Configurations

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Article

Matter, System, and Early Modern Studies:
Outlines for a Materialist Linguistics

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Materialist criticism, now into its third decade, is still grappling with difficulties related to transforming early forms of Marxism into more fluid and encompassing historical theory. [1] Among the problems for materialist studies of early modern culture, and for Shakespeare studies in particular, has been the struggle to model a viable historical materialist dialectic—to establish, as one Shakespearean recently put it, a "precise balance . . . between the impact of base and superstructure in the analysis of literary texts." [2] How, for instance, should critics **[End Page 311]** reconcile the economic determinism at the core of Marxist historical theory with their own instincts to focus on a variety of early modern material practices, some (but not all) of them economic in character? Is there sufficient theory to account for these instincts and for the tendency they provoke toward a privileging of superstructural effects—be they the religious, mythic, or philosophical objects of the "old" historicism, or the ideological structures of the "new"? At stake are key issues, the approaches to which still roughly distinguish Marxist, cultural materialist, and new historicist considerations of early modern texts and history. Arguably, the most important of these issues still waiting to be resolved relates to the ideological means by which the human subject is constructed, and the limits to agency imposed on the subject through its interpellation by the cultural system. [3]

How critics evolve in their understanding of the base and superstructure of early modern culture depends, first, on how they define two terms, *matter* and *system*, within a materialist framework; and second, on the degree to which they continue to fall back on *formalist methods* that prescribe these terms in ways that make them incompatible **[End Page 312]** with historiographic concerns. The attempt to identify vestigial formalisms in ostensibly nonformalist contemporary theory is certainly nothing new, and in early modern studies it has sometimes been presented as a project of singular importance. Almost a decade ago, Louis Montrose asserted that "we should resist the inevitably reductive tendency to constitute [base and superstructure/text and culture] as binary oppositions, instead construing them as mutually constitutive *processes.*" [4] Yet despite this and similar injunctions, Montrose, Robert Weimann, and Hayden White are still able to cite critics' ongoing tendencies toward using the stasis-inducing methods of formalist analysis in their attempts to come to grips with these

questions. [5] White, for instance, points out that the new historicism has "offend[ed] the various 'cultural materialists'" [6] through its distinction between the [base-like] literary text and the text's [superstructural] historical contingencies—its cultural system—and through the construal of that system as *the* constitutive force behind "social institutions and practices" [7] rather than the other way around, as might be expected from a Marxist paradigm.

This critique bears a resemblance to Edward Said's observations about the ahistoricity of Derridean deconstruction—and for good reason, since, as I will argue, both deconstruction and materialist studies have internalized basic formalist assumptions about the operations of language that are indigenous to linguistic structuralism. [8] In my view, however, the complaints of Said and other literary scholars are limited by a tendency to define the formalism underlying structuralism too narrowly in conjunction with the way it is defined in philosophical aesthetics, an interpretive method that addresses itself more to the level of the text than to operations of language **[End Page 313]** within the text. When we focus our anxieties on deconstruction's reduction of discourse to text, we are *already* in the midst of an abstraction, for this is a critique in which, whether we realize it or not, formalist assumptions have already been made but are too deeply buried within the aestheticized "text" to be recognized. The problem is at least partly academic in that it points to the limits that disciplinary boundaries place on the kinds of inquiries that are made to seem relevant. I suggest that by expanding our inquiries to include the critiques of formalism found in other disciplines—most productively in science and linguistics—we can broaden our notions of materiality and (to a lesser extent) systematicity, concepts central to the varieties of materialist criticism.

I explore these problems first by offering a science-based critique of Derridean language theory, focusing on the formalism latent in Jacques Derrida's narrative of *différance*. Then I extend this critique to the alternative paradigms of Mikhail Bakhtin and Robert Weimann, arguing that even these models, in their attempts to overcome deconstruction's notorious ahistoricism, have failed to satisfy the full extent of materialist criteria. Subsequently, I offer what I believe to be a more satisfyingly nonformalist linguistics, one that I locate in the new and controversial field of cognitive linguistics. Using examples from the history of vocabulary expansion in Early Modern English, I demonstrate how a cognitive-based poststructuralism better enables us to model the vision of a materialist dialectic of material and cultural exchange. The sense of "material" that I will be using throughout emerges from scientific debates within the philosophy of mind that share with Marxist and Derridean senses a dimension of the *physical* underpinnings of (1) from a Marxist perspective, the basic forces and relations of economic production enabling superstructural cultural systems; and (2) from the more phenomenological perspective of Derrida, the acoustic dimension of the semiotic sign. The philosophy of mind has long exhibited an interest in the relationship of the physical to the apparently epiphenomenal, but in recent years its arguments have gone further than either Marx or Derrida in asserting the cognitive, indeed, the biological foundations of human language, of consciousness, and even of culture. [9] The cognitive linguists have extended some of these ideas **[End Page 314]** into a nascent but increasingly influential theory of *embodiment* as the material basis for language—and consequently, I would add, for consciousness and culture. While it may seem unlikely with this essay's initial foray into abstract language theory, explorations along these lines will eventually lead to the more specific discussion of materialist literary practice. At that point, however, rather than focus my argument on the content of early modern literary texts, I will concentrate instead on the early modern experience of *language*, using examples of Shakespeare's lexical inventiveness to examine some underinvestigated aspects of Early Modern English. [10] In addition to suggesting a new vision of the historical materialist dialectic, in this essay I will outline a fresh perspective on the early modern period's systemic linguistic forces—forces underlying both the textual and the contextual objects of materialist literary history.

I

On the face of it, a scientific discourse about formalism does not differ markedly from a philosophical discussion based on aesthetic principles. To the scientist, formalism is an analytical approach that **[End Page 315]** presumes the possibility of the presence of "pure" form or structure within a self-contained system. Unlike the formalist literary critic, however, the scientist pushes beyond the quasi-mysticism of "purity" to define it in terms of the abstract algorithmic rule, which operates autonomously from the concrete particulars that make up the contents of a given system. Formalist assumptions about cause and effect presuppose that a system's energy flows from large- to small-scale structures, or—importantly—*from* some originary, preexisting lode of abstract logic *toward* the concrete particulars of that system. The biologist Gerald Edelman and the mathematician Brian Rotman have labeled this a "top-down" model, as opposed to a model that posits energy flow from the "bottom up." [11] To inhabit a top-down understanding of a system is already to have erased causality at the constituent level (the bottom level, or, by analogy to the Marxist economic model, the base level), assuming instead the preexisting status and shape of a system's abstractions. Conversely, to inhabit a bottom-up understanding of a system is to assert the possibility of the spontaneous *creation* of form or structure from within the dynamics of material relations—the development, in other words, of abstract elements from out of the particular and concrete.

It would seem that a historical materialism would clearly favor the second model, at least as the description of a preliminary stage of dialectical relations; but this has not been true of critical practice. In early modern new historicism, for instance, critics have maintained a contradictory tendency to "eschew the base in favor of the superstructure," [12] regarding both early modern text and subject as little more than products of abstract social relations. This tendency results, I argue, from the residual formalism in deconstruction and other kinds of poststructuralist theory that now deeply inform historical materialism, for, as Ivo Kamps writes, "materialism, which until the early to mid 1970s basically meant traditional Marxism, **[End Page 316]** has managed to diversify into various types of criticism, most notably cultural materialism, materialist feminism, and new historicism (or cultural poetics). This diversification was greatly enabled by the advent of poststructuralist theory, vital aspects of which materialist criticism embraced." [13] If such a genealogy is valid, then we should consider periodic reexaminations of poststructuralism to be essential to ongoing processes of theoretical refinement. And I would contend, further, that a science-based inquiry is not an unreasonable way to begin. After all, poststructuralism may seem like an offshoot of philosophical postmodernism, but some of its most influential progenitors, notably Derrida and Louis Althusser, tended to step outside philosophy for their polemical premises, operating within and against scientific discourses. To the extent that poststructuralism has retained formalist assumptions embedded not just in literary but in *linguistic* structuralism (by which I mean both Saussurean structuralism and its modern-day descendants in post-Chomskyan generative linguistics), materialist theory cannot help but to internalize those same assumptions.

In his reconstitution of structuralism, Derrida's achievement was to destabilize the symmetries of Saussurean semiotics—to divide the signifier from the signified, and not just the sign from the referent. Meaning is no longer a presence within the signified, vivid to consciousness as the product of the difference between two signifiers within the closed stability of *langue*. Derrida's sense of meaning involves this same play of differentials, but his occurs among endless signifieds, within networks of relational differences that have no origin, center, or grounding truths. But he maintains Ferdinand de Saussure's two core insights—language as system, and meaning as a product of difference—*and* he maintains them complete with Saussure's peculiar emphases. In his essay "Différance," for instance, Derrida quotes Saussure's well-known claim that "in language there are only differences"; some two paragraphs later he himself echoes this assertion, presumably with approval: "In a language, in the *system* of language, there are only differences." [14] But as Bakhtin well understood, the problem with Saussure's statement is that it *over*states. Difference, to be meaningful, must occur within a framework of relations (to Bakhtin, social relations) that gives relevance to the very act of making a contrast. Saussure's

statement downplays this relational imperative in its claim that "only" differences create meaning. Derrida's echo preserves this necessity for relationship but is equally **[End Page 317]** bent in its rhetoric toward difference. What goes understated, then, in Saussure's model is the *kind* of dynamic system he has in mind: closed, stable, and autonomous. Derrida sees the need to open the Saussurean system, to transform not the fact of its systematicity but the nature of its systematic behavior. But he, too, by disproportionately emphasizing the role of difference, draws attention away from this key distinction between closed and open systems (a distinction to which the modern-day physicist is keenly attuned). [15] Because of this, Derrida can have his cake and eat it, too: he succeeds both in shattering the literary theorist's former notions of linguistic "structure" *and* in maintaining the imagery of structural parameters that the use of the word "system" automatically connotes. As it happens, he is right: linguistic structure is characteristic of open—not closed—systems, and its generative processes, though constrained by parameters on some dimensions, are also, on other dimensions, infinite.

But Derrida's rewriting of the closed Saussurean system does not succeed fully at redefining language as an unambiguously *material* system. On the contrary, similarly to the way in which he both accepts and rejects elements of a Saussurean framework for semiotics, Derrida accepts a number of assumptions that Saussure makes on first establishing language-as-system, and these assumptions point to a subtle top-down formalism. For instance, in the chapter of his *Course in General Linguistics* entitled "Linguistic Value," Saussure seems particularly sensitive to the goals of the mathematical logicians of his day, whose entire program was centered on efforts to hybridize formal logic into the framework of analytical geometry. [16] Saussure writes: "To prove that language is *only a system of pure values*, it is enough to consider the two elements involved in its functioning: ideas and sounds." [17] Here "pure value" serves the same purpose **[End Page 318]** as "pure form" in a formal mathematical equation: it provides the structural blueprint for a computational process occurring prior to that process and determining the ultimate organization of all the constituents of that process. Saussure then makes the following erroneous assertion:

> Psychologically our thought—apart from its expression in words—is only a shapeless and indistinct mass. Philosophers and linguists have always agreed in recognizing that without the help of signs we would be unable to make a clear-cut, consistent distinction between two ideas. Without language, thought is a vague, uncharted nebula. There are no pre-existing ideas, and nothing is distinct before the appearance of language. [18]

In fact, late-century cognitive science has arrived at precisely the *opposite* conclusions about the interrelations between language and thought (though without having to embrace the equally problematic idealism of the Lockean "preexisting idea"). [19] Yet this statement, constituting a wholesale dismissal of the human psychology, serves as Saussure's central justification for taking a formalist approach in his description of language. Importantly for my later purposes, a related but more complex version of this approach still persists in much of post-Chomskyan generative linguistics, wherein psychological contributions to language formation are constructed in terms of a model of cognition that maintains formalist elements. [20]

In any event, Saussure's decision to isolate language from the very psychology that he himself admits must undergird it is understandable, given the prominence in centuries past of the rationalist dualisms of mind vs. body and mind vs. brain—a version of idealism that situates human consciousness epiphenominally and essentially apart from human biological functions. Given this timeworn set of assumptions, it makes sense that Saussure and subsequent theorists **[End Page 319]** (including Derrida, as I will argue) would seek to establish the mechanical bases for discourse outside considerations of the role of a cognitive dimension. Nevertheless, today's cognitive science routinely includes the operations of cognition in its language models, though with significantly varying assertions about the function, and even the definition, of "cognition." [21] Some scientists,

most notably Patricia Churchland, have even called for reassessments of the assumed autonomy of human consciousness over other mind or brain functions, maintaining instead its inseparability from neurophysiology. [22]

What should be surprising, however, is the fact that Derrida, concentrating closely on the need to transform language into an open system, seems passively to accept Saussure's implied disembodiment. We find evidence for this acceptance in the essay "Différance" at a moment, for instance, when Derrida seems aware of the problem that disembodiment poses but oddly uninterested in exploring its **[End Page 320]** implications. In explaining how difference "affects the *totality* of the sign," he offers a minimal breakdown of the sign into the standard parts of signified and signifier. [23] But in further glossing the meanings of these parts, he seems willing, in the next sentence, to assume Saussure's elision of "psychology," noted above: "The signified is the concept, *the ideal meaning*; and the signifier is what Saussure calls the 'image,' the 'physical imprint' of a material, physical—for example, acoustical—phenomenon." [24] From the grammar of this sentence, in which the phrase "the ideal meaning" serves to modify the noun "concept," we are to understand that Saussure defined the signified—the thing-in-the-world being referred to—as a platonic ideal, presumably an ideal encased within the human mind. Yet in calling it an ideal, Derrida implies that it has a uniform value from mind to mind; for example, my concept of "dog," being an ideal, apparently matches your concept of "dog," since by definition an ideal is a singular entity. Saussure's disembodiment of semantic "concept" is fully in keeping with a rationalist philosophical heritage. Derrida, in all other respects polemically nonrationalist, must surely recognize the problems inherent in this or any idealization. But his next statements make clear his disinterest in it and thus his acceptance of it, which we may judge by his willingness to incorporate the idealized "concept" into his uses of Saussurean "difference":

> *We do not have to go into all the problems posed by these definitions here.* Let us cite Saussure *only at the point which interests us*: "The conceptual side of value is made up solely of relations and differences *with respect to the other terms of language,* and the same can be said of its material side. . . . Everything that has been said up to this point boils down to this: in language there are only differences." [25]

The disembodiment of "concept" further enables Derrida to realize his vision of the radically open linguistic system with its introduction of *différance* and its consequences for the construal of the human subject. In response to one of Saussure's characteristically formalist statements, "Language is necessary for the spoken word to be intelligible and so that it can produce all of its effects," Derrida writes:

> If, by hypothesis, we maintain that the opposition of speech to language is absolutely rigorous, then *différance* would be not only the play of differences within language but also the relation of speech to language, *the detour through which I must pass in order to speak. . . .* The practice of a language or of a code **[End Page 321]** supposing a play of forms without a determined and invariable substance . . . *must be a kind of writing before the letter,* an archi-writing without a present origin, without archi-. [26]

Although his rhetoric connotes initial skepticism, Derrida quickly confirms and elaborates Saussure's contention that the abstract linguistic system precedes its idiosyncratic usage by particular speakers, going so far as to raise in subsequent paragraphs a rhetorical "objection" to the possibility that human "consciousness" might somehow enter into the process as a mediating factor—only to dispel this notion on the basis of its unacceptable metaphysics: "The privilege granted to consciousness . . . signifies the privilege granted to the present. . . . This privilege is the ether of metaphysics, the element of our thought that is caught in the language

of metaphysics." [27] The "conscious" speaking subject may think it experiences "presence to itself," but "[c]ertainly . . . the speaking or signifying subject could not be present to itself . . . without the play of linguistic or semiological *différance*." [28]

Language, in other words, precedes the human subject; or, to paraphrase from within a scientific discourse on formalism, the abstract whole determines the function of its constituent parts, of which the individual speaking subject is presumably one. "Since language . . . has not fallen from the sky, its differences have been produced . . . but they are effects which do not find their cause in a subject or a substance, in a thing in general, a being that is somewhere present, thereby eluding the play of *différance*." [29] This logic leads to a description of the human subject as a product of inscription, to a vision of the passivity—the non-"presence"—of the individual in its subjection to a totalizing language system. We have seen this passage rephrased in hundreds of analyses since the late 1970s: "the subject is inscribed in language, is a 'function' of language, becomes a *speaking* subject only by making its speech conform . . . to the system of the rules of language as a system of differences." [30] From a scientific standpoint, this is an inescapably top-down and formalist declaration even while it aims to support a nonidealist method. It delineates not only how critics conceive of the constructive power of the language system, but also how they conceive of the human subject **[End Page 322]** as abstractly constructed—as a being devoid of Being until it is organized by a system of codes. [31]

Such a critique need not detract from Derrida's more general contributions to poststructuralism, especially insofar as his insights have enabled Foucauldian-era critics of culture to recognize and treat as substantive the metaphorical underpinnings of social categories like "subject," "authority," and "power." Yet a nonformalist, materialist theory of linguistic systematicity this Derridean poststructuralism still is not—at least not according to contemporary scientific definitions of "system." I refer now to "chaos theory," a relatively new field of nonlinear dynamical systems theory in mathematics, physics, and (by analogy) philosophy; and to "complexity theory," chaos theory's adjunct in the life sciences. Both descriptions of the behavior of previously misunderstood systems present a new model of the relationship between a system's material and abstract elements: they show how apparent epiphenomena can emerge or "self-organize" in a bottom-up direction from the minutiae of a system's physical components; and in circular fashion how, once constructed, these epiphenomena may influence or "feed back" information into the environment that determines the system's physical characteristics. Significantly, these theories confirm a vision of certain limited powers of abstract determinism, but they save *originary* **[End Page 323]** constructivity for the system's material elements, positing the flow of origination always in a direction from small to larger scales. In thus rewriting material and abstract relations for at least some systems, chaos and complexity theories suggest a new definition of "system" that serves as an alternative to, though not necessarily a replacement of, the classical Newtonian definition. The need for an alternative definition arises from the fact that classical theory specifies regularity and predictability as twin, necessary characteristics of systematicity; whereas, while many chaotic systems' activities show regularity, their extreme complexity usually renders their future states impossible to predict. [32] I will return to the notion of an alternative systems theory later in this discussion. For the moment, it should suffice that the idealism latent in Derrida's narration of *différance* conflicts with the image of infinite creativity within finite parameters that he otherwise hopes to convey—and could convey, potentially, through recourse to nonclassical and nonformalist models.

Alternative poststructuralist models—most prominently the dialogism of Bakhtin (and/or V. N. Voloshinov), but including, for the early modern scholar, Weimann's theory of theatrical mimesis—seem to be less formalist in that they address themselves overtly to the difficulties of modeling change from within the abstractions of the semiotic system. Both theorists emphasize Saussurean *parole* over *langue* as the source of meaning, focusing on the semiotics of the language act: for Bakhtin, the act of dialogic exchange; for Weimann, the

performative representation of the dramatic text. Both locate within the act itself the materiality of vocalized sign or physical gesture, a materiality manifested in exchanges between specific speakers and listeners or between specific performers and theater audiences. Such exchanges provide the means by which social ideology circulates, taking its material character from this mode of transmission and thereby actualizing its characteristic mutability—the constant flux, flow, inversion, subversion, and dominance tendencies of cultural discourse. [33] But while these theorists do suggest an alternative **[End Page 324]** to the totalizing effects of the Derridean text, they do not completely surmount the problem of formalist abstraction. As Mark Poster argues, neither the Derridean nor the Bakhtinian model satisfies the historian's antistructuralist impulse to find "principles of structural variation which constitute a linguistic field *at the temporal level*" [34] —in other words, an explanation not just for the fact of ideological change but for the fact of *linguistic* change, changes in the forms of the ideological medium itself. Instead, these theorists' categories "tend to capture language in a way that presents it as a structurally unchanging phenomenon." [35]

A modern-day structuralist linguist would agree with Poster's critique but would point out additionally that the misunderstanding underlying these and other poststructuralist models has to do with the fact that the abstract sign system, so central to the discipline of semiotics, represents only one of a number of interrelated systems or levels comprising the entirety of natural-language usage. To focus analysis exclusively on a sign system—whether verbal or gestural, a product of text or of act—is to miss the potential influence of other levels that are tangential to but interactive with the sign, namely, the grammatical, pragmatic, lexical, and semantic levels. Literary scholars may be largely unaware of linguists' breakdown of language into discrete but interactive levels—a reason, perhaps, for the enduring status of semiotics in literary studies. But the formalism inherent in semiotics is not necessarily erased through this acknowledgment of modern-day linguistic practice; on the contrary, modern linguistics, and generative linguistics in particular, maintain their own formalist tenets, and it is specifically against these tenets that I now build my argument. Noting again the rationalist heritage behind both Saussurean and Chomskyan approaches, I suggest that if the traditional dualisms of mind vs. brain and mind vs. body are dissolving as scientific premises, and if scholars are even debating the supposed autonomy of human consciousness, then it seems unreasonable to continue making the corollary assumptions that the forms dictating linguistic codes are abstract, removed from other **[End Page 325]** brain functions and analyzable by the pure logic of the algorithmic rule—as do many generative linguists. [36] Raymond Gibbs calls these assumptions the "generative wager," implying their status as hypothetical, and notes that their advocates "will often miss cognitive/functional explanations of linguistic structure because they assume a priori that linguistic constructs are autonomous from general conceptual knowledge." [37]

I argue that the abstract givens of both a poststructuralist semiotics and an idealized generative linguistics detract alike from the materialist critic's ability to ask a key question: whether or not it is possible that the grammatical, pragmatic, lexical, and semantic systems are—like the sign—*material*, and not, at least not fundamentally, abstract. Take the visions of Bakhtin and Weimann, whose similar theories embrace what is actually a specialized version of linguistic pragmatics. In focusing on the language act, both theorists are also adopting the most serious *limitation* of linguistic pragmatics: that is, they leave open the problem of the origin of the act itself. What, after all, motivates the action that gives Bakhtinian language its dialogic dimension? What keeps that act from being random—gives it its form? [38] Generative linguistics responds to questions of pragmatic form by positing that the top-down rule system allegedly governing synchronic grammatical relations must also determine the diachronic character of the situated language act. Interestingly from my standpoint, however, some linguists working outside this tradition have begun to invert the formalist imagery of cause and effect by stressing fundamental *cognitive* processes that they see as the motivator and organizer of pragmatic dynamics. These researchers adopt alternative assumptions about mind/brain unity that Gibbs calls (in contrast to the generative wager) the "cognitive wager." [39] For example, Paul Hopper and Elizabeth Traugott describe

their approach to pragmatics as follows: “In speaking of communicative **[End Page 326]** strategies and problem solving in the course of speaker-hearer interaction, we refer . . . to strategies used by speakers and hearers in producing and understanding the flow of speech as it is created. In our view, *these strategies draw upon general cognitive processes*.” [40] Such a declaration of the “cognitive wager” constitutes a rejection of top-down synchronic analyses conducted on the idea that the language act can or should be modeled apart from a psychological context. The same applies, I argue, for other aspects of linguistic analysis.

II

For early modern studies to realize the potential of a historical materialist dialectic—for it to establish, as mentioned before, that “precise balance . . . between the impact of base and superstructure” in the analysis of the text [41] —it will require a more satisfyingly materialist linguistics, one that realizes key attributes of poststructuralism but does so without maintaining the formalist habits or limited definition of systematicity that I have tried to demonstrate. The full portrait of this materialist linguistics would have the following features:

— Its claims to materiality would include the material processes underlying a unified human mind/brain activity. It would adopt, in other words, Gibbs's "cognitive wager."

— Its forms and structures would be shown to self-organize in an analogous sense to the emergent structures of complex chaotic systems: in a bottom-to-top direction from out of the human cognitive apparatus, giving the production of linguistic structure a cause-and-effect schema that operates from a material—indeed, a biological—base toward an increasingly abstract superstructure.

— It would be able to account for the general properties of linguistic systematicity long known and accepted in theoretical linguistics: creativity, or language users' capacity to produce and comprehend an infinite number of new utterances through the use of finite resources; and productivity, the means by which language users transform linguistic resources from level to level and from context to context.

— Directly contrary to what Noam Chomsky assumed when he constructed the first comprehensive theoretical linguistics, a materialist linguistics would assume that the linguistic system **[End Page 327]** cannot be idealized, frozen for purposes of observation. A materialist theory begins instead on the assumption that linguistic forms emerge from their situated, historical contexts, and that no analysis with claims to explanatory power may be attempted without factoring in the contingencies of the language speaker's social and physical situatedness—determinants, in other words, of human subjectivity. Forms emerge from the subject's material conditions through the mediating presence of a semantic system, a system whose rootedness in the material cognitive system closes the formalist gaps between content and structure, subject and system.

—Corollary to the above, the methods of synchronic and diachronic analyses would collapse into a modified version of the diachronic, a byproduct of the materialist model's capacity to figure the one phenomenon that a formalist approach to systems must ignore or deny: change. The collapse of synchrony into diachrony encourages a new kind of systems analysis that recognizes the inseparability of evolution—both biological and cultural—from essential identity. [42]

— Finally, a materialist linguistics would maintain key insights into the characteristics of ideological constructivism achieved through the decades-long advance of poststructuralism. Poststructuralism derationalizes language and consequently elevates metaphor as the mechanism through which ideology circulates in cultural discourse. A materialist linguistics can further this project by demonstrating a continuity between small-scale metaphoric processes that derive from a subject's historical contingencies and large-scale ideological processes that function at the level of culture. For a more concise terminology here, we might distinguish between "cognitive metaphor" and "cultural metaphor," respectively, but we should preserve in such terms their shared origin in the material determinants of the human mind/body. **[End Page 328]**

I would argue that we find the most likely candidate for a linguistics of this description in the emerging field of metaphorics, a marginal, interdisciplinary program that N. Katherine Hayles has described as "the systematic study of metaphoric networks as constitutive of meaning production." [43] Metaphorics takes as its premises the constructive behaviors and semantic legitimacy of metaphor, assumptions that challenge rationalist science's traditional privileging of literal discourse. While metaphorics has spawned a variety of approaches, [44] I choose to focus on one in particular known as cognitive linguistics, for two reasons. First, cognitive linguistics poses a direct challenge to the formalism inherent in generative linguistics, thereby offering for literary theory an indirect review of the various poststructuralisms. Second, the cognitive linguists have been aggressive in modeling causal links between the semantic system and other levels of linguistic analysis, coming closest,

therefore, to presenting a fully integrated linguistics. [45] Cognitive linguistics has the potential to effect a materialist challenge to the formalist assumptions embedded in generative grammar that would be analogous to the impact of Marxism on liberal theories of history and economics. Its model rewrites the essential difference between linguistic meaning and structure to accommodate another kind of difference: a difference in the *degree* of structure within a unified linguistic framework. It describes a difference that holds among elements organized not oppositionally but along a structural continuum, whose interactions occur dialectically. In early modern materialist studies, this model has the special potential to contribute to ongoing debates among cultural materialists and New Historicists over "the precise nature of the subject/structural relationship, especially with regard to the subject's (in)ability to impact or subvert the social structure." [46] The "limited **[End Page 329]** form of human agency" [47] that these critics seek requires a theory that enables them to resist images of totalization and to replace them with images more in keeping with the historical materialist dialectic. This theory should elaborate the dynamics of a continuum that stretches between the materially situated human subject and that subject's abstract cultural milieu. To quote Montrose again, such a theory should enable critics "to resist the inevitably reductive tendency to constitute . . . terms as binary oppositions, instead construing them as mutually constitutive *processes.*" [48]

Like other inquiries in the field of metaphorics, cognitive linguistics begins its critique of generative linguistics by documenting the constructive role of metaphor in human thought and language systems. Philosophers, linguists, and literary critics have traditionally considered metaphor to be a deviant and even opposite form of expression from the literal, but many since I. A. Richards have challenged this view, arguing that the literal and the metaphorical are not dichotomously opposing discourses but instead are varying uses of the same materials operating within the same expressive system. Rather than deviating from or supplementing literal meaning, as the rhetorical tradition understands metaphor to do, this postmodern, Nietzschean metaphor actually *creates* new meanings and alters existing meanings. Its function, therefore, is semantic as well as grammatical; or, to put it another way, metaphor operates in thought as well as in language. And according to the cognitive linguists, at least, it is semantic (thought-based) *before* it is grammatical (in linguistic form). Beginning in 1980 with George Lakoff and Mark Johnson's *Metaphors We Live By*, researchers including Lakoff, Johnson, Gibbs, Ronald Langacker, Leonard Talmy, Mark Turner, Eve Sweetser, Gilles Fauconnier, and others have collected data that they say point to a causal link between semantics and higher-order levels of language analysis, in which grammatical form develops out of a densely structured semantic system.

The cognitive linguists assert or imply a number of important claims deriving from metaphor studies, some (but not all) of them verifiable by empirical means. These claims include the idea that human thought and language are interactive but essentially independent products of the same biologically derived cognitive system; that thought is partly structured by metaphor and partly by some form of direct, material exchange between the unified mind/body and its environment; that language, unlike thought, is completely structured **[End Page 330]** by metaphor; and that the presence and processes of metaphor in language are the result of a complex network of semantic exchanges at the cognitive level—exchanges in which cognitive metaphor plays an integral part, but in which only limited aspects of this metaphor are manifested in lexical choices. Consider, for example, the two statements "The life spilled from her body" and "Doctors struggled valiantly to keep her flame burning." Most English speakers would agree that both statements make reference to the concept of life. Most would also agree, however, that the two define life very differently. Each subsumes a complex of cognitive-level metaphorical associations that control the speaker's lexical choices: the first uses the metaphor LIFE IS A FLUID, manifested in the verb "to spill"; the second, the metaphor LIFE IS A FIRE, manifested in the noun "flame." [49] The two cognitive metaphors are equally conventional in the sense that we commonly use both in constructing our understanding of life, and few speakers of English would insist that one or the other is actually *wrong* as a descriptor for life. But while many would agree that "The life spilled from her body" and "Doctors

struggled valiantly to keep her flame alive" are statements that use metaphor, it is not immediately apparent that the *concepts* founding these statements are themselves metaphoric—that is, that thought itself operates metaphorically. Central insights gained from this recognition include, first, the idea that *no* statement about "life" can escape from essential metaphoricity; and second, that it is this condition and not a preexisting algorithmic rule system that determines the utterance's meaning.

Such a description of semantic exchange necessitates a theory of semantic category formation. In keeping with the critique of formalism, cognitive linguistics constructs a model of category formation using a bottom-to-top analytical schema, in which the mind/ body's most basic interactions with its environment are figured as inhabiting the ground for all successive construction. Cognitive metaphor, say the researchers, results from a process of interaction between similar, contrasting, or simply juxtaposed "source" and "target" semantic domains. The source domains of cognitive metaphors are constructed from basic-level "image schemata," uncomplicated abstractions of concrete experience gained through sensory interaction between the human body and its social and material environments. Modeled after the "conceptual schemes" of the philosopher Hilary Putnam, [50] image schemata are nonvisual mental templates existing **[End Page 331]** prior to the development of concepts. They are representations of the very simple geometries of such physical episodes as collision, release, propulsion, attraction, and compulsion—experience that, we must assume, is first gained in prelinguistic infancy and stored afterward in the adult memory. [51] Learning is a process by which an image schema, a minimal abstraction of a specific concrete experience, [52] exports its structure via "metaphorical projection" onto the target domain of unstructured experience—a domain that is "unstructured" precisely because it is lacking in concrete detail. The resulting mixture of concrete and abstract elements within the target domain may provide the architecture for a wholly new semantic category or domain; or it may revise the structural makeup of an already existing category or domain. In either case, once new semantic material has been created, *it* gains, in turn, the capacity to project its structure iteratively into even higher-level (i.e., more abstract) realms of experience. Each new metaphorical iteration may escalate this learning process toward greater and greater abstraction, thinning, as it goes, the bounds of originary perceptual constraints. [53] Basic-level image schemata and metaphorical projections, themselves abstractions from perceptual experience, are thus responsible for generating meaning where none existed before. But such "meaning," it should be stressed, is wholly contingent, relative not to some realm of absolute experience but to representations of situated embodiment manifested within a specific cognitive system. [54] **[End Page 332]**

III

To illustrate how the cognitive linguistic model may prove useful to materialist literary theory, I necessarily begin with a narrow scope: I show how it has the potential to alter the way we think about something so apparently inconsequential as Early Modern English vocabulary—indeed, how it enables us to integrate what is to many a mere stylistic matter into a dynamic component of materialist history. I will demonstrate the potential for a material continuity between the content and the form of words that mirrors the continuities between matter and structure—base and superstructure—at analogous levels of neo-Marxist analysis. Because most literary studies of Early Modern English focus on Shakespeare, and because Shakespeare was a major contributor of previously unrecorded words in his day, [55] I too will limit my examples to his language usage, though the principles I suggest apply to any author of this or any period.

The English of the sixteenth century was flourishing amidst an explosion of vocabulary, a lexical expansion unequaled, either before or since, in the language's history. Written forms of Early Modern **[End Page 333]** English are unique in the history of English for what they reveal about its variability, its lack of hard standards, and its tolerance for a range of accepted usages in grammar, orthography, pronunciation, and vocabulary. In the two hundred years spanning 1500 and 1700, written English added approximately 31,000 words to its inventory,

averaging about 1,600 borrowings and new word forms each decade. Significantly for literary scholarship, the most prolific of these years occurred in the two decades between 1590 and 1610, which saw the above-average addition of about 3,300 and 2,700 words, respectively, to the written language. [56] This period's coincidence of literary and lexical exuberance would seem to suggest a systematic link, but the possibility has drawn little comment. [57] Instead, critics have focused on documenting the influence of Latin, Greek, and French borrowings; these undoubtedly did contribute hundreds of words to the lexicon, but we err in placing too much emphasis on borrowing, an event that is external, at least initially, to the language system. In fact, there is evidence that loan words account for only a third of the period's known additions. [58] The other two-thirds—no small amount — appear to result from internal processes operating on elements already present within the language. **[End Page 334]**

The early modern period marks a moment of great instability in the history of the language, a phase during which the effects of previous changes reverberated for several hundred years before settling into the comparative stability of post-eighteenth-century English. We might wonder if late-sixteenth-century English speakers were not at least marginally aware of having the freedom to express themselves unhindered by the pressures of a standard dialect: linguistic invention had gained significant ideological force with the century's humanist emphasis on rhetorical eloquence, and with the grammar-school popularity of Erasmian "*copia*" (the enrichment of meaning through conscious recourse to synonym-making). But actual vocabulary growth went beyond the deployment of rhetorical devices or the synonymic matchmaking of existing meanings, involving, rather, a more open-ended generation of previously nonexistent meanings through recombinations of available linguistic resources. Early modern texts are replete with examples of such recombinations—authors deploying certain mechanisms internal to the linguistic system to forge new words out of previously unassociated elements. [59] The two most common of these mechanisms were what linguists today call "derivation" and "zero derivation" (the latter also known as "functional shift").

Derivation is a process by which a prefix or suffix is added to the stem of a word to create a new word (or by which new words are derived through phonological shift). To offer only two of many period examples, in a list of words cited by the *O.E.D.* as having first entered the lexicon through Shakespeare's plays we find the words "interchangement," a noun first appearing in *Twelfth Night* (1601), and "sanctuarize," listed as a verb in *Hamlet* (1602). [60] Both had come into Middle English from Old French (and, in the latter case, into French from Latin), but inhabiting different grammatical forms (as in "interchange," v., and "sanctuary," n.). Shakespeare invented (we presume) these words by adding the English suffixes *-ment* (a noun marker) and *-ize* (a verb marker), respectively.

The related process of *zero derivation* occurs when an existing word takes on a new grammatical function without experiencing **[End Page 335]** formal or phonological change—as when, for example, the noun "walk" and the verb "walk" share the same spelling and pronunciation, yet function differently in sentences. Zero derivation operates across the grammatical spectrum, turning nouns into verbs, adjectives into nouns, nouns into adjectives, verbs into nouns (in rare cases), and so on. It occurs frequently in the Shakespearean text—not because of Shakespeare's personal inclinations per se, though he may have had them, but because of its general pervasiveness in Shakespeare's linguistic environment. Examples abound [61] of, say, adjectives becoming verbs: "Wherefore dost thou *mad* me?" (*The Comedy of Errors*, 4.4.126); nouns becoming verbs: "Shall sweet Bianca practice how to *bride* it?" (*The Taming of the Shrew*, 3.2.251); proper nouns becoming verbs: "She *Phoebes* me" (*As You Like It*, 4.3.40); adverbs used (arguably in this case) as imperatives: "*Costly* thy habit as thy purse can buy" (*Hamlet*, 1.3.70); [62] and in one especially complex instance, a noun ("deed") becoming a verb

that then is subject to affixation (both prefix *un-* and suffix *-ed*), finally to become adjectival (modifying "sword"): "Either thou, Macbeth / Or else my sword with an unbattered edge / I sheathe again *undeeded*" (*Macbeth*, 5.5.19–21).

When historical linguists consider change mechanisms like derivation or zero derivation, their models reflect generative assumptions about the autonomy of grammar (defined as encompassing syntax and morphology) from other levels of linguistic analysis—most pointedly, for my purposes, the semantic level. Grammar's presumed autonomy allows it to be formalized according to the methods of a mathematical logic, which, by that method's definition as a top-down algorithm for generating the meanings of a system's constituent parts, renders grammar not just separate from, but also as operating prior to, other levels of natural-language production. The acceptance of this model necessitates an attendant commitment to veiled assumptions, first about *structure*—that is, if grammar is orderly and productive of meaning, then it must also be structured; **[End Page 336]** and conversely, if semantics or pragmatics is *not* productive of meaning, then it must lack structure—and second about *system*, to the extent that structure and order are synonymous with systematicity. Specifically in their models of vocabulary change, historical linguists distinguish between changes in word forms, which are structural/ systematic, and changes in word meanings, which, because meaning derives from grammatical organization, are therefore thought to be intrinsically unstructured/unsystematic. As the author of one textbook summarizes the viewpoint: "[U]nder certain circumstances semantic change can be quite regular and systematic. However, this should not detract from the fact that in most cases, semantic change is 'fuzzy,' highly irregular, and extremely difficult to predict." [63] The consequences of this kind of formalism for theories of vocabulary change are direct: discussion of change assumes the familiar parallel binarisms of structured vs. unstructured, systematic vs. unsystematic, and form vs. content. Accordingly, formal changes, or changes to words' shapes, are subsumed under the disciplinary umbrella of morphology (i.e., grammar), while changes to words' meanings are studied under the aegis of semantics (where the methods of analysis, though still formalist, use an altogether different mathematics and thereby imply, if not a *lack* of structure/systematicity, then an essentially different *kind* of structure/systematicity from that found in grammar). To the extent that linguists still define "system" in terms that specify nonarbitrariness and predictability as conditions, semantics may indeed be "unsystematic." [64]

These conceptions make a definite impact on the analysis of vocabulary change in Shakespeare's England, in that linguists tend to classify the two most common internal mechanisms—derivation and zero derivation—as changes in word form. Such classification implies that the bulk of the period's vocabulary growth was restrictively grammatical in nature; that is, that it occurred largely in isolation **[End Page 337]** from semantics. But this odd conclusion may be overturned by a cognitive analysis. For instance, cognitive linguistics brings to bear both theory and data that refute assumptions about the unstructured/unsystematic character of the semantic field—and thus about the essential difference between formal and semantic change —thereby offering new configurations of the relations between them. Eve Sweetser's study of semantic change in Indo-European languages reveals a surprising amount of what she terms "motivated" or patterned semantic change stemming from deep, cross-cultural currents of cognitive metaphors. She argues that descendants of Indo-European show a tendency to "derive [a] vocabulary of the mind from [a] vocabulary of the body," in keeping with what she calls the "mind-as-body [cognitive] metaphor." [65] Hence, words for hearing mean "obey" in Greek, English, Danish, and Russian as well as Proto-Indo-European; words for physical likeness evolve into expressions of probability in English (e.g., "likely"), Middle and Modern Irish, and Welsh; and words meaning "path" are also used to mean "however" in English (e.g., "anyway"), Breton, Italian, and Welsh—to offer a few examples. [66] Among linguists and philosophers, there is a well-recognized (though undertheorized) link between culture and meaning, and the open-endedness of this connection does seem to render semantics sufficiently indeterminable that we might never be able to *predict* specific changes. Nevertheless, argues Sweetser, such changes are obviously *not*

also arbitrary, at least not from the standpoint of a diachronic analysis: “Words do not randomly acquire new senses. . . . And since new senses are acquired by cognitive structuring, the multiple synchronic senses of a given word will normally be related to each other in a motivated fashion. By studying the historical development of groups of related words, it should be possible to see what sorts of systematic structure our cognitive system tends to give to the relevant domains.” [67] Sweetser’s assertion that semantic changes show “motivated” systematicity challenges her discipline’s definition of “system” and hence of structure. [68] I would even say that her position invites an analogy between the *kind* of systematicity she finds in semantics and that found in “chaotic” systems that show orderly behaviors but are too complex to be subject to scientific prediction. At the least, her research implies a breakdown of assumptions that derive from the generative **[End Page 338]** claim for the autonomy of grammar: that is, if semantics can be shown to be systematic despite its unpredictability, then the dichotomy between structure and meaning is no longer a given, and neither, therefore, is the exclusive identification of grammar with productivity.

Other cognitive linguists have speculated even further along these lines, postulating a linguistic continuum of emanative, iterative structures beginning from within the human cognitive system and extending in a bottom-up direction through the semantic and grammatical systems. Taking as a starting point the temporal nature of language delivery (the fact that, at least on the phonological level, we experience language sequentially through time), [69] Lakoff and Johnson demonstrate how we give imagery to our understanding of language by projecting onto it certain metaphors of space—cognitive metaphors manifested through our bodies’ physical experience of space. They write: “Since speaking is correlated with time and time is metaphorically conceptualized in terms of space, it is natural for us to conceptualize language metaphorically in terms of space. Our writing system reinforces this conceptualization. . . . Thus our spatial concepts naturally apply to linguistic expressions.” [70] Furthermore: “Because we conceptualize linguistic form in spatial terms, it is possible for certain spatial metaphors to apply directly to the form of a sentence, as we conceive of it spatially.” [71] A key conceptualization they point to, and one they consider responsible for the fact that “[l]inguistic forms are themselves endowed with content by virtue of spatialization metaphors,” is the cognitive metaphor LINGUISTIC EXPRESSIONS ARE CONTAINERS, a version of the “conduit metaphor” first noted by the linguist Michael Reddy. [72] This cognitive metaphor enables speakers to “conceptualize sentences metaphorically in spatial terms, with elements of linguistic form bearing spatial properties (like length) and relations (like closeness). Therefore, the spatial metaphors inherent in a speaker’s conceptual **[End Page 339]** system (like CLOSENESS IS STRENGTH OF EFFECT) will automatically structure relationships between form and content.” [73] Lakoff and Johnson offer the example of the contrast between the sentences “Harry is not happy” vs. “Harry is unhappy,” in which the negative morpheme “un-“ of the second sentence is physically closer to “happy” than is “not” in the first sentence, thus rendering a stronger sense of negativity in the second; or the sentences “I taught Greek to Harry” vs. “I taught Harry Greek,” whereby the closer proximity of the verb “taught” to its indirect object “Harry” in the second sentence renders “more of a suggestion that Harry actually learned what was taught him.” [74] They compare these examples of syntactic uses of CLOSENESS IS STRENGTH OF EFFECT to the more obviously semantic use of the same metaphor in the sentence “Who are the men closest to Khomeini?” (understood to mean “Who are the men who have the strongest effect on Khomeini?”), thereby supporting their contentions that “syntax is not independent of meaning” and that “[t]he ‘logic’ of a language is based on the coherences between the spatialized form of the language and the conceptual system, especially the metaphorical aspects of the conceptual system.” [75]

Returning to the prominence of derivation and zero derivation in the expansion of the Early Modern English vocabulary, I argue for a profoundly material link between the domain of early modern cultural meanings and the domain of linguistic forms, for a causal connection between the language’s semantic and grammatical exuberance and the well-known fecundity of the period’s literary character —all now symptoms of early modern

human *history*. I argue specifically that when mechanisms like derivation or zero derivation occur, they are motivated by a change in some aspect of the conceptual metaphors that underlie grammatical structures. In derivation, where the addition or subtraction of an affix results in a shift in grammatical function, its underlying metaphoricity involves the transfer of image-schematic structure that we experientially associate with that affix. Our previous experience as comprehenders of other people's utterances gives us source-domain materials that we use to structure each new, and especially each *unusual* new, utterance we encounter. To cite an earlier example, we assign image schemata for "thingness" (representations of physical boundedness) to the suffix -*ment*. When -*ment* is added to a verb like Shakespeare's "interchange," **[End Page 340]** then the semantic category expressing the act of "interchange" expands to include the image schemata for "thingness," facilitating its new use as a noun, "interchangement." In zero derivation, something similar occurs, except that instead of gathering image schemata from an affix, we infer them from a word's position relative, first, to other words in the sentence, and second, to our previous experience with the average design of the English independent clause (on average, organized in subject-verb or subject-verb-object order). Our *knowledge* of English sentence word order thus constitutes the source domain that we bring to bear on the target domain of an utterance whose elements are combined unconventionally—and therein lies the cognitive metaphor. Shakespeare's "I will *description* the matter to you" (*The Merry Wives of Windsor*, 1.1.196) is clear to speakers of English because they metaphorically project experiential "act" schemata (representations of trajectories or physical forces) onto what they know conventionally to be a "thing" by virtue of "description's" placement where "act" words conventionally appear.

This analysis gains support from Langacker, whose twin-volume outline of "cognitive grammar" offers a series of analyses showing how "grammar [can be] symbolic in nature, consisting in the conventional symbolization of semantic structure." [76] Many of his demonstrations involve concepts developed from the cognitive linguistic paradigm, including "schematicity" [77] as a method of analysis that replaces the linearity of a syntagmatic analysis with the gestalt geometry of a paradigmatic one; [78] and "semantic extension," [79] a mechanism corresponding to the image schema and metaphorical projection of Lakoff and Johnson's cognitive metaphor but functioning for Langacker as the "rule" [80] that translates semantic structures **[End Page 341]** into grammatical structures. Langacker analyzes both derivation and zero derivation as formal results of this semantic extension, a process of structural transference differing "only in degree from the figurative use of language." [81] Although my own analysis differs in its details, there is support for my reading in Langacker's assertions of the broad applicability of these mechanisms, [82] and in his arguments for a constructive function of "the interface between convention and usage." [83]

There would be merit in the counterargument that a model of a formative semantics ignores obvious syntactical determinants, such as the limits to word order that hold for English but not for Chinese. But I contend that if we filter the cognitive linguistic model of semantic-to-grammatical construction through the insights of contemporary systems theory, then a fully delineated metaphorics *can* account for the possibility that grammar represents an aspect of a speaker's experiential environment—and, as such, contributes to the structure of semantic categories—*but does not itself serve as the source of linguistic structure*. At its most abstract, this model posits a circularity of cause and effect that depends for its imagery on the feedback behaviors of chaotic systems. It envisions that base-level semantic structures beget epiphenomenal grammatical structures that, once created, have the capacity to influence the material bases from which semantic categories take their shape. But actual *new* structure self-organizes in a direction from concrete to abstract—or from levels of abstraction closest to the base toward levels of abstraction increasingly distant from the base. In short, this model realizes the paradox of a hierarchy of function within a system of fluid, dialectical exchange.

Patterns of Early Modern English vocabulary, inconsequential when considered in isolation, are transformed by a materialist linguistics into subtle indicators of a systematic continuity among three elements: the early modern human mind; the semiotic sign through which that mind finds expression; and the culture from/into which the mind absorbs/produces convention, including **[End Page 342]** literary convention. This vision surpasses other poststructuralist models that acknowledge the constructive powers of metaphor but decline to extend those powers to the principles of order behind the media of cultural production—to structure, to form, to the grammar, for instance, of Shakespeare's English. Materialist critics have long understood that social ideology and literary representation are twin artifacts of metaphor. But we have overlooked two possibilities, both of which may narrow the formalist gaps between content and structure, subject and system: first, that metaphor may have a material origin; and second, that this newly concretized metaphor behaves systematically, replicating structure from the concrete toward more and more abstract levels of experience. Grammar, the vehicle for representation, is the complement to the thing that it carries since both meaning and form are determined through figural processes. This model gives imagery to the materialist critic's already profound suspicion that subjectivity, language, text, and culture are bound up in a matrix of cause and effect, each affecting others and being affected by others in a dynamic of exchange that is both accretive and infinitely circular.

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Footnotes

1. By "early" Marxism I refer not to the classical Marxism of Karl Marx himself but to the structuralist revisions of classical Marxism in the 1960s and 1970s by Louis Althusser, whose work provided the foundations of much of what we call "materialist" or "ideological" criticism today. Althusser and his followers revitalized Marxism as political and social theory by combining its principles with the psychoanalytic and structuralist linguistic theories of Jacques Lacan—resulting in, among other innovations, a shift away from the humanist subject of Marx's economic history, toward an analysis of cultural ideology as constitutive of both history and subjectivity. See Louis Althusser, *Reading Capital,* trans. Ben Brewster (London: New Left Books, 1970); idem, *Lenin and Philosophy and Other Essays,* trans. Ben Brewster (New York: Monthly Review Press, 1972). More recently, the work of such "neo-Marxists" as Ernesto Laclau and Chantal Mouffe has questioned the strongly deterministic role that Althusser assigns to ideology, preferring a modified model that expands the agency of the subject and gives more credence to social struggle as an instrument of history. See Ernesto Laclau, *Politics and Ideology in Marxist Theory: Capitalism, Fascism, Populism* (London: New Left Books, 1977); Ernesto Laclau and Chantal Mouffe, *Hegemony and Socialist Strategy: Towards a Radical Democratic Politics,* trans. Winston Moore and Paul Cammack (London: Verso, 1985).

2. Ivo Kamps, "Materialist Shakespeare: An Introduction," in *Materialist Shakespeare: A History,* ed. Ivo Kamps (New York: Verso, 1995), p. 4. The Marxist architectural metaphor of "base and superstructure" supposes that human society, comprised of the state and social consciousness (superstructure), is founded on the forces and relations of economic production (base or infrastructure). The phrase "forces of production" refers to laborers and the tools they use to manufacture material goods; "relations of production" are the processes of reciprocal exchange between laborers during the production of material goods. A key tenet of this model is its emphasis on the superstructure's lack of autonomy—its dependence upon, and sensitivity to changes within, the economic modes of production.

3. The efficacy of "neo-Marxism" (see above, n. 1) for materialist studies of early modern culture is now apparent in the "subversion/containment" debate, which was initiated with the publication of Stephen Greenblatt's "Invisible Bullets: Renaissance Authority and Its Subversion, *Henry IV* and *Henry V,*" *Glyph* 8 (1981): 40–61 (revised and reprinted in *Political Shakespeare: Essays in Cultural Materialism,* ed. Jonathan Dollimore and Alan Sinfield [Ithaca, N.Y.: Cornell University Press, 1985], pp. 18–47), and has since been followed by numerous contentious statements, such as Jean Howard's about the stage as a site for social struggle: "[S]cholars are trying to understand how the stage could have functioned in a more complex and contradictory fashion within the interstices of a social formation which was not static, and in which the process of ideological domination is best understood as a process of constant negotiation with, rather than simple containment of, emergent or oppositional positions. This does not mean, of course, that some interests never won out over other interests or that social conflict could be resolved in a way equally beneficial to all subjects. Rather, it implies that social struggles had various outcomes and that a simple return to the *status quo ante* was not inevitable" (Jean Howard, *The Stage and Social Struggle in Early Modern England* [New York: Routledge, 1994], p. 82). In the "Prologue" to *The Purpose of Playing: Shakespeare and the Cultural Politics of the Elizabethan Theatre* (Chicago: University of Chicago Press, 1996), Louis Montrose cites Laclau and Mouffe directly as influences (pp. 3–4).

4. Louis Montrose, "Professing the Renaissance: The Poetics and Politics of Culture," in *The New Historicism,* ed. H. Aram Veeser (New York: Routledge, 1989), p. 21 (emphasis in original). Perhaps as a measure of the extent to which Montrose still perceives a lack of dialectical critical practice, he restates the same idea almost verbatim in *The Purpose of Playing* (above, n. 3), p. 14: "[W]hether the focus of our analysis is upon late sixteenth-century England or late twentieth-century America, we should resist the inevitably reductive tendency to constitute our conceptual terms in the form of binary oppositions. Rather, we should construe them as conjoined in a mutually constitutive, recursive, and transformative *process*" (author's emphasis).

5. See Montrose, "Professing the Renaissance" (above, n. 4); Robert Weimann, "Towards a Literary Theory of Ideology: Mimesis, Representation, Authority," in *Shakespeare Reproduced: The Text in History and Ideology,* ed. Jean Howard and Marion F. O'Connor (New York: Methuen, 1987), pp. 267–268; Hayden White, "New Historicism: A Comment," in Veeser, *New Historicism* (above, n. 4), pp. 293–302.

6. White, "New Historicism," p. 295.

7. Ibid., p. 294.

8. Edward Said, *The World, the Text, and the Critic* (Cambridge, Mass.: Harvard University Press, 1983), pp. 178–225.

9. For "material" Derrida offers the synonym "physical" (Jacques Derrida, "Différance," in *Margins of Philosophy,* trans. Alan Bass [Chicago: University of Chicago Press, 1982], p. 10), which is more general as a criterion for designating materiality than that found in typical definitions of Marxist "historical materialism"—e.g., "the causal primacy of men's and women's mode of production and reproduction of their natural (physical) being, or of the labour process more generally, in the development of human history" (Tom Bottomore, Laurence Harris, Victor Gordon Kiernan, and Ralph Miliband, eds., *A Dictionary of Marxist Thought* [Cambridge, Mass.: Harvard University Press, 1983], p. 324). Derrida's exclusive example of the sound property of the spoken utterance ("the signifier is what Saussure calls the 'image,' the 'physical imprint' of a material, physical—for example, acoustical—phenomenon" ["Différance," p. 10]) elides the possibility of a physical dimension to nonspoken and nonwritten communication, namely the biological and cognitive processes that undergird human language production. Recognizing with Fredric Jameson the danger of constructing facile "homologies" between mechanical, historical, and scientific materialisms, I nevertheless venture for the sake of argument to place Derridean, Marxist, and scientific senses of the "physical" under the broader rubric of materialist (as distinct from idealist) philosophical discourse (see Fredric Jameson, *The Political Unconscious: Narrative as a Socially Symbolic Act* [Ithaca, N.Y.: Cornell University Press, 1981], pp. 45–46). See recent discussions on the nexus between philosophical and scientific materialisms in Patricia Churchland, *Neurophilosophy: Toward a Unified Science of Mind-Brain* (Cambridge, Mass.: MIT Press, 1986); and Patricia Churchland and Terence Sejnowski, *The Computational Brain* (Cambridge, Mass.: MIT Press, 1992).

10. I recognize that my method implies a conflation of distinct concepts of language: for better or worse, I place within the same inquiry those like Derrida or Lacan, for whom language is a vast ontological metaphor, and linguists and cognitive scientists, for whom language is one of an array of cognitive functions defined by a certain set of physiological constraints. The virtue of this inquiry, I believe, is in urging poststructuralism toward a more refined and careful use of language as metaphor while supporting its efficacy for cultural studies.

11. Both Edelman and Rotman address theories of biological and cognitive evolution. Discussing the processes of natural selection, Edelman writes: "Selection contrasts starkly with platonic essentialism, which requires a topology created from the *top down*; instead, population thinking states that evolution produces classes of living forms from the *bottom up*" (Gerald Edelman, *Bright Air, Brilliant Fire: On the Matter of the Mind* [New York: HarperCollins, 1992], p. 73; emphasis added). Rotman applies this statement specifically to the development of human "consciousness": "[S]election from below, rather than rational guidance and information-processing from above, is the mechanism by which the mind/brain system... came into existence and evolved" (Brian Rotman, "Exuberant Materiality: De-Minding the Store," *Configurations* 2 [1994]: 263).

12. Kamps, "Materialist Shakespeare" (above, n. 2), p. 5.

13. Ibid., p. 1.

14. Derrida, "Différance" (above, n. 9), pp. 10–11 (emphasis in original).

15. Scientists define an open system as one that is receptive to incoming flows of energy, having a number of "degrees of freedom" that allow its contact with external forces; and a closed system as one whose parameters protect it from the effects of new energy.

16. The results of this movement, in fact, became the inspiration for Noam Chomsky in his similar efforts to model natural-language processes after the idealized rule-system of mathematical logic—a fact whose significance should become clear shortly. See Noam Chomsky, *Syntactic Structures* (The Hague: Mouton, 1957); idem, *Aspects of the Theory of Syntax* (Cambridge, Mass.: MIT Press, 1965). For critique and analysis, see Terence Moore and Christine Carling, *Understanding Language: Towards a Post-Chomskyan Linguistics* (London: Macmillan, 1982), pp. 3–8; or George Lakoff, *Women, Fire, and Dangerous Things: What Categories Reveal About the Mind* (Chicago: University of Chicago Press, 1987), pp. 219–228.

17. Ferdinand de Saussure, *Course in General Linguistics,* ed. Charles Bally, Albert Sechehaye, and Albert Riedlinger, trans. Wade Baskin (New York: Philosophical Library, 1959; rpt. 1966), p. 111 (emphasis added).

18. Ibid., pp. 111–112.

19. Notable surveys of research refuting the idea that thought cannot occur in the absence of language may be found in Merlin Donald, *Origins of the Human Mind: Three Stages in the Evolution of Culture and Cognition* (Cambridge, Mass.: Harvard University Press, 1991); and in Howard Gardner, *The Shattered Brain* (New York: Knopf, 1974). Especially instructive is Donald's review (pp. 82–86) of findings in André Roch Lecours and Yves Joanette, "Linguistic and Other Aspects of Paroxysmal Aphasia," *Brain and Language* 10 (1980): 1–23. See also Mark Turner, *The Literary Mind* (Oxford: Oxford University Press, 1996), for a detailed theory of the cognitive structure of narrative.

20. Cognitive psychology owes a great debt to Chomsky's early efforts to develop a counterbehaviorism that grounds language in a psychological model that defines "mind" as a "collection of specialized faculties whose general properties are biologically determined" (Thomas Wasow, "Grammatical Theory," in *Foundations of Cognitive Science,* ed. Michael I. Posner [Cambridge: Cambridge University Press, 1989], p. 198). My forthcoming critique of post-Chomskyan generative grammars would seem misguided, therefore, but for many linguists' continuing acceptance of two of Chomsky's major claims, both of which still hold the status of assumptions: first, that the language function, though cognitive in character, operates autonomously from other cognitive functions; and second, that within the language function itself, grammar operates autonomously from other levels of linguistic analysis. These claims give rise to "models of human cognition based on abstract representations and operations" (Wasow, p. 198) and for this reason have proven particularly useful for computer science. For a history of Chomsky's role in

the development of cognitive science, see Howard Gardner, *The Mind's New Science: A History of the Cognitive Revolution* (New York: Basic Books, 1995). For discussions of Chomsky's claims for autonomy, see Raymond W. Gibbs, Jr., "What's Cognitive about Cognitive Science?" in *Cognitive Linguistics in the Redwoods: The Expansion of a New Paradigm in Linguistics,* ed. Eugene H. Casad (Berlin: Mouton de Gruyter, 1995), pp. 27–53; Donald, *Origins* (above, n. 19); or Moore and Carling, *Understanding Language* (above, n. 16).

21. I discuss contending models of cognition in F. Elizabeth Hart, "Cognitive Linguistics: The Experiential Dynamics of Metaphor," *Mosaic* 28:1 (1995): 3–5. See also Gibbs, "What's Cognitive" (above, n. 20). The term *cognition* applies with equal potency both to formalist or "Functionalist" models in cognitive psychology and to approaches that pointedly challenge functionalism on nonformalist (or what I would call materialist) grounds. My uses of the terms *cognition* and *cognitive* throughout this essay intend the latter conception.

22. For examples of Churchland's materialist studies on mind/brain functions and discussions about consciousness as a construct of "folk psychology," see *Neurophilosophy* (above, n. 9), pp. 152, 319, and 321. She writes: "The difficulty is straightforward: reasoning, consciousness, moral feelings, religious feelings, political convictions, aesthetic judgments, moods, even one's deep-seated personality traits—all can be affected if the brain is affected by drugs or by lesions, for example. The more we know about neurology and about neuropharmacology, the more evident it is that the functions in question are not remotely as independent as the classical hypothesis asserts" (p. 319).

23. Derrida, "Différance" (above, n. 9), p. 10 (emphasis in original).

24. Ibid. (emphasis added).

25. Ibid., pp. 10–11 (emphasis added).

26. Ibid., p. 15 (emphasis added).

27. Ibid., p. 16.

28. Ibid.

29. Ibid., p. 11.

30. Ibid., p. 15 (emphasis in original).

31. This critique applies, as well, to the influential theory of subjectivity of Lacan, who (unlike Derrida) is actively interested in human psychology, but whose attempts to shift the ground of psychoanalysis away from Freudian ego psychology resulted in his full endorsement of the structuralisms of Saussure and Claude Lévi-Strauss. In fact, Lacan's turn late in his career to mathematics—considered by some to be his attempt to further legitimize his ideas to science—suggests a lifelong commitment to the principles of formalism (see Sherry Turkle, *Psychoanalytic Politics: Freud's French Revolution* [London: Burnett Books, 1979], p. 235). In addition, I suggest, the timing of this development in his work would imply, if not the direct influence of, then perhaps a response parallel to, Chomsky's own turn in the 1950s and 1960s toward the rationalist program of mathematical logic as a revolutionary new method of formulating linguistic analysis (see above, n. 16). Lacan's well-known theory, in which the unconscious is structured like a language and the human subject is constituted through its entrance into the "symbolic" of language, has made a profound impact on Marxist theory through its adaptations by Althusser, Jameson, and others—but particularly by Althusser, who based his notion of the "problematic" of the text on Lacan's unconscious-as-text. Althusser's "problematic" has become the core concept in ideological reading, a materialist literary critic's equivalent to the symptomatic reading of Lacan's psychoanalysis. See Althusser, *Lenin and Philosophy* and *Reading Capital* (above, n. 1); Fredric Jameson, "Imaginary and Symbolic in Lacan," *Yale French Studies* 55–56 (1977): 338–395; idem, *Political Unconscious* (above, n. 9). Similarly to what I say about Derrida, Lacan's importance to materialist theory should not be diminished; we must recognize, however, the extent to which both were invested in the formalist methods that were ubiquitous in the sciences during the time in which they were developing their theories.

32. For introductions to chaos and complexity theories, see James Gleick, *Chaos: Making a New Science* (New York: Penguin, 1987); M. Mitchell Waldrop, *Complexity: The Emerging Science at the Edge of Order and Chaos* (New York: Simon and Schuster, 1992); Roger Lewin, *Complexity: Life at the Edge of Chaos* (New York: Macmillan, 1992). For a discussion of these theories in a literary theoretical context (but one that is quite different from mine), see N. Katherine Hayles, *Chaos Bound: Orderly Disorder in Contemporary Literature and Science* (Ithaca, N.Y.: Cornell University Press, 1990).

33. See Mikhail M. Bakhtin (and/or Valentin N. Voloshinov), *Freudianism: A Critical Sketch* (1927), ed. N. H. Bruss, trans. I. R. Titunik (Bloomington: Indiana University Press, 1987); Weimann, "Towards a Literary Theory of Ideology" (above, n. 5); Robert Weimann, *Shakespeare and the Popular Tradition in the Theatre: Studies in the Social Dimension of Dramatic Form and Function,* ed. Robert Schwartz (Baltimore: Johns Hopkins Press, 1967).

34. Mark Poster, *Critical Theory and Poststructuralism: In Search of a Context* (Ithaca, N.Y.: Cornell University Press, 1989), p. 83 (emphasis in the original).

35. Ibid.

36. The methods of post-Chomskyan generative linguistics, though commonly descended from Chomsky's early theories and practice, have taken on divergent goals and emphases, not all of which subscribe fully to the notions that I attribute to them in general. For surveys of the various generative schools, see Peter Hugoe Matthews, *Grammatical Theory in the United States from Bloomfield to Chomsky* (Cambridge: Cambridge University Press, 1993); Wasow, "Grammatiucal Theory" (above, n. 20).

37. Gibbs, "What's Cognitive" (above, n. 20), p. 38.

38. I am not rejecting Bakhtinian or Weimannian dialogics altogether, but in the discussion to follow, I hope to make clear that I think there exists a more fundamental dimension of materialist analysis than that which is the focus of these theorists' ideas. Theirs constitutes what I would consider an important second-order level of analysis.

39. Gibbs, "What's Cognitive" (above, n. 20), p. 37.

40. Paul Hopper and Elizabeth Closs Traugott, *Grammaticalization* (Cambridge: Cambridge University Press, 1992), p. 67 (emphasis added).

41. Kamps, "Materialist Shakespeare" (above, n. 2), p. 4.

42. Interestingly, it is on the question of biological evolution that even a devotee of linguistic formalism like Steven Pinker disagrees with Chomsky, whose insistence on the autonomy of the language function has forced him to deny that language may be subject to evolution. For surveys and perspectives, see Steven Pinker and Paul Bloom, "Natural Language and Natural Selection," *Behavioral and Brain Sciences* 13 (1990): 707–784; Steven Pinker, *The Language Instinct: How the Mind Creates Language* (New York: HarperCollins, 1994), pp. 342–355; Turner, *The Literary Mind* (above, n. 19); Elizabeth Bates, Donna Thal, and Virginia Marchman, "Symbols and Syntax: A Darwinian Approach to Language Development," in *Biological and Behavioral Determinants of Language Development,* ed. Norman Krasnegor, Duane Rumbaugh, Richard Schiefelbusch, and Michael Studdert-Kennedy (Hillsdale, N.J.: Erlbaum, 1991), pp. 29–65.

43. N. Katherine Hayles, "Constrained Constructivism: Locating Scientific Inquiry in the Theater of Representation," in *Realism and Representation: Essays on the Problem of Realism in Relation to Science, Literature, and Culture,* ed. George Levine (Madison: University of Wisconsin Press, 1993), p. 39.

44. See Andrew Ortony, ed., *Metaphor and Thought,* 2nd ed. (Cambridge: Cambridge University Press, 1993); Mark Johnson, ed., *Philosophical Perspectives on Metaphor* (Minneapolis: University of Minnesota Press, 1981).

45. To my knowledge, Ronald Langacker provides the most comprehensive program to date of a "cognitive grammar" that outlines a theory of systematic causality between semantics and grammar. See Ronald Langacker, *Foundations of Cognitive Grammar*: vol. 1, *Theoretical Prerequisites*; vol. 2, *Descriptive Application* (Stanford: Stanford University Press, 1987, 1991). Eve Sweetser demonstrates systematic relations between semantics and pragmatics: Eve Sweetser, *From Etymology to Pragmatics: Metaphorical and Cultural Aspects of Semantic Structure* (Cambridge: Cambridge University Press, 1990).

46. Kamps, "Materialist Shakespeare" (above, n. 2), p. 7.

47. Ibid.

48. Montrose, "Professing the Renaissance" (above, n. 4), p. 21 (emphasis in original).

49. George Lakoff and Mark Turner, *More than Cool Reason: A Field Guide to Poetic Metaphor* (Chicago: University of Chicago Press, 1989), pp. 86–89.

50. Lakoff, *Women* (above, n. 16), pp. 229–268.

51. Mark Johnson, *The Body in the Mind: The Bodily Basis of Meaning, Imagination, and Reason* (Chicago: University of Chicago Press, 1987), pp. 18–64. Until recently, cognitive linguists could only speculate about the psychological reality of image schemata in the brain. See, for instance, ibid.; Lakoff, *Women;* George Lakoff, "The Contemporary Theory of Metaphor," in Ortony, *Metaphor and Thought* (above, n. 44), pp. 202–251; Leonard Talmy, "Force Dynamics in Language and Cognition," *Cognitive Science* 12 (1988): 49–100. But a small number of experiments conducted in recent years has drawn interested psycholinguists closer to verifying the presence of specific schemata in adult and infant subjects. See Raymond W. Gibbs, Jr., and Herbert L. Colston, "The Cognitive Psychological Reality of Image Schemas and Their Transformations," *Cognitive Linguistics* 6:4 (1995): 347–378.

52. Johnson, *Body in the Mind,* p. 29.

53. Ibid., pp. 65–138.

54. Those familiar with the work of such post-Lacanian theorists as Gilles Deleuze, Félix Guattari, or Slavoj Zizek—each engaged in furthering the project begun by Althusser of defining the nexus between psychoanalysis, politics, and representation—will notice that in the cognitive linguists the posited relationship between the body of the subject and the language system that the subject inhabits is directly *opposite* to what the post-Lacanians envision, especially with respect to what the latter perceive as the alienating effects of representation and desire. See, for instance, Gilles Deleuze and Félix Guattari, *The Anti-Oedipus,* trans. Robert Hurley, Mark Seem, and Helen R. Lane (New York: Viking, 1977); Slavoj Zizek, *The Sublime Object of Ideology* (London: Verso, 1989); idem, *Looking Awry: An Introduction to Jacques Lacan through Popular Culture* (Cambridge, Mass.: MIT Press, 1991). While "desire" as a concept is nonexistent in metaphorics in general, or in cognitive linguistics in particular, one advantage presented by the cognitive linguists is the extent to which they attempt to analyze representation—to bring to the fore contemporary discussions of the figural rather than falling back on the dated structuralist analyses of Roman Jakobson, on whom Lacan based his understanding of metaphor and metonymy. Considering the essentially metaphoric diagnostic methods of the psychoanalytic enterprise, as well as the fact that the rhetoric of the post-Lacanians is itself self-consciously metaphoric, then an alternative psychological paradigm centered on an aggressive analysis of the figurative may serve a purpose.

55. The issue of Shakespeare's personal contribution to his period's vocabulary explosion is interesting and inconclusive. Jürgen Schäfer has attempted to respond to this question by carefully collating first citations of words that appear in the *O.E.D* and the *Supplement to the O.E.D.* as they are ascribed to Shakespeare, Nashe, Malory, and Wyatt. He found that Shakespeare is credited with 1,904 "first citations" in the *O.E.D.,* revised to 1,087 in the *S.O.E.D.,* with an "antedating rate" (the rate of first citations later found to have preceded Shakespeare) of 6.9 percent. Most of these antedatings are clustered within the ten-year period previous to Shakespeare's use of them. Shakespeare is credited with innovating approximately 800 words more than Nashe, about 1,850 more than Malory, and about 1,880 more than Wyatt. As Schäfer points out, however, none of these figures is fully trustworthy since the ideological circumstances surrounding the development of the *O.E.D.* (begun by a small contingent of British academicians in the midst of the nineteenth-century Shakespeare revival) probably resulted in a privileging of the Shakespearean text above others as source. See Jürgen Schäfer, *Documentation in the O.E.D.: Shakespeare and Nashe as Test Cases* (Oxford: Clarendon Press, 1980).

56. Manfred Gorlach, *Introduction to Early Modern English* (Cambridge: Cambridge University Press, 1978; trans. 1991), pp. 136–137. I have given rounded figures drawn from the more specific numbers that Gorlach provides (31,401 new words; an average of 1,570 borrowings and new words per decade; the addition of 3,300 and 2,710 in the decades spanning 1590 and 1610) because statements of certainty in such matters seem untenable. The reader should nevertheless grasp general trends.

57. Major studies of Shakespeare's language generally note both a lack of prescriptive standards and the flurry of new words that characterizes the period, with most asserting the presence of a particularly "creative" literary atmosphere owing to these conditions. For instance, Sister Miriam Joseph writes that "the richness of Shakespeare's language [is] due in part to his genius, [and] in part to the fact that the unsettled linguistic forms of his age promoted to an unusual degree the spirit of free creativeness" (Sister Miriam Joseph, *Shakespeare's Use of the Arts of Language* [New York: Columbia University Press, 1947], p. 3); like others, however, she does not attempt to explain the dramatic nature of the change, or to place it within a theoretical framework along with parallel developments. See also E. A. Abbott, *A Shakespearean Grammar: An Attempt to Illustrate Some of the Differences between Elizabethan and Modern English* (1870; reprint New York: Dover, 1966); Richard Foster Jones, *The Triumph of the English Language* (Stanford: Stanford University Press, 1953); George Leslie Brook, *The Language of Shakespeare* (London: André Deutsch, 1976); Norman Francis Blake, *Shakespeare's Language: An Introduction* (New York: St. Martin's Press, 1983); S. S. Hussey, *The Literary Language of Shakespeare,* 2nd ed. (New York: Longman, 1992); Whitney French Bolton, *Shakespeare's English: Language in the History Plays* (Cambridge, Mass.: Basil Blackwell, 1983). For histories of Early Modern English, see Gorlach, *Introduction* (above, n. 56); Charles Barber, *Early Modern English* (London: André Deutsch, 1976).

58. Barber, *Early Modern English,* p. 167.

59. The processes of lexical invention that I am about to describe may arguably be explained as a function of the well-documented tradition of sixteenth-century rhetorical practice. My analysis should not supplant formal rhetoric as a factor in inventiveness, but rather extend its scope by demonstrating the metaphorically driven linguistic bases of *both* rhetorically inspired lexical invention (e.g., the figure "anthimeria," which could conceivably account for Shakespeare's deliberate uses of zero derivation) and unconscious, spontaneous invention.

60. Schäfer, *Documentation* (above, n. 55), pp. 111, 123.

61. These examples are not intended to show words' first-time uses in these functions. The quotations are taken from William Shakespeare, *The Complete Works of Shakespeare,* 4th ed., ed. David Bevington (New York: HarperCollins, 1992).

62. Arguably, "costly" in this line could be an adjective modifying "habit," but a full reading reveals no apparent verb (or perhaps the elision of "to be," as in "Thy habit *is* [as] costly as thy purse can buy"). The position of "costly" at the beginning of the line has repeatedly encouraged me to read into it the *function* of the imperative. The First Folio reads: "Costly thy habit as thy purse can buy; / But not exprest in fancie; rich, not gawdie: / For the Apparell oft proclaimes the man" (lines 535–537). Punctuation varies in the Second Quarto: "Costly thy habite as thy purse can buy, / But not exprest in fancy; rich not gaudy, / For the apparrell oft proclaimes the man" (lines 535–537).

63. Hans Henrich Hock, *Principles of Historical Linguistics,* 2nd ed. (New York: Mouton de Gruyter, 1991), p. 308.

64. In the noted linguistics textbook *Language Files: Materials for an Introduction to Language,* 5th ed., Department of Linguistics, Ohio State University (Columbus: Ohio State University Press, 1991), pp. 1–2, editors Monica Crabtree and Joyce Powers describe their concept of linguistic systematicity in these terms: "[S]ystematicity is sometimes hard to see [because] the very complexity of language obscures the patterns and regularities"; and "Some properties of a language are arbitrary, in the sense that they cannot be predicted from other properties or from general principles." The first statement equates "patterns and regularities" with "systematicity"; the second implies that phenomena that cannot be predicted must also, by definition, be arbitrary (i.e., unstructured/unsystematic).

65. Sweetser, *From Etymology to Pragmatics* (above, n. 45), p. 29.

66. Ibid., p. 28.

67. Ibid., p. 9.

68. See above, n. 64.

69. Langacker gives a cognitive linguistic description of temporality in language as follows: "Temporal ordering is a dimension of phonological structure [considered] part of the *internal structure* of each node in a constituency tree, but these nodes are not themselves temporally ordered with respect to one another" (*Foundations* [above, n. 45], vol. 1, p. 346n; emphasis in original).

70. George Lakoff and Mark Johnson, *Metaphors We Live By* (Chicago: University of Chicago Press, 1980), p. 126.

71. Ibid.

72. Ibid. See Michael Reddy, "The Conduit Metaphor: A Case of Frame Conflict in Our Language about Language," in Ortony, *Metaphor and Thought* (above, n. 44), pp. 284–324 (first published in the first edition [1979] of this volume).

73. Lakoff and Johnson, *Metaphors* (above, n. 70), p. 136.

74. Ibid., p. 130.

75. Ibid., p. 138.

76. Langacker, *Foundations* (above, n. 45), vol. 1, p. 2.

77. Ibid., pp. 68–71.

78. Ibid., pp. 74–75.

79. Ibid., p. 70.

80. My use of the term *rule* here echoes Langacker's (2: 264). Langacker retains it from generative practice apparently because it denotes "generalization." In a cognitive linguistic analysis, however, the nature of the generalization changes from being derived algorithmically to being the product of what I would paraphrase as an "adaptive association" between existing resources. These associations are "adaptive" in the sense that they are subject to speakers' acceptance or rejection depending on their "degree of conventionality" (1: 66), judgment arrived at through "the interface between convention and usage... [which is] the source of language change and the crucible of linguistic structure" (1: 65). I am grateful to L. Lynn LeSueur of Massachusetts General Hospital/Harvard Medical School for this insight into new uses of *rule* (private conversation).

81. Ibid., 1: 70. See, for example, Langacker's analysis of the derivation of "apricoty" (1: 72–73); the zero derivation of the noun "swing" from the verb "swing" (1: 346); or the nominalization of a prepositional phrase in the sentence "*By the fire* is much warmer" (2: 66).

82. Ibid., 1: 443–444; 2:264.

83. Ibid., 1: 65.

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