pronouns, passives, verbal prefixes, and a passage from James Boswell's *Life of Samuel Johnson, L.L.D.*

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Chapter four, "Attention and Rhetoric," examines the same set of data from the previous chapter, this time with the aim of describing a cognitive theory of rhetoric. Defined as the study of the public use of signs in specific historical contexts for specific purposes, the study of rhetoric develops from a linguistics of attention. I begin this chapter with an overview of four prominent rhetorical theorists, starting with Aristotle, jumping ahead two-millennia and discuss the work of Chaïm Perelman and Lucie Olbrechts-Tyteca, Kenneth Burke, and David Kaufer and Brian Butler. Each theorist contributes specific features important for the construction of a rhetoric of attention: Aristotle contributes a classification of artistic proofs (*ethos*, *pathos*, and *logos*) as well as his remarks on style; Perelman and Olbrechts-Tyteca contribute a context sensitive theory of argumentation based on the notion of *rhetorical presence*; Kenneth Burke contributes a notion of symbolic action and *rhetorical identification*, which together with rhetorical presence provides a useful extension of cognitive linguistic research into the domain of pragmatic discourse; and Kaufer and Butler offer a major revision of the way rhetorical commentators have thought about the structure, use and circulation of writing with their theory of *rhetorical design space*, a concept providing a useful extension of the mental spaces and blending framework. As with the previous chapter, my aim is to combine components from these three theories to create a rhetoric of attention. The final section of the chapter puts the components of a grammar of attention together with a full-scale semiotic, linguistic, and rhetorical analysis of a British Airways advertisement.

In Chapter five, "Attention and Setting" extends the descriptive applications section of the previous chapter to examine four case studies of texts operating in distinct settings. First, in keeping with the advertising theme, I examine a set of medical advertisements appearing in professional journals for medical practitioners, a readership that is most likely to read these advertisements in a professional setting, where the orientation to the practitioner scene implicit in the semiotic design of these texts is most saliently activated in the target readership's mind. Second, I examine two sets of student writing, one set at clause and sentence level, the other at the discourse level to see how the "attention budget" of these

writers breaks down resulting in grammatically and rhetorically poor performances. I argue that these

breakdowns are due, in the first instance, to external pressures by professors to "write correctly" and, in

the second instance, to the demanding nature of the compositional task of asking students to sustain for

too long a "double scope attention" between two different representational domains. Finally, I examine

texts that can only be read in a specific and highly circumscribed, institutional location: the public art

museum. The texts in question are prepared presentations on CD-ROMs, which patrons can listen to as

they look at a painting. My analyses emphasize how location and space constrain the representational

functions of attention and how that constraint determines the linguistic and rhetorical choices the writers

make. I end this study with a discussion of future prospects in the development of a grammar of attention

as it relates to acts of reading and writing.

The final chapter, "Attention, Brain, and Self," engages in early speculation about neural

substrates of the phenomenal self, a chief problem for a complete semiotic theory. Theorizing meaning

making is sometimes best done by considering cases where normal human meaning making activities

break down. Since the neural substrates of the phenomenal self is a chief problem for those trying to

understand and treat persons with autism. Although I regard all research in neuroscience of autism to be

in its infancy, I consider it an obligation to close a theoretical treatise of this kind by opening a discussion

about the brain and the self as it relates to perception and attention in autism. Subjectivity depends on a

coherent, continuous sense of self interacting with other selves. Self and Other are structurally coupled

and co-evolving entities insofar as the self comes to learn about itself largely through learning about the

other. In this concluding chapter, I argue that autism is a disorder grounded in perception and attention,

and that persons with autism have a hard time learning about themselves because their capacity to learn

about others is so greatly impoverished. Basing my speculations on the already well-known case of

Donna Williams and another young boy with whom I am personally familiar, I will argue that autism

appears to stem from a perceptual incoherence and failure to distinguish properly figure from ground (a

basic operation of selective attention). In addition, I argue that the disorder known as autism may stem

from an inability to control the flow of information and blend outside sensory stimulation into the robust

and flexible mental representations of self, other, and environment that define typical human experience.