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What is This?
Embodied cognitive geographies

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Abstract
Recent articles in this journal advocated a cognitive poststructuralism as progress for human geography. This research has two flaws. The first is in the epistemological differences between poststructuralism and cognitive semantics, the field from which the authors were informed on embodied cognition. The second problem arises from the contradictions a cognitive poststructuralism would have to other embodied geographies espousing non-representational theory (NRT). This article details and then resolves these two problems in several discussions and relevant examples involving cognitive semantics, embodied realism, embodiment. The product is a non-contradictory poststructural cognitive semantic perspective that provides a possible future path for NRT.

Keywords
cognitive semantics, embodied geographies, embodied realism, embodiment, poststructuralism

I Introduction
While linkages between the cognitive sciences and Geography go back several decades in the Cognitive-Behavioral/GISc literature (Downs and Stea, 1977), only recently have geographers advocated an interdisciplinary space between critical human geography and embodied cognitive science in matters of social interpretation and critique (Cresswell, 1997; Jones, 2009; Moore, 2008). Cresswell (1997) employed conceptual metaphor theory (Lakoff and Johnson, 1980) to describe the productive power, in the Foucauldian sense, of ‘metaphors of displacement’. Such metaphorical expressions formulate and justify moral geographies of society in which ‘out-of-place’ people are constructed as undesirable ‘weeds’ to be systematically plucked from society. Similarly, Moore and Jones emphasized the transformative power of an embodied account of categories for geographic thought and boundary studies, respectively. Moore took on the concept of scale as an embodied category, whereas Jones explored the role of boundaries in cognitive categorizations. I engage more thoroughly Jones’s article on boundaries in a later section. These three articles provide a starting point from which to address fundamental issues in any interdisciplinary space for both critical human geography and embodied cognitive science.

A common element in these three articles is an engagement with the work of George Lakoff and Mark Johnson, which importantly has two related goals. The first is to add to the field of cognitive semantics, i.e. the approach to cognitive linguistics grounded in an ‘embodied perspective’. The second is to realize and promote
a philosophy of science they call embodied realism (Lakoff and Johnson, 1999). Another common element of the three is an unproblematic integration of embodied cognitive science within a poststructural framework:

> By integrating poststructural insights into the role categories play in ordering modern society with research from cognitive science on the role categories play as containers in cognitive processes, this paper argues that the boundaries of categories should be understood as always inchoate – only partially formed and incomplete. (Jones, 2009: 174)

Inclusion of cognitive semantics, and by extension embodied realism, within a poststructural framework advocates what I call a cognitive poststructuralism for critical human geography. While I favor a tempered interaction between cognitive semantics and poststructuralism, there are problems with this type of union. I reveal and resolve the problems by taking an inverse approach and advocating a poststructural cognitive semantics, i.e. a cognitive semantic framework informed by poststructural conceptualizations.

Human geographers have engaged in interdisciplinary inquiries involving ‘embodiment’ as it relates to the spatiality of bodies and the affective and performative aspects of living in and making of spaces and places. These endeavors are collectively identified as embodied geographies, including the agenda of non-representational theory (NRT) (Cresswell, 1999; Dewsbury, 2003; Longhurst, 1995; Lorimer, 2005; Nash, 2000; Thien, 2005; Thrift, 1997, 2007). Embodied geographies include geographies of ‘the body’, performance, emotion, and affect as well as the study of situated knowledges produced in socialized experience, including the inscriptions, regulations, and resistant practices of subjected bodies. These inquiries are generally grounded in psychoanalytic, humanistic, feminist, Marxist, postcolonial, phenomenological, or poststructural theories (Bondi, 2005; Dewsbury, 2003; Longhurst, 1995, 2001; Lorimer, 2005; Paterson, 2009; Rodaway, 1994; Seamon, 1979; Teather, 1999; Thien, 2005; Thrift, 1997, 2007; Tuan, 1974; Valentine, 1999). This is a rather large and disparate collection of agendas, epistemological positions, and methods, yet their commonality is loosely an embodied thesis.

Within the embodied geographies literature there is an important distinction between embodied cognitive geographies (ECG) and corporeal geographies (Longhurst, 1995). Corporeal geographies theorize the dispositions of individual bodies in lived spaces with less concern for ‘cognitive’ aspects of spatial experiences and performances. NRT fits within this milieu due to its desire to theorize the more-than-representational and the ineffable aspects of life without preference for the logical, rational, or planned. For instance, in Thrift (2007), ‘embodiment’ for NRT acts to differentiate the somatic from the cognitive. This creates two tensions. First, it assumes there is a discernible boundary between the cognitive and the experiential, which contemporary cognitive science finds untenable. Second, which follows from the first, is an epistemological tension between NRT and any embodied geography espousing a cognitive science basis because the latter views cognition as integrated functional processes grounded in unconscious experiences. From an embodied cognitive perspective, the body, its social/environmental milieu, and meaning-making (semantics) are primary issues for cognition in that it is rooted in situated, felt, emotional bodily experience, not in disembodied logical calculations.

ECG theorizes the cognitive through embodiment and the social through the cognitive. The connection between this work and poststructuralism is in the production, regulation, and influence of semantic content. On the one hand, we can theorize the origins of meaning and the productive aspects, following Foucault’s sense of power, that certain meaningful statements and practices have on societies. On the other hand, we can study, and possibly overturn, the purported assumptions, inferences, and implications
of these social semantic practices and their effects at various scales, especially those involving political, economic, and cultural institutions. But the point of this article is to be weary of how these two fields relate to one another so as to meet our critical social agendas without contradiction. Ironically, it is semantics – i.e. the origins of meaning and logic – in embodied cognition that provides both the contradictions between NRT and ECG as well as their possible future directions.

I have now set the stage for the crux of this article, which is the resolution of two central problems: (1) the contradictions that arise from a cognitive poststructuralism and (2) the epistemological tensions between corporeal geographies and ECG. The resolutions to these problems provide interdisciplinary progress for embodied geographies literature. The means to uncover and resolve these two problems develops simultaneously as I sketch out the parameters for a poststructural cognitive semantics.

It should be understood that cognitive semantics and poststructuralism are not homogeneous projects. These terms represent research constellations bound by similar tenets, goals, and/or methods. It is at this broader categorical level that the connections between them are examined. I begin with a presentation of embodied realism.

II Embodied realism

The core of the first problem arises from embodied realism’s rejection of the arbitrariness of signifiers and the contingent, ahistorical, decentered subject. So, the first question to answer is ‘what is embodied realism?’ First, and foremost, it vehemently rejects objectivism. It also advocates monism, emergentism, and, to an extent, eliminativism. Monism rejects Cartesian dualism in the philosophy of mind. Monism is reviewed in further detail in the Embodiment section below. Emergentism, the philosophy of science behind quantum physics (Kim, 2002), is preferred over strong reductionism, the mode of classical physics (Chalmers, 2002). It states that humans are self-organizing systems that have emergent properties resulting from the dynamics of the system. For cognition, this means that neural networks activating in dynamical patterns form emergent properties of the mind (also see enactivism, Varela et al., 1991). Eliminativism rejects both the idea that cognition can be produced by pure calculation and the traditional cognitivist reliance upon mental states, attitudes, and beliefs to explain cognitive function and behavior (Churchland, 2002).

Embodied realism has its critics (for debate, see Krzeszowski, 2002; Lakoff and Johnson, 2002; Rakova, 2002; Sinha, 2002). It is not the holy grail of embodied philosophies of mind. There are others who have rationalized an embodied philosophy of mind (Chalmers, 2002). For instance, enactivism (Varela et al., 1991) emerged from cognitive psychology and borrows from many disparate arenas of thought, including Buddhism. Importantly embodied realism is employed here because it emerged from cognitive semantics, not because it is the only position available.

For all of the missteps of Lakoff’s and Johnson’s work over the years, which they have revised over the last few decades as cognitive science has evolved, their embodied realist position is still widely considered a constructive approach for an embodied philosophy of mind for cognitive science. This point is made convincingly by Chris Sinha’s (2002) defense of embodied realism that focused on two levied criticisms, i.e. biological determinism and the transcultural versus relative character of cognition:

[We] do not have to choose between biological determinism, on the one hand, and cultural arbitrariness and autonomy, on the other hand. The more we learn about human learning and developmental psychobiology, the more we understand that we need to think of human biology, especially human neurobiology, as selected for cultural learning (Plotkin 2002; Tomasello 1999). There is no contradiction between a naturalistic, biologically informed
approach to human cognition and the recognition of the constitutive role in it of culture. The contradiction exists only if we insist on either reducing culture to biology, or on denying that biology is relevant to culture. Neither of these two positions is necessary, and neither is supported by current research in areas as diverse as cognitive linguistics, developmental psychology, and comparative cognitive primatology. (Sinha, 2002: 272–273)

Part of the criticism of embodied realism is its antagonism toward extant traditions. According to Lakoff and Johnson (1999), cognitive science has established empirical evidence that rejects traditional western philosophies of mind and ‘self’ and therefore embodied realism is the only viable philosophy of mind, which also stands as a philosophy of science:

What we now know about the mind is radically at odds with the major classical philosophical views of what a person is. For example, there is no Cartesian dualistic person . . . There exists no Kantian radically autonomous person, with absolute freedom and a transcendent reason that correctly dictates what is and isn’t moral. The utilitarian person, for whom rationality is economic rationality – the maximization of utility – does not exist . . . The phenomenological person, who through phenomenological introspection alone can discover everything there is to know about the mind and nature of experience, is a fiction . . . There is no poststructuralist person – no completely decentered subject for whom all meaning is arbitrary, totally relative, and purely historically contingent, unconstrained by body and brain . . . There exists no Fregean person – as posed by analytic philosophy – for whom thought has been extruded from the body . . . There is no such thing as a computational person, whose mind is like computer software, able to work on any suitable computer or neural hardware . . . Finally, there is no Chomskyan person, for whom language is pure syntax, pure form insulated from and independent of all meaning, context, perception, emotion, memory, attention, action, and the dynamic nature of communication. (Lakoff and Johnson, 1999: 3–6)

Our interest here is in the rejection of the ‘poststructuralist person’. First off, Lakoff and Johnson paint with a broad brush when they speak of poststructuralism. It is a constellation of variable agendas and diverse methods (Belsey, 2002; Sarup, 1993). What should be noted is that poststructuralism’s overall critical social agenda is not at issue in their rejection. Their rejection of the poststructuralist person stems from the claims of semantic arbitrariness of language. In essence, Lakoff’s and Johnson’s retort is that ‘discourses have productive power not simply because they affect bodies but more importantly because they are derived from them’. This is an important distinction shared in the division between generative grammar and cognitive semantics, reviewed below.

The resolution to this first issue is manifold. Consequently, I tackle it in stages through several discussions pertaining to embodiment and cognitive semantics and conclude with a rearticulation of poststructuralism and cognitive semantics as a ‘poststructural cognitive semantics’. Along the way, I provide examples of such integration. There are, in fact, many parallels between the two fields that can yield theoretical and methodological profit, but only when their contradictions are resolved.

The second problem to be resolved in this article comes from the relation between NRT and embodied cognition. NRT ostensibly seeks a theory that focuses less on coding, modeling, and seeking hidden meanings and more on the ineffable aspects of space, place, and being that arise from spatial performance and experience. These aspects of life are often unknown or subjugated within dominant representational, model-oriented, and/or universalizing epistemologies. Consequently, NRT is not concerned with ‘representation and meaning, but with the performative ‘presentations’, ‘showings’, and ‘manifestations’ of everyday life’ (Thrift, 1997: 126–127). We do, however, run the risk of theorizing the unimportant, irrelevant, and meaningless, but I do not believe this is what NRT is calling for. I believe NRT calls for recognition of those aspects of being that are relevant to our lives but are heretofore neglected in our ways of thinking about life, self and meaning. These are the same issues at the
heart of cognitive science, and particularly embodied realism. The theoretical emphasis on the experiential, or ‘lived’, basis of semantic content in cognitive semantics can bridge the gap between NRT, representational (model-based and linguistically oriented) theories, and cognitive science to realize the goals of revealing the large effects of small, ‘everyday’ spaces (Lorimer, 2005). This begins by adopting the term embodiment as it is defined in cognitive semantics.

III Embodiment

An embodied philosophy is a unique perspective with shades of meaning. The legacy of embodiment in a scientific sense can be traced from Immanuel Kant’s a priori categories to Gestalt psychology, John Dewey’s functional psychology, and William James’s speculative psychology to Maurice Merleau-Ponty’s phenomenology of perception (Clark, 1999; Lakoff and Johnson, 1999). The embodiment thesis in cognitive science became more prevalent over the last 40 years from empirically based work in functional, developmental, evolutionary, and environmental psychology, modern neuroscience, and cognitive linguistics, all of which provided the ground for Lakoff’s and Johnson’s (1999) embodied realism.

Tim Rohrer (2007) has discerned nine variations of the meaning of the term ‘embodiment’ in academic literature. In its broadest meaning, it follows Gibbs’s (2006: 1) description, which states ‘[e]mbodiment in the field of cognitive science refers to understanding the role of an agent’s own body in its everyday, situated cognition’. This generic definition recognizes the corporeality of our existence vis-a-vis how we engage our physical and social milieu. However, Rohrer warns that this definition can be misleading when embodiment is used to merely refer to terms such as sensation/affect, emotion/feeling, drive/motivation, etc., devoid of their semantic importance in language and reason. The result of such usage is an implicit false dichotomy between experience and reason which presupposes a dualistic separation of mind and body. In this sense, embodiment refers to ‘bodies without heads’. This is has been observed in progress reports on embodied geographies literature (Bondi, 2005; Nash, 2000; Teather, 1999) in which the body, affect, emotion, and embodiment are often portrayed so that they implicitly reproduce the very binaries (dualism) that an embodied perspective is apt to destabilize and overturn.

Embodiment in cognitive science is monist, which can elicit accusations of biological determinism and a negation of free will. For embodied realism, these are obsolete and misguided arguments based in Cartesian dualism (Clark, 1999; Johnson, 1987, 2005; Korf, 2008; Krzeszowski, 2002; Lakoff, 1987; Lakoff and Johnson, 1999, 2002; Rakova, 2002; Sinha, 2002). A monist philosophy of mind in cognitive science defines ‘embodiment’ not merely as material being, corporeality, or as merely one element of cognition among others. It refers to the functional relationship of the entire self-organizing system of the body including the mind. Monism prioritizes the corporeality of reason. Importantly, then, the body ‘stands between this fundamental distinction between subject and object, ambiguously existing as both’ (Merleau-Ponty, 1994: 408). This description, paraphrasing Mark Johnson (1987), puts ‘the mind in the body and the body in the mind’. Speaking of one infers the other as a functional unit. Accordingly, ‘embodiment’ refers to the disposition of the mind as embodied. In other words, the embodiment of our minds provides the logic of our reason and the meaning and structure of our linguistic practices.

Cognitive science subsumes most neurological activity associated with perception, motivation, emotion, movement, language, and reason within the term ‘cognitive’ and then demonstrates how these, mostly unconscious, cognitive activities work. Cognitive semantics demonstrates how the encoding of these activities provides the bases for all semantic content. In this sense of the term, ‘cognition’ is over 90% unconscious and consists
of differential activation at multiple, integrated levels of processing (Dunlosky and Metcalfe, 2009; Gibbs, 2006; Lakoff and Johnson, 1999; Plumert and Spencer, 2007; Van Gelder, 1995). It is functional, adaptive, and develops sequentially through our inherited evolutionary stages as we grow and learn (Edelman, 1987). It is also necessarily emotional in its experiences, performances, and reasoning via dopaminergic (positive somatic effects) and norepinephrinergic (negative somatic effects) systems (Damasio, 1994, 1999).

For embodied cognition to be functional, it must organize experience into meaningful structures of information. Perception encodes intrinsic structures which form our somatocentric logics of the body and egocentric logics of body-object and body-in-space relations, as well as extrinsic structures which form allocentric, also called geocentric, logics of the dynamics of one’s environment (Friedman, 2005; Klatzky, 1998; Tversky, 2008). This generates a new and important understanding of embodiment from cognitive semantics: the form of experience is the meaning of experience.

Methodologically, then, an embodied realist project would trace the embodied origins of semantically coherent (meaningful) performances, including linguistic practices due to its cognitive linguistics origins. This perspective certainly falls within the purview of embodied geographies. NRT seeks to reveal those aspects of life that are spontaneously generative, at least partly unconscious, and based in a sense of ‘embodiment’ devoid of contemplation and linguistic reasoning. These interests take on a new importance when understood from a cognitive semantic perspective. Thrift (2007) briefly reviews the work of Lakoff and Johnson and in it states that such work dictates that cognition is mostly unconscious and embodied, but he does not present the links provided by Lakoff and Johnson between the lived and the semantic. This is a key point of cognitive semantics and must be thoroughly reasoned within NRT if it is to profit from embodied cognitive science.

Even within embodied cognitive science literature there exist alternate uses of the term ‘embodiment’. An example can be found in Sinha’s and Lopez’s (2000) review of Lakoff’s and Johnson’s work. In it they are critical of claims of ‘universal’ cognitive processing as it relates to the origins of certain kinesthetic-imagistic schemas. In their review, they define embodiment as mere corporeal experience and suggest that this type of ‘embodiment’ is only one categorical aspect of spatial semantics – the manner in which spatial cognition structures and lends semantic content to language (Talmy, 1988, 2006). As evidence, they interrogate Lakoff’s and Johnson’s suggested bodily origins of some kinesthetic-imagistic schemas. An example is the ‘container schema’ which Lakoff and Johnson have stated comes from the logic encoded in experiencing human digestion, i.e. we put food into our bodies like a container. Thus, ostensibly, bodies are the origin of the container schema. However, Lakoff’s (1987) and Johnson’s (1987) (Lakoff and Johnson, 1980, 1999) inclusion of allocentric, egocentric, and corporeal (somatic) origins of schemas precludes this narrow reading of their use of the term ‘embodiment’.

Moreover, as argued recently by Johnson (2005), Lakoff’s and Johnson’s explanation of universal origins of the container schema were admittedly originally weak since it is now generally accepted that schemas have multiple origins and inflate their meanings as we cognitively develop due to the radial nature of categories, which I explain below (Hampe, 2005). This means that the container schema as it is used later in life could be based on other experiential structures so that the original associations between ‘container logic’ and the body as a vessel could be obscured. However, that does not negate the fact that the container schema is universally found, i.e. transcultural, and that all knowledge is based on schematized models of experience. That is to say, all idealized cognitive models can have multiple origins and they can all take on culturally specific meanings (Hampe,
2005; Johnson, 2005; Levinson and Wilkins, 2006). In sum, while it is true, as Sinha and Lopez state, that cognitive linguists fashion typologies for academic analysis that discern ‘bodily’ aspects from other spatial semantic categories, in which the somatic elements are referred to as ‘embodied’ (Sinha and Lopez, 2000), that does not mean that the ‘embodied mind thesis’ as Lakoff and Johnson described it equates only to the sensing one’s body parts. Embodiment has many shades of meaning.

All experience is embodied and all knowledge is based on the encoding of schematized experiential structures. Depending on the type and level of organization, they have many names. Lakoff (1987) refers to them all as idealized cognitive models (ICM), which include terms such as categories, structures, prototypes, schemas, scripts, metaphors, construals, and frames. They have several aspects to them. Their semantic content emerges in the perspectival forms they take which are determined by the idiosyncratic activation of one’s perceptual capacities within the varying conditions of one’s physical and social environments. The selective activation and integration of these schematized structures and their many entailments (aspects) provide the requisite semantic content to complete meaningful thoughts from the most basic and unconscious to the most complex and coherent. The implications of this for NRT are that without the encoding of mundane, ‘everyday’, mostly unconscious experiences (non-representational) there is no higher-level reasoning or language (representational) because the logic and semantic content of both is afforded by the selective activation of encoded non-linguistic experiences.

**IV Embodied cognitive geographies**

In this section I present an example of the epistemological parallels between poststructural geographies, cognitive science, and cognitive-behavioral geographies. This example demonstrates the commonalities between seemingly disparate fields. The field principally involved in a direct exchange over the last 20 years between Geography and embodied cognitive science is Cognitive-Behavioral Geography (CBG) and Geographic Information Science (GISc) literature. The two collaborate on issues of spatial cognition, spatial behavior, spatial information processing, and issues in human-computer interaction to answer ontological questions about the nature of geographical entities (objects, fields, and their boundaries) and epistemological and methodological questions on the acquisition, use, and communication of spatial knowledge (Burrough, 1996; Couclelis, 1992; Egenhofer and Mark, 1995; Freksa, 2000; Freksa et al., 1998; Galton, 1999, 2003; Golledge and Stimson, 1997; Lloyd, 1997; Mark and Frank, 1991; Mark et al., 1999; Peuquet, 2002; Smith and Mark, 2001; Smith and Varzi, 2000).

A central issue in cognitive science is spatial cognition, which requires a sense of what it is, what it does, and how it works. Spatial cognition is important because it provides a necessary integrative function for several cognitive modalities. Spatiality is thus more than a mere fact of one’s embodiment, it is a necessary element of reasoning, i.e. ‘space is considered both as an object of cognition and a means of cognition’ (Freksa et al., 2000: V, original emphasis). Importantly, spatial cognition manifests socially in the spatial content and structure of language, which I describe below (Fabrikant and Buttenfield, 2001; Gattis, 2001; Levinson and Wilkins, 2006; Talmy, 2006; Tversky, 2008). On this point, an interesting parallel can be seen between Jones’s (2009) article and CBG/GISc literature regarding spatial cognition and the ontological ambiguity of geographic entities. The philosophical underpinnings of these CBG/GISc discussions share commonalities with epistemological relativistic claims of the arbitrariness of language and the productive power of linguistic constructions found in poststructuralism, though, as Jones observed, they do so from completely
different perspectives. An example comes from Smith and Varzi’s (2000) dyad of *bona fide* versus *fiat boundaries* that similarly theorizes Jones’s ‘inchoate nature’ of categorical boundaries:

There is a basic distinction, in the realm of spatial boundaries, between *bona fide* boundaries on the one hand, and *fiat boundaries* on the other. The former are just the physical boundaries of old. The latter are exemplified especially by boundaries induced through human demarcation, for example, in the geographic domain. (Smith and Varzi, 2000: 401)

They go on to demonstrate that not only are socially constructed boundaries fuzzy, which destabilizes such boundaries and the objects they constitute, but also physical boundaries/objects are likewise fuzzy. These physical entities are only perceptually clear due to the scalar limitations of our perceptual capacities, i.e. parameters of our embodiment. At more refined scales beyond our perceptual capacities, physical surfaces are not stable or solid at all. For instance, at increasingly microscopic scales one endlessly chases a stable, solid surface or boundary to objects only to find space, e.g. space between and within molecules, atoms, subatomic particles, and so on. Thus, both social and physical boundaries are not only inchoate, but illusory. We experience the cumulative effects of forces within these spaces that build from the subatomic to condensed matter to the galactic structure of the universe. It is at the level of condensed matter that our perceptual capabilities function and register experience. It is therefore assumed due to parameters of our embodied experiences that the world is filled with stable, bounded objects (Varzi, 2001).

The parallels in poststructuralism and CBG/GISc in this example come from a divergent emphasis on cognition. The latter focuses on spatial cognition while the former is more interested in linguistic cognition, which leads us to cognitive semantics.

**V Cognitive semantics**

In general, *cognitive linguistics* is the cognitive science of language. This broad approach contains quite disparate perspectives. A major division in the field began in the 1970s separating *Generative Grammar* from what became *cognitive semantics* (also seen as the capitalized ‘Cognitive Linguistics’) (Cienki, 2007; Harris, 1993). As Geeraerts and Cuyckens (2007: 5) explain, both are ‘cognitive’ in that they theorize ‘the crucial role of intermediate informational structures in our encounters with the world’. *Generative Grammar*, spearheaded by Noam Chomsky in the 1950s, is concerned with cognition only in so far as it explains language while the latter engages language so as to understand cognition. ‘Whereas Generative Grammar is interested in knowledge of the language, Cognitive Linguistics is so to speak interested in knowledge through the language’ (Geeraerts and Cuyckens, 2007: 6, original emphasis).

Another distinction between *Generative Grammar* and cognitive semantics is that the former takes a ‘dictionary view of language’. It treats syntax as an independent and innate linguistic function and theorizes language formally as the result of syntactical rules. Language is understood as a set of symbols strung together by recursive procedures that govern the orderly production of those sets into higher level strings of linguistic units. Cognitive semantics on the other hand takes an ‘encyclopedic view of language’. The difference between a dictionary and encyclopedic view of language is seen in David Lee’s introduction in *Cognitive Linguistics* (2001):

In the generative model the structure of linguistic expressions is deemed to be determined by a formal rule system that is largely independent of meaning.
By contrast cognitivists argue that linguistic structure is a direct reflex of cognition in the sense that a particular linguistic expression is associated with a particular way of conceptualizing a given situation. This leads to a quite different view of the relationship between language and cognition in general. (Lee, 2001: 1)

Cognitive semantics ‘is not a single theory of language, but rather a cluster of broadly compatible approaches’ (Geeraerts and Cuyckens, 2007: 3), including the Neural Theory of Language (Lakoff, 1987), Cognitive Grammar (Langacker, 2008), Cognitive Semantics (Talmy, 2000), Construction Grammar (Goldberg, 1995) that originated from Charles Fillmore’s Semantic Frames Theory (Fillmore, 1976), and Embodied Construction Grammar (Bergen et al., 2004). Talmy’s Cognitive Semantics and Embodied Cognitive Grammar try to bridge the gaps within cognitive linguistics in that they seek to bring methodological (computational) aspects of Generative Grammar to cognitive semantic theories to create a unified, semantically oriented theory of cognitive linguistics. The differences between the various theories are mostly minor and likely resolvable in the future (Cienki, 2007; Dirven, 2005).

My interest is at the level in which the varying approaches cluster as a field and provide an array of research applications. At this level, cognitive semantics has specific tenets. It accepts the primacy of semantics in linguistic analysis, the perspectival nature of linguistic meaning, and the encyclopedic nature of linguistic meaning. The first stance states that categorization is the primary meaning-making process of cognition and language. Thus, ‘if the primary function of language is categorization, then meaning must be the primary linguistic phenomenon’ (Geeraerts and Cuyckens, 2007: 5). This is a break from Generative Grammar. The second stance states that ‘the categorization function of the language imposes a structure on the world rather than just mirroring objective reality’ (p. 5). This is an especially meaningful position for poststructuralism. The third stance states that ‘if language is a system for the categorization of the world, there is no need to postulate a systemic or structural level of linguistic meaning that is different from the level where world knowledge is associated with linguistic forms’ (p. 5). In other words, because ‘communication is based on the same conceptual system that we use in thinking and acting, language is an important source of evidence for what that system is like’ (Lakoff and Johnson, 1980: 4). This is so because ‘language use involves the activation of perceptual and motor mechanisms’ (Bergen et al., 2004: 1). However, ‘linguistic units themselves need only refer to schematic representations of these mechanisms’ (p. 1). This is the root of the rejection of the arbitrariness of language. These basic tenets of cognitive semantics follow from empirically based research from across the cognitive sciences, which continue to refine some of its original concepts.

These tenets also form the basis of the cognitive approach to culture. Talmy’s Cognitive Semantics (2000) divides linguistics into formal (syntactic), psychological (perceptual), and conceptual (semantic) elements. He then theorizes cognition as containing overlapping and complementary cultural and linguistic cognitive systems. Culture, then, has its own linguistic and non-linguistic elements; the relations between them are taken up below. The cognitive approach to culture in contemporary cognitive science must not be confused with overly deterministic cognitive theories of the past. What should be understood is that cognitive semantics provides theorization for the manner in which culture manifests in and through the embodied mind, which necessarily includes performance, experience, and meaning. A poststructural cognitive semantics, then, would be interested in conceptual and perceptual aspects of meaningful performances as they pertain to culture. Here, poststructural accounts of situated knowledge, performance, and discourse can aid in the development of cognitive semantics as a more socially
relevant theory. However, regarding language, this would require theoretical alteration of poststructural accounts of language based cognitive semantics’ encyclopedic view of language.

VI Self: between words and things

Cognitive semantics agrees that signifiers have no meaning in and of themselves as poststructuralism would claim. It also agrees that words do not refer to things in the world. However, cognitive semantics states that linguistic meaning is derived through reference to existing, meaningful experiential structures that we take to be ‘the world’. There is, of course, a material universe of which we are all a part, but we cannot know that materiality as it is. We simply know our perspectival, intermediate mental structures as the world and assume it is as we know it to be. We then make reference to this ‘world’ through external metaphors, for instance, ‘that tree over there’, when, in fact, we are always referring to mental structures that emerge through brain activity. These structures are embodied. They are what we take to be the ‘things in the world’ while they are also necessarily mental phenomena. Thus, paraphrasing Merleau-Ponty’s quote from above, between things and words is the embodied mind, existing ambiguously as both.

But, if accepted, poststructural analysis must also accept that society, language and meaning are not external to the mind. As described in the previous paragraph, we describe the social within spatial metaphors of externality – in terms of the Other and the outside. This necessarily equates the mental and the self to the internal. The employed image schema in this conceptualization is based in our perspectival existence and thus seems logical and it undergirds Cartesian dualism. The rejection of dualism is important to a poststructural cognitive semantics because it abandons the basis for the disembodied dictionary view of language. In spite of its rejection of Cartesian dualism and emphasis on the body in its goal to destabilize the presumed naturalness of the relation between words and things, poststructuralism still theorizes language within the dictionary (disembodied) view indicative of formal approaches to language. It lacks an understanding of the embodied mind that holds the true connections between words and things. It is true that language is a process through which we can use arbitrary perceptual units (symbols and sounds) to fashion novel conceptual integrations which formulate new cognitive entities, referred to in poststructural lexicon as ‘discursive objects’, but the meaning of those objects, including the logic upon which one uses language to formulate new semantically coherent objects, is derived from the embodiment of our minds. Thus, linguistic practices do not consist of an arbitrary play of empty signifiers but instead consists of the active construction of ‘cognitively real’ entities through conceptual integration. Class, race, and gender in this sense are ‘cognitively real’ but not ‘transcendentally real’, which is at the heart of endless debates between realists and relativists. Embodied realism falls in-between this debate and does so with empirical evidence from decades of cognitive science. In short, language involves conceptual integrations of ‘brute facts’ into wholly contrived cognitive (and discursive) entities. The brute facticity of class relations is real enough, to be sure, but ‘class’ does not exist outside our mental constructions of it as a cognitively real entity that can be acted on to produce the ‘brute facticity’ experienced through divisions of labor, inequalities in social relations, and the myriad aspects of life afforded to those with more or less capital.

Lakoff’s and Johnson’s problem with poststructuralism, then, is that one cannot construct ‘discursive objects’ without brute facticity which is accomplished through selective activation of myriad aspects of experience. This ‘in-between view’ is the hallmark of embodied realism, which preserves the critical, deconstructive, and emancipatory elements of a poststructural agenda while it remains based in empirical science. Therefore, a poststructural cognitive semantics also conceptualizes language as open
to contestation, politicization, ‘deconstruction’, and resistance but does so through a scientific approach to cognition. While Foucault and others would reject a ‘scientific view’ of the mind, self, and meaning on the basis that it seeks to make and control ‘truth’, that point is moot here since an embodied mind thesis negates the possibility for the mind, and therefore any science of it, to ever know ‘reality as it is’ and is thus forever limited to knowledge that is situated, perspectival, emotional, and felt. In this sense, it rejects ‘Truth’ in favor of ‘generally accepted truths about knowledge and being that are open to later alteration’.

So, as it turns out, the dictionary view of language was the core issue in our first problem to be resolved. While a cognitive poststructuralism left that issue unresolved, poststructural cognitive semantics takes an encyclopedic view of language which centralizes non-linguistic cognition over linguistic cognition and prioritizes semantics as the primary cognitive function. What then can we say about the self if it is not decentered? The decentered subject must be rejected in a poststructural cognitive semantics in favor of an ontologically and epistemologically ambiguous ‘embodied subject’. The embodied subject is mind and body, subject and object, of the world and in the world, and always experientially grounded. Its knowledge of self is neither objective nor complete. This is not as restricted as it might first seem since these capacities and the myriad conceptual integrations that can be derived from them are seemingly innumerable. Metaphorically, then, we can say that the embodied self is ‘linguistically peripheral’ and ‘experientially centered’ in which the two are in a constant state of internal and external alteration and affirmation.

VII Some basic concepts in cognitive semantics

There are several important conceptualizations in cognitive semantics (Cienki, 2007), perhaps the most basic and important is categorization. Categorizations are scaled neurological organizations. An important concept in categorization is the domain. A ‘domain’ can alternatively refer to a perceptual modality (vision, hearing, touch, etc.), sets of neural associations pertaining to a particular categorization, or the semantic content entailed within those associations (Langacker, 2008). Categorizations form from the multimodal encoding of conventional patterns of experience into experiential structures. Categorizations are meaningful due to the schematic form of our encoded experiential structures. Non-linguistic form refers to the feeling, orientation, and contour of our bodily spatial experiences (Hampe, 2005; Johnson, 2005). Non-linguistic meaning is derived from these experiential forms. This means that meaning is fundamentally figural, not literal.

Linguistic form, on the other hand, refers to the patterns observed in syntax, morphology, or phonology, while linguistic meaning refers to semantics, pragmatics, and discursive structures. Linguistic meaning comes from the association of linguistic perceptions (multimodal manifestations of semiotic symbols, i.e. spoken, signed, written, iconic) to non-linguistic structures. This means that multiscalar patterns of bodily spatial information encoded in innumerable domains of experience can be selectively activated in online or offline activities as functional information in reasoning tasks (Langacker, 2008). Logic is a metacognitive evaluation of the goodness-of-fit of the conceptual integration of various schematized forms of experience. In cognitive semantics, linguistic categorization is structured by non-linguistic categorization so that linguistic constructions can inform cognitive function, i.e. we can learn and/or be creative linguistically (Dirven, 2005). The link between non-linguistic and linguistic categorization is studied through grammatical expressions. Grammar, then, in cognitive semantics is conceptually and methodologically important because it is a process of scaled, complementary patterns of...
form/meaning construction (Goldberg, 2005; Langacker, 2008). The methodological focus of cognitive semantics is in the interrogation of grammatical expressions to reveal the non-linguistic categorizations that grant linguistic forms meaning:

the human capacity for language understanding relies on activating internal motor and perceptual simulations on the basis of linguistic input. These simulations can serve any of the purposes that linguistic information is conventionally put to – their content can be stored, thereby updating the internal knowledge base; their inferences can be propagated such that the understander can draw conclusions needed in discourse; or the actions they include can be performed in cases where the language involves instructions or requests. (Bergen et al., 2004: 5)

A geographic example of the form-meaning link comes from Tobler’s First Law of Geography. A common non-linguistic experience is ‘close items are more related than distant items’. Here, the form ‘close’ means ‘related’. Linguistically, semantic relatedness reciprocally infers closeness. Another example comes from the metacognitive ability of attention (Van der Heijden, 1998). Experiential structures neurologically prioritize figural objects over ground. Embodied cognition dictates that we reason through figurative thinking. This figural primacy takes the form ‘presence’ and its meaning equates to ‘known’. Its opposite logic is that ground is ‘absence’ and its meaning is ‘unknown’. In other words, that which is present to our awareness is that which is known/able and that which is absent is unknown/able. Jacques Derrida (1976) recognized the dependence of this logic as the metaphorical basis of many western philosophical traditions in his critique of the ‘metaphysics of presence’.

Prototyping (Rosch, 1975, 1978) is another important concept of cognitive semantics. It is a basic process of entity formation and thus a central cognitive activity. Prototypes or exemplars are simple yet functional and highly adaptable structures (categories) of distinct sensory-motor experiences and constitute basic-level taxonomies of entities, i.e. ‘natural categories’. Taxa are thus constituted by ‘best examples’ of a contextualized experience. Prototypicality describes the level at which experience is functional and therefore meaningful in a variety of cases. The distinct form of a prototypical structure gives it a distinct meaning. The schematic properties of prototypes are adaptable to various contexts of reasoning and language, so they manifest ubiquitously as basic idealized cognitive models (Cienki, 2007; Lakoff, 1987). Selective activation of entailments of basic-level categories provides the organizational logic for producing higher-level categorizations, which can be super- or subordinate levels. Maximal meaningfulness grades from the basic level to subordinate and superordinate levels because they tend to carry either too much (contextually specific) or not enough (formalized and general) detail, respectively, to be useful in multiple contexts.

Due to this natural semantic vagueness of domains, linguistic units associated with them also semantic gradation (Lewandowska-Tomaszczyk, 2007). Semantic gradation was the basis for rejecting the classical theory of categories as a complete and accurate portrayal of cognitive categorizations (Johnson, 1987; Lakoff, 1987). The classical theory assumes that categories follow from the natural order of things in the world which have precise, determinate boundaries between classes. Membership in the classical theory is based on necessary and sufficient conditions of an entity to ‘fit into’ a particular category. However, research has demonstrated that natural classifications do not follow this view (Rosch, 1975, 1978). While many bona fide objects have perceptually distinct boundaries, and therefore make conceptually bounded classes, the categories humans utilize on a daily basis are often fiat. This point was made in Jones’s (2009) and Moore’s (2008) articles.

Conceptual integration is another important concept as it theorizes the basic processes
underlying reasoning and grammatical construction (Coulson and van Petten, 2002; Grady, 2000). The theory of conceptual integration came from Lakoff’s and Johnson’s *Conceptual Metaphor Theory* (1980), Gilles Fauconnier’s *Mental Space Theory* (1985), and Fauconnier’s and Mark Turner’s *Conceptual Blending Theory* (2002). Mental Space Theory holds that reasoning is a mental process involving visualizing perceptual scenarios in *mental spaces* and then making inferences from those spaces (Fauconnier, 1985). Schematically, this is a process involving selective association of a *source domain* to a *target domain*. The objective is to ‘semantically complete’ the target domain. As one reasons, mental spaces literally become present to one’s awareness as entailments of these domains are activated. The forms of experiential structures make some combinations more meaningful than others. Linguistically, grammatical (semantic/syntactic) choices are made by the meaningful alignment of informational structures within source and target domains. The criterion by which something is deemed either logical or illogical is based on the experiential logic from which it is derived. Conceptual integration is the neurological foundation of ‘metaphorical thinking’ (Lakoff and Johnson, 1980). By ‘metaphor’, Lakoff and Johnson generally refer to all conceptual integration types including metonymy, analogy, and metaphor. ‘The essence of metaphor is understanding and experiencing one kind of thing in terms of another’ (Lakoff and Johnson, 1980: 5, original emphasis). Repeated co-activation of source entailments and the target domain leads a normalized association that in popular metaphorical inferences may seem natural and go unquestioned. These metaphorical inferences shape the way we think and act and also often justify political ideologies (Lakoff, 2002, 2008). This point was made in Cresswell’s (1997) article.

[Cognitive semantics] suggests, for example, that communication will be successful to the extent that participants succeed in aligning their construals – a process that may involve ongoing negotiation as the discourse unfolds. It also suggests that misunderstandings and arguments are likely to arise in situations where there are significant discrepancies in this regard. In other words, the process of construal should be a major focus of discourse analysis. (Lee, 2001: 170)

*Construals* are simply the schematized structures, described above, that we use to make inferences and reason both linguistically and non-linguistically. A classification scheme is a simplified example. Classification schemes have basic semantic units, or category classes. Prototypes form the basic-level classes, for instance a book. Prototypal elements are used to differentiate and associate variations of the prototype into sub- and superordinate classes, as in genres and subject content. Inclusion of an item (book) into a class is based on the goodness-of-fit between the item’s traits (content) and those of the prototype of each class (genre and subject classification standards). The items within a class can semantically grade from the prototype into other classes (books can fit into several genres or subjects). Progressively higher-level classifications bind subordinate ones together by common entailments. This topological thought process is an example of a classical means of ordering the categories of our embodied experiences. The results of such reasoning are emergent entities that have their own content and structure that is often schematically represented through structural metaphors.

An example of metaphorical structuring is seen in the history of scientific discoveries in which new theoretical perspectives, as in the differences between classical and modern physics (Bohm and Peat, 1987; Hallyn, 2000), are founded on alternative structuring metaphors. Something similar was observed by Michel Foucault (1971, 1972) in his concept of the *episteme*. Foucault’s general scheme from basic semantic units (statements) to socially prevalent ‘archives’ of semantically relevant construals to
broadly unifying modes of thinking (episteme) parallels the vision set forth in cognitive semantics on the social character of linguistic practice and semantic formation. The inclusion of a new metaphor generates structural heterogeneity that requires reorganization (and normalization) producing a new interpretive framework. If one was to salvage Kuhn’s famous ‘paradigm shifts’, this would be the avenue in which to do so. Foucault’s epistemic shifts, which he called ‘discontinuities’, were traced to uncover the series of the Divine Order, the tableaux of natural philosophy, and the network of bio-political societies.

These higher-scaled discursive formations are referred to as frames in cognitive semantics. They are highly inclusive grammatical constructions that provide adaptable criteria for interpreting any entities incorporated within them. The success of frames is based on the congruity of their conceptual integrations. An important device for building frames and making them semantically coherent is the schema. Kinesthetic-imagistic schemas are gestalts in that they encode bodily spatial logics that form from recurrent bodily movements in space, ways of manipulating objects, and manners in which objects relate to each other and behave in space:

Image schemas capture the structural contours of sensory-motor experience from multiple modalities. As gestalts, image schemas are both internally structured, i.e., made up of very few parts, and highly flexible. This flexibility becomes manifest in the numerous transformations they undergo in various experiential contexts, all of which are closely related to perceptual (gestalt) principles. (Hampe, 2005, original emphasis)

Spatial cognition is special (Tversky, 2008) because cognition is functional. Functional cognition relies on bodily spatial experience and, since the form of experience is the meaning of experience, subjective spatiality is essential to meaning. Leonard Talmy (1988, 2006) described this through force dynamic schemas and demonstrated how space structures language. Force dynamic schemas represent those constructions that convey the logics of cause-effect and motion. Spatial categorizations structure language use in many ways (Talmy, 2006). The use of spatial categorizations differs culturally (Levinson and Wilkins, 2006) due to the normalization of particular spatial references within a linguistic community.

An example of how image schemas work and how to ‘deconstruct’ them is love is a journey (Lakoff and Johnson, 1980). Activation of the source domain ‘journey’ in relation to the target domain ‘love’ structures inferences that are necessary for the analogy to be meaningful. For love to be a journey it must be both temporal and spatial. It has a beginning, middle, and end. The basic schematic structure employed in the mental space ‘love is a journey’ is the source-path-destination schema. The content of the journey comes from subsequent elaboration that enacts informational structures associated with the ‘journey’ domain. Through elaboration, both the source and target domains inform each other on subsequent choices. ‘Love’ must be understood as a relationship because the subsequent ‘journey’ analogy is visualized as a mutual partnership going to a distant location. Entailments of the ‘relationship’ domain grade into those of ‘love’, which in turn structure inferences from the ‘journey’ domain. The form of invoked experiences literally is the meaning of the linguistic unit ‘love’. ‘Love’ is thus semantically completed by the relationship and journey domains so that, in this case, love can be a ‘smooth ride’, a ‘winding road’, an ‘uphill climb’, a ‘bumpy ride’, ‘never got going’, ‘took separate paths’, or ‘got lost along the way’.

Since Lakoff’s (1987) and Johnson’s (1987) original lists of image schemas, there are now several overlapping and alternative inventories. This has led to speculation that there are either few indivisible schemas that all other higher-level constructions are based on or that we continually produce new schemas, scripts, and frames as we experience new conditions of our embodiment (internet discourses and virtual worlds, for instance) (Hampe, 2005).
VIII Classical theory of categories

At this point, I want to return to a discussion of Jones’s article and use that as a springboard to a poststructuralism cognitive semantics for embodied cognitive geographies. The issue is simply a matter of clarity on Jones’s depiction of categories from the embodied cognitive science perspective. Jones claims that Lakoff and Johnson ‘argue that, cognitively, humans perceive categories to be containers. Consequently, we imagine categories to have a definite inside, boundary, and an outside, like a container’ (Jones, 2009: 179). What Lakoff (1987) and Johnson (1987) (Lakoff and Johnson, 1999) describe is the occurrence of the ‘container schema’ in natural language. They then used this discussion to reject the classical theory of categories that relies upon the embodied logic of the container schema as its justification.

Important in this discussion is the concept of polysemy, which grounds aspects of both poststructuralism and cognitive semantics. While this issue was a problem for traditional linguistics, it stood as evidence of the arbitrariness of the signifier in that they metaphorically ‘float’ from one signified to another. This grounded the dictionary view of language in structural and poststructural linguistics. Polysemy was then used politically by poststructuralists to destabilize the links between words and things and question the certainty of foundational categories in normative thinking. In cognitive semantics, polysemy is based on semantic gradation. Within embodied realism’s rejection of the arbitrariness of language, semantic content of linguistic units are learned, the meanings of those units are no longer arbitrary even though they are polysemic. This must be so in cognitive semantics because it is through the association of linguistic units to semantic domains that grammatical constructions are possible. Moreover, the ability to learn novel meanings of words is based on this conceptualization of polysemy. It was in the discovery of how polysemy works that the embodied theory of categories came into being. Radial categories and basic-level categories contradicted the classical theory of categories, including its underpinning assumptions of objectivity and the disembodied mind. The critique of the classical theory by Lakoff (1987) and Johnson (1987) (Lakoff and Johnson, 1980, 1999) demonstrated – and to an extent deconstructed – these assumptions by revealing that they relied on the unquestioned assumptions that follow from an embodied metaphor of containment. The container schema in the classical theory therefore represents the employment of a particular schematized construal as a normalized type of topological thought. In fact, it employs two image schemas, the object schema (members) for discrete entities and the container schema (sets) as an associative space that in its form yields the embodied logic: those of the same space are related. The boundary creates the criterion of distinction necessary to form a new multitudinous object (a set from individual objects). The logic of being bounded in a common space figuratively means ‘related in character’. The semantic content of the set is then acquired through the shared character of its members (object) and vice versa. This spatial form/meaning structure logically grounds Set Theory which is the basis of virtually all mathematics (Lakoff and Nuñez, 2000; Tiles, 1989).

The classical theory is an insufficient theory of explanation in that it is objectivist and thus disembodied. It therefore has no need to theorize cognitive processes of categorization or even question its own categories (Johnson, 1987). It is the rejection of objectivism and disembodiment of mind and the mediated link between world and mind that stands as the basis for Jones’s claim that embodied cognitive science destabilizes the assumed bona fide status of categories and the boundaries that define them. However, without the above explanation, Jones’s description reads as though Lakoff and Johnson were saying that categories are containers, which is not the whole story. Within Jones’s depiction of categories as containers he describes the bounding processes
by which categories come into being as a fiat process. I will take this concept further now.

IX Boundary schema

As detailed above, the fundamental process of cognition is categorization. However, categorization first forms from perceptual differentiation. Whether bona fide or fiat, distinct or diffuse, the schematic form of differentiation is a boundary. A review of the many inventories of kinesthetic-imagistic schemas in cognitive semantics (Hampe, 2005) finds that all schemas share four common elements: a boundary, figure, ground, and relation. The first produces the other three. The fourth is understood as a product of the conditions of the formation of the first three, i.e. a relation is the semantic content applied to a boundary. I refer to this conceptual process as boundarying. In one process, boundarying schematically represents four elements simultaneously. Each provides general ordering principles utilizable in subsequent multiscaled conceptual integrations and analyzable through their manifestations in grammatical constructions. One important element of a construal, reviewed above, is foregrounding. Foregrounding is central to reasoning as a metacognitive function associated with attention (Van der Heijden, 1998). The foregrounding of any one of the four elements provides the basis for fashioning kinesthetic-imagistic schemas.

Furthermore, boundarying has four rudimentary types. Experiential boundaryings produce bona fide perceptual distinctions. Fiat boundaryings involve selective activation of schematized entailments that become associated with other domains. The result is the emergence of new knowledge. Schematically, boundarying takes the spatial form of a boundary schema. The meaning of this basic form is, as Jones put it, paradoxical in that it evokes the logics of distinction and combination simultaneously. The context in which it is employed provides the criteria for either distinction or combination, i.e. the type of relation the boundary creates. The other two types of boundarying are negative and positive. Negative boundaryings create tensile relations of difference and independence necessary for the emergence of meaningful experiential structures. Positive boundaryings create compressive relations of similarity or dependence.

As seen in Jones’s investigation of categories and their boundaries for border studies, it is not difficult to see the ubiquity and semantic importance of grammatical constructions involving the boundary schema in the formulation of political fiat objects, such as territorial states, sovereignty, and citizenship. An example of a critique of the boundary schema grounding legal inequalities is found in Giorgio Agamben’s conceptualization of homo sacer (Agamben, 1995). Relying on Set Theory, Agamben defined the status of sovereigns and homo sacer (punishable subjects) as exceptional. ‘The exception is what cannot be included in the whole of which it is a member and cannot be a member of the whole of which it is always already included’ (Agamben, 1995: 25). The exception (sovereigns and homo sacer) is a boundary entity. The result is a fiat object with an ambiguous legal status as seen in the refugee/IDP.

X Poststructural cognitive semantics

In this final section I summate our progress in resolving the two problems of a cognitive poststructuralism and then complete the discussion by sketching out the parameters for a poststructural cognitive semantics within which I provide more examples of productive linkages between cognitive semantics and poststructuralism. Of particular interest to me is poststructuralism’s biopolitical perspective that provides a critical body-oriented social theoretic for cognitive semantics.

The resolutions to the first problem came in several discussions within embodied realism and cognitive semantics. It was demonstrated that
poststructural accounts of linguistic cognition were based on a dictionary view of language. The arbitrariness of language and the decentered subject that followed from this view were deemed misguided from the perspective of embodied cognition. This made a cognitive poststructuralism untenable. The first problem also created an internal tension in the embodied geographies literature in which a cognitive poststructuralism would contradict the goals of NRT. However, if embodied geographies adopts the embodied subject over the decentered subject, the encyclopedic view over the dictionary view of language, and the semantic primacy of cognition, then an alternative ‘poststructural cognitive semantic perspective’ emerges. This perspective accepts that affect, performance, motivation, movement, emotion, and perception are inseparable aspects of functional cognition that takes as its primary goal the production of meaning-making in the form of schematized experiential structures. This perspective provides a non-contradictory link between poststructuralism and embodied cognition as well as a new and profitable trajectory for NRT and embodied geographies. Those that embark on this course would be espousing an embodied cognitive geography.

Methodologically, this type of work would merge existing embodied geographies literature and the goals of NRT within a strong monist, eliminativist, and emergentist view on the mind. This work would trace the links between non-linguistic and linguistic cognition by analyzing grammatical constructions as they work to socially construe meaning and form social practice. A poststructural cognitive semantics would therefore seek social interpretation through subjects’ linguistic and non-linguistic practices. The most relevant level of analysis for social interpretation is the frame. Frames are higher-level constructions of conceptual integrations involving the selective use of basic-level categories, metaphors, and kinesthetic-imagistic schemas. Coherence in frames is based on the embodied logic of their schematized forms. Examples include resolving disputes, forming agreeable comprehensive peace agreements, fashioning or deconstructing political rhetoric, or improving pedagogic communication (Dirven et al., 2007a, 2007b).

Finally, I wish to explore an existing poststructural perspective that could be profitably integrated with embodied realism. That perspective is biopolitics (Agamben, 1995; Foucault, 1977, 1980; Marks, 2006; Minca, 2005, 2006, 2007; Patton, 2007). An embodied realist biopolitics would seek synthetic accounts of the cognitive and the social to understand meaning-making as place-based cognition. Analyses of this type would stress the functional relation between cognitive dynamics and the social milieu in which it takes place. Biopolitics emphasizes the milieu and its productive power, while embodied realism emphasizes the dynamic and its semantic and performative role. Biopolitics is a poststructural critique of the totalizing, micro-regulative character of modern governance.

From the 18th century onwards, biological existence is no longer a neutral, unchanging substrate upon which political existence is superimposed. Consequently, a new politics emerges ... biology is drawn into the domain of power and knowledge. The establishment of norms, hierarchies and statistical analyses gain in importance in relation to the creation of legal frameworks. Rather than exercising its sovereign right to curtail life in periodic, spectacular manner, politics focuses increasingly on the fostering and direction – the government – of life. (Marks, 2006: 333, original emphasis)

The most productive aspect of a poststructural cognitive semantics is theoretically linking the role of the production and normalization of space, place, language, performance and self as it relates to the embodied mind. Despite the underlying metaphors of externality in his conceptualization, Foucault’s (1980) general understanding of the technologies of self is generally instructive of such a theoretical link. Here, the biopolitical person becomes a particular subject...
by, metaphorically speaking, ‘internalizing externally contrived content’ and then ‘externalizing that content’ through structured performances which in turn become external elements to be internalized by others. The center of action for social regulation and the site upon which effective resistance must be directed is the body. While the technologies of self dictate that biopolitical subjects actively participate in their subjectivization, it provides no explanation of cognition in this process. When we rearticulate the decentered biopolitical subject into a poststructural cognitive semantic perspective, this subject becomes the embodied subject defined above. Moreover, resistance is a necessary element in Foucault’s conceptualization of productive power. But why do people follow along or resist in the first place? Without an explanation for how linguistic constructions succeed or fail, the mechanisms are simply assumed. Cognitive semantics not only theorizes this process, but it also provides methodological constructs for investigating examples (for an account, see Lakoff, 2002, 2008).

Poststructural cognitive semantics can provide theoretical guidance for properly articulating the role that non-linguistic elements have in being, sociability, and language. Thus, while a poststructural cognitive semantics involves a linguistically oriented method, it ironically aids in the non-representational agenda of NRT. For embodied geographies interested in the role that language has in the non-linguistic, and more importantly, the role that non-linguistic cognition has in language, a poststructural cognitive semantics can provide a productive theoretical framework. At the end of the day, the future of embodied geographies will increasingly resemble embodied cognitive geographies as the social sciences become ever more affected by embodied cognitive science.

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