TOWARD A SOCIA LLY SITUATED, FUNCTIONALLY EMBODIED LEXICAL SEMANTICS: THE CASE OF (ALL) OVER.

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ABSTRACT

Functional embodiment is “[t]he idea that certain concepts are not merely understood intellectually: rather, they are used automatically, unconsciously and without noticeable effort as part of normal functioning” (Lakoff 1987: 15). Linguistic repercussions include lexical entrenchment in functionally salient usage contexts of numerous phrasal routines in which a word figures — a phenomenon here argued to be crucial for lexical semantics. Analyzing a fragment of the English over network within a usage-based framework, I show that similar usage constraints on a variety of phrasal routines involving (all) over attest to entrenchment of a distinct “chaotic dispersal” sense, not subsumable under “multiplex covering”. To account for such innovation, I propose a non-teleological, socially and situationally embedded model of semantic radial extension. First, situated speech comprehension yields gestalt meanings for assemblies containing the relevant item, e.g., [{spill} {milk} all over {the floor}]. Connotations of “chaotic dispersal”, compositionally licensed by verbs like spill, become “distributed” (Sinha & Kuteva 1995) over the verb-preposition collocation. Subsequently, considerations of functional embodiment trigger independent association of the “dispersal” sense with the preposition. The model’s implications are considered in the context of an evolving interdisciplinary understanding of the lexicon as a usage corpus, with lexical senses as emergent schematizations over clusterings of usages.

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1. Functional, situated and social embodiment

Lakoff (1987: 12–15) distinguished two sorts of embodiment: conceptual and functional. The former asserts the impossibility of understanding thought and language apart from their embedding in bodily experience. Appreciation of conceptual embodiment has fostered understanding of how linguistic conceptualization is grounded in non-propositional image schemas that generalize over more concrete perceptual images, and how even the most abstract language and thought are metaphorically rooted in bodily experience. Functional embodiment is instead the idea that “certain concepts are not merely understood intellectually: rather, they are used automatically, unconsciously, and without noticeable effort as part of normal functioning” (Lakoff 1987: 15, emphasis in original).

The linguistic implications of functional embodiment find articulation in Langacker’s Usage Based Model (1987, 1988, 1999). One corollary is that functionally salient conceptualizations tend to be associated with highly routinized forms of linguistic expression. Syntagmatically complex items, originally assembled from smaller constituents according to the general patterns of the language, over time become entrenched in lexical convention as unitary expressions (sometimes with variable slots). For routine sorts of complex conceptualization, such entrenchment has obvious utility. It reduces speakers’ on-line processing load, providing ready-made assemblies, immediately available “off the shelf.” It also streamlines comprehension, allowing direct matches between whole stretches of input and lexical knowledge, obviating microprocessing of each minimal lexical item. At a semantic level, moreover, it shortcuts the otherwise necessary contextualized pragmatic
inferencing from the minimal “compositional” meaning(s) of an assembly to a richer conceptualization of meaning appropriate to the particular speech event. This becomes possible because of direct incorporation into the unitized assembly’s semantic specification of elements that are “extracompositional” in origin, originally contributed by gestalt-level contextual inferencing (cf. Langacker 1999).

These notions are carried further in Zlatev’s (1997, 2003) model of “situated embodiment.” Like Langacker’s model, Zlatev’s is grounded in a Saussurean concept of linguistic symbols as pairings of phonological form and semantic content. It treats the semantic pole, however, as involving not conceptualizations, but actual “situation types” (and their component semantic categories). Accordingly, linguistic communication is not the transmission of conceptualizations from one head to another via the conduit of phonological form (cf. Reddy 1993), but rather the collaboration of speakers and hearers in coordinating their attributions of contextual meaning to situations, against a backdrop of shared sociocultural practices. As basic unit within this negotiative process Zlatev proposes the utterance or speech event, conceived as a “minimally differentiated language game” (MDLG). The “game” designation incorporates the late-Wittgensteinian understanding of language as involving interactive “forms of life,” situated within and deriving meaning from complexes of conventionalized sociocultural practices. Zlatev’s characterization of MDLGs as “minimal” embodies the striking claim that the contextually situated utterance is not merely “the smallest move in discourse,” but indeed “the smallest independently meaningful unit of language” (2003: 454). The qualification “differentiated” acknowledges that both utterance form and utterance meaning, while preserving their holistic character, are analyzable into smaller component elements. That the situated utterance nonetheless remains the basic unit of semantic analysis is partly a function of the assumption that within the utterance, mappings between semantic categories and lexemes are typically many-to-many. A given lexeme frequently conflates more than one semantic category (cf. Talmy 1985); conversely, the meaning of a single category may be distributed over more than one lexeme (cf. Sinha & Kuteva 1995). Both notions — situated utterance meaning as a holistic yet componentially analyzable
gestalt, and multiplicity or "non-biuniqueness" of mapping relations between elements of form and meaning — will figure crucially in the analysis that follows.

The present paper explores the significance of functional and situated embodiment for lexical semantics, Arguing for a highly “granular” approach to word meaning (Sandra & Rice 1995), it proposes a model whereby innovative lexical senses, often incompatible with the semantics of their diachronic prototypes, emerge as schematizations over local clusters of usages, absorbing from context semantic features unconnected with compositional utterance meaning. Concretely, I examine that part of the radially extended semantic network for English over once designated as “multiplex coverage” (Brugman 1981; Lakoff 1987: 428-430). Building on Queller (2001; cf. also Taylor 2002: 478-479, 2003a: 40-41), section 2 argues that a wide range of routine phrasal usages containing all over instantiate a “chaotic dispersal” meaning at odds with the semantics of covering (“multiplex” or otherwise). In support of this claim, I propose and exemplify a functionally embodied methodology for lexical semantic analysis that is grounded in routine phrasal lexical usage (collocations, constructions, idioms). Section 3 offers a two-phase model for the emergence of such innovative lexical meanings. Rather than positing direct schema-to-schema mappings (image schema transformations, metaphorical extensions), the model treats lexical semantic innovation as the product of “semantic backformation” from extracompositional gestalt utterance meanings. The approach is socially and situationally embodied, grounded in a model of communication that treats hearers as creative co-participants in the solution of concrete problems of communication. Guided by principles of functional and social embodiment, hearers arrive at linguistic construals of usage events that are significantly distinct from those explicitly coded by speakers’ lexical choices. While such construal differences in no way impede speaker-hearer coordination around

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1 “Social embodiment” does not refer here to the body’s role in social cognition (cf. Barsalou et al. 2003), but to the indispensability of taking communicative interaction into account when doing (e.g.) lexical semantics. Some may prefer to call this notion “social embeddedness” (cf. Chrisley & Ziemke 2002: 1103).
contextual meanings of usage events, they lay the groundwork for subsequent lexical semantic reanalysis. Section 4 considers the model’s place in an emerging interdisciplinary understanding of the lexicon as a vast usage corpus and of lexical senses as secondary schematizations over local patterns of usage.

2. **Multiplex Covering or Chaotic Dispersal? A functionally embodied approach to lexical meanings.**

2.1. *Previous approaches.*

On the standard account, the usages in question elaborate the basic Covering schema for *over*. The classic Brugman / Lakoff presentation, inclining toward a “maximalist” approach to schema specification, posited two distinct subschemas:

(1) a. There are flies all over the wall. **MULTIPLEX COVERING**

b. The spider crawled all over the wall. **MULTIPLEX COVERING PATH**

The first was assumed to derive from the basic image schema for Covering via a mass-multiplex transformation. In the new image schema, the trajector consists not of a single, continuous entity (like a blanket) that covers the landmark, occluding it from view, but of many individual entities (like flies).\(^2\) The landmark is conceived as containing “numerous small regions which jointly cover its surface (or most of it)”, with the multiplex TR distributed over the LM in such a way that “there is at least one trajector in each region” (1987: 428; I shall refer to this notion as “sectoral coverage”). The Multiplex Path schema was in turn conceived as a minimal variant on Multiplex Covering “in which the points representing the multiplex entity of [the latter] are joined to form a path which 'covers' the landmark.”

\(^2\) As usual in CL analyses, “landmark” (LM) refers to the entity with respect to which one locates or specifies another entity, the “trajector” (TR).
Seeking principled limits on the proliferation of polysemous schemas, Kreitzer (1997) proposed constraining the notion of image schema transformation so as to preclude (for example) distinct MULTIPLEX COVERING schemas for *over*. The model prohibits derivation of new “relational” schemas (image schemas in which distinct entities are related to one another as trajectors and landmarks). Image schema transformations are instead understood as construal operations involving only one or another component of a full relational schema (e.g., the trajector). In the present case, the transformation in effect applies in reverse (multiplex-mass). A multiplex entity figuring as trajector (e.g., a collection of flies or a single spider's “multiplex” path) is “conceived (though not necessarily perceived)” as a continuous surface, thus allowing the scene to be construed as instantiating the existing COVERING schema for *over*.

Recently, the anti-maximalist reaction has taken a pragmatic turn. Following Fauconnier and Turner, Tyler and Evans (2003) emphasize that the meanings of utterances are radically underspecified by the lexical expressions that constitute them. The latter, they note, serve largely to prompt for meaning construction in on-line speech processing. Much of the information present in an utterance meaning, rather than being directly coded, is thus contributed by contextual inferencing. Tyler and Evans (2003: 104–106) accordingly seek to establish methodological principles for distinguishing a minimal set of word senses that must necessarily be entrenched as separate meanings of an expression from the much larger set that are explainable in terms of contextual inferencing. For prepositions with a basic spatial meaning, they propose the following two criteria:

(2) a. The sense “must involve a meaning that that is not purely spatial in nature and/or in which the spatial configuration between the TR and LM is changed” *vis-à-vis* other senses, AND

b. “there must be instances of the sense that are context-independent,” i.e., “instances in which the distinct sense could not be inferred from another sense and the context” in which the preposition occurs.
By these criteria, Tyler and Evans distinguish 14 distinct senses for *over*, including one undifferentiated Covering node. We can infer from their discussion of the Covering complex (2003: 132–133) how the criteria in (2) may be taken to exclude independent entrenchment of "multiplex covering". With respect to criterion (2a), one might assume changed spatial configuration insofar as the TR, while still in a sense covering the LM, no longer occludes it from view. Tyler and Evans however suggest that “the occlusion interpretation is a contextual implicature of the covering sense and real world knowledge of the properties of objects such as tablecloths and blankets” that typically figure as “covering” trajectors (2003: 153, footnote 30). Conversely, the non-occlusive covering of (1a and b) may be seen as representing not a distinct lexical sense, but rather a contextual implicature based on real-world knowledge of what “covering” of a surface by less typical sorts of TRs like a swarm of flies or a spider’s path would look like. Exclusion of distinct senses implies that all such “non-occlusive coverage” cases are likewise inferentially derivable from context and real-world knowledge (2b).

Numerous arguments thus suggest that the “multiplex covering” usages straightforwardly elaborate the basic Covering schema for *over*. The following section will nonetheless argue that usage evidence indeed requires us to posit distinct schemas for the domain in question. The relevant schemas, while diachronically derived from Covering, no longer even elaborate it synchronically, reflecting instead a distinctive Chaotic Dispersal sense.

2.2 A bottom-up, usage-based approach.

The principle of functional embodiment predicts that frequent, functionally salient complex conceptualizations will tend to find expression in unitized, lexically entrenched linguistic assemblies. This suggests a methodology for functionally embodied lexical semantic analysis. For a given lexical item, one begins by identifying a reasonable sample of entrenched phrasal-lexical patterns, establishing these heuristically as the formal or “phonological” pole of a corresponding set
of linguistic symbols. One then examines characteristic contexts of use and constraints on usage to determine approximate values for the “semantic” poles of these syntagmatically complex units. Working upwards from individual phrasal lexical units, one then sees what more general patterns emerge at phonological and semantic poles as one gradually schematizes away from the formal and semantic details of the individual expressions. At any given level of schematization, those aspects of form and meaning not shared by the instantiating units are factored out, while aspects that are shared (however idiosyncratic) are schematically retained.

It is well known that prepositions tend to contract special collocational relationships with verbs. An obvious place to start, then, is to consider what verbs typically collocate with (all) over. Examples are listed in (3):

(3) daub / dribble / drip / dump / pour / scatter / smear / spatter / spill / splash / splatter / spread / sprinkle TR (all) over LM

Of course, none of these collocations demonstrates the existence of a discrete “chaotic dispersal” sense for all over. That sense is clearly part of the semantics of the verbs in question, and use of over in the “covering” sense in the context of such collocations is presumably sufficient to prompt a hearer to infer the appropriate sort of trajectory. More interesting are stative / resultative formulations using presentative or possessive constructions, in which processes normally lexicalized by such “chaotic dispersal” verbs, though evidently in the background, are not explicitly mentioned:

(4) a. There are crumbs ( / *? tiles) all over the floor.
   b. You’ve got chocolate ( / *? skin) all over your face.
   c. This tablecloth has bloodstains ( / *? red and white squares) all over it.

That something like “chaotic dispersal” is here signaled by all over becomes evident when one compares typically suitable trajectors (crumbs / chocolate / bloodstains…) with less felicitous ones (tiles / skin
On a “covering” interpretation, the latter ought to be ideal instantiations, but in fact they are quite odd. The former (good) sorts of instantiation represent far less ideal exemplars of covering; one indeed wonders whether covering is even at issue. The problem is not merely that it takes only a relatively few crumbs (for example) to warrant the predication that they are “all over the floor.” More problematic is that there need not be even minimal “sectoral coverage” of the landmark; crumbs that are construed as being all over the floor may in fact be strewn over a very small portion of its total surface (and quite likely elsewhere). The notion of “chaotic dispersal” captures the fact that, in typical uses of all over, the distribution of the Tr has little regard for the boundaries of the Lm surface, with respect to either reaching them or remaining confined within them. It also captures the non-topological, subjective sense of a loss of control that results in things ending up where they don’t belong, creating “a mess.” (See Appendix 1 for some relevant corpus analysis.)

One might want to preserve the Covering sense here, arguing that given our encyclopedic real-world knowledge, particular trajectors (like crumbs) and particular landmarks (like floors) interactively “coerce” particular interpretations of the sort of covering involved (cf. Pustejovsky 1995). From a purely decoding perspective, and with respect to the fully acceptable usages alone, the argument is appealing. The problem is with the infelicitous usages. On such an account, usages that constitute good exemplars of prototypical covering should, a fortiori, remain fully acceptable. An adequate theory must account not only for acceptability of apparently marginal cases, but for the problematic character of others that (on the given account) should be unproblematic. This would seem possible only on the assumption of a distinct Chaotic dispersal schema for all over.

Exceptions prove the rule. For example, the “tiles” variant of (4a) becomes felicitous if the tiles in question are scattered in a fairly random fashion across the floor’s surface, rather than systematically (and constitutively) “covering” the floor.
The very same issue recurs at a more abstract level with respect to the encoding idiom *have {guilt} written all over {one’s} face.* Unproblematically acceptable instantiations of this item can certainly be construed as involving “coverage” of the face by an emotional display; the problem is to account for the dubious status of certain other usages that on a “covering” interpretation should be equally acceptable. For example, usages like *He had rage / amazement / indifference written all over his face,* though sporadically attested in large corpora, are perceived by many native speakers as odd, compared with more prototypical instantiations involving words like *guilt.* Otherwise comparable constructions in other languages seem unencumbered by such nuances. With respect to amazement, for example, it is perfectly normal in German to say *Die Verwunderung stand ihm ins Gesicht geschrieben,* or in Italian *Gli si leggeva in faccia lo stupore.* Corpus analysis confirms that, in contrast to the German and Italian constructions, the English one is strongly preferred in contexts where an experiencer would like to conceal inner thoughts or feelings behind a façade of indifference or composure, but cannot. (See Appendix 2.)

Such preferences are explainable in precisely the same way as are those in (4) above. The best instances are those in which traces of the emotion are construable as being “chaotically dispersed” across the face. Guilt is characteristic for this expression precisely because it is the emotion that we most typically attempt to contain behind a façade of nonchalance or impassivity. When it nevertheless gets “chaotically dispersed” in such a way as to make our true feelings visible to others, we perceive this subjectively as caused by a loss of composure or

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4 “Encoding idioms” (Makkai 1972) are entrenched assemblies that are semantically transparent from a decoding perspective, but whose status as conventional routines cannot be predicted by speakers (or learners) apart from specific phrasal-lexical knowledge. The conceptualization conventionally expressed in English as *George has guilt written all over his face* can be expressed grammatically in other ways, e.g., *it appears as if there is something for which George feels guilty and which he’d like to conceal from people, if only he could keep that chaotic dispersal of affect over his face from revealing his true feelings.* Only phrasal lexical knowledge allows a speaker to express the notion in a way that native English speakers recognize as conventional. See Taylor (2002: 546–548) for useful discussion.
control, and as resulting in a regrettably messy situation (Queller 2001). Yet where does this “chaotic dispersal” frame come from? The participle *written* in itself no more reflects the semantics of chaotic dispersal than do the very general predicates in (4) above. The only constituent that might plausibly contribute this nuance is again the prepositional expression *all over*.

Going a step further, consider idioms for which “chaotic dispersal” is the only reasonable interpretation of *all over*’s semantic contribution, with a “covering” interpretation potentially yielding misconstrual:

(5) a. {This paper} is (just) all over the place.
   b. {The data} are all over the map.

Though learners might take (5a) to imply systematic “coverage” of a wide range of topics, it in fact refers to a piece of writing whose structure is chaotic to the point of incoherence. Likewise, (5b) implies a chaotic distribution that makes it hard to arrive at any clear conclusion, and attempts to force a “covering” reading lead to confusion (see Queller 2001, appendix 2). Both expressions represent lexically entrenched instantiations of a schema involving the evaluation of a summarily scanned path as chaotically dispersed.

All such expressions evincing a *CHAOTIC DISPERSAL* meaning in the absence of any chaotic dispersal verb suggest that, by the criteria in (2) above, *all over* has developed a distinct sense not subsumable under *COVERING*. Capturing the relevant generalizations in a descriptively adequate fashion is perhaps the chief advantage of the present sort of functionally embodied analysis. However, it also has other merits. First, it reveals much about the nature of idiomaticity. Expressions like those in (5) are shown, despite their idiomatic status, to participate in networks of semantic motivation linking them not only with one another, but also with less obviously idiomatic usages like those in (4). Second, it yields payoffs in accounting for network relational structure. The standard Brugman / Lakoff image schema for *MULTIPLEx (COVERING) PATH*, corresponding to utterances like (1b) above, reflects what I call a *CHAOTICALLY DISPERSED PATH*, even though the “connect-the-dots” transformation putatively deriving this image schema from so-called
MULTIPLEX COVERING proper might equally well yield a path that “covers” the landmark systematically, from side to side. Brugman’s original intuition of a prototypically chaotic path was in fact correct, but nothing in the traditional account motivates this. On the present account the chaotic trajectory, rather than being mysteriously added when the path usage emerges, characterizes the entire CHAOTIC DISPERSAL usage complex from the outset. (See Queller 2001: Figure 2 for a visual representation.)

3. COVERING —→ CHAOTIC DISPERSAL: A socially situated, functionally embodied approach to semantic radial extension.

To account for such semantic innovations, I propose a socially and situationally embodied discourse-based model in which speaker-hearer cooperation in resolving concrete communication problems entails inferencing grounded in assumptions that hearers bring to the interpretation of usage events. An indispensable first step is thus to consider the specific contributions made by hearers to the communicative enterprise.

3.1 Decoding vs. coordination: the hearer’s role in communication

Much psycholinguistic research suggests that language comprehension is a constructive process in its own right, involving types of creative construal and inferencing quite distinct from the processes involved in speaker coding (Bransford and McCarrell 1974; Straight 1986; Cutting 1998). Scholars from Sperber and Wilson (1986) to Fauconnier and Turner (2003) moreover note that the radical underspecification of meaning in linguistic utterances and the corresponding insufficiency of a purely decoding-oriented approach to comprehension require increased attention to the contextualized inferential reasoning that specifically characterizes the interpretation process. Hearer construal is informed by assumptions about contextual relevance and probable speaker intent that channel the interpreter’s constructive process of imputing meaning to an
utterance. Interpreters routinely attribute to utterances contextually influenced extra-compositional meanings that are substantially enriched vis à vis whatever bare-bones compositional meaning might result from a strict reconstruction of the speaker’s solution to the coding problem. Traugott and Dasher (2002) have shown that hearer inferencing based on such contextually enriched interpretation crucially shapes the nature and direction of lexical semantic change.

A socially and situationally embodied alternative that avoids many of the pitfalls of a pure decoding approach may be found in a model of linguistic communication as joint action in the service of solving “coordination problems” (Lewis 1969: 5–8; Clark 1996: 62–65; Croft 2000: 95–115). Given a range of options present in a given situation, a coordination problem confronts participants with the task of deploying shared knowledge and practical intelligence in such a way as to settle jointly on one particular option, to the exclusion of others. In such a framework, linguistic conventions serve as an inventory of devices available for selection and arrangement by speakers, in specific situations and against the backdrop of assumptions about world knowledge and common ground shared with hearers, in order to prompt the latter to construct an interpretation consistent with the speaker’s communicative intent. (One may note how well this "coordination problem" approach to meaning and communication, recently integrated by Croft into a compelling theory of language change, dovetails with Zlatev’s situated embodiment model.)

Crucially, exploitation of linguistic convention in the service of jointly solving a communicative coordination problem does not require hearers to reconstruct a model of the usage event fully equivalent to that assumed by the speaker. At a relatively trivial level, speaker and hearer may have different implicit understandings of the phonological structure of constituent words. For example, a speaker may implicitly construe a nasalized vowel as reflecting conditioning by an adjacent nasal consonant that was not separately articulated, while a hearer reanalyzes the nasalization as an intrinsic feature of the vowel itself (Ohala 1989: 186, Croft 2000: 77). Such differences need not impede coordination with regard to which lexical items are being invoked. More dramatically, the entire morphosyntactic structure of an utterance may be construed in
radically different ways without vitiating coordination around an essentially shared utterance meaning. An utterance like *I’m going to post this letter*, for example, may be construed by a speaker as containing a locomotion verb in present continuous form (*am going*) with a following subordinate infinitival purpose complement (*to post this letter*), and by a hearer as involving instead the main verb *post*... preceded by a grammaticalized pseudoauxiliary future intent marker (*am going to...*). Even on the former construal, as Hopper and Traugott (1993) point out, the very use of such an utterance in the usual sorts of context warrants an inference of future intent. When hearers innovatively impute to such an utterance a linguistic structure in which this inference finds explicit morphological realization, they are thus by no means misconstruing the speaker’s communicative intent. What results is radical reanalysis (by one party) of the linguistic conventions assumed to sanction the usage event, all in the service of successful speaker-hearer coordination regarding its situated meaning (cf. Croft 2000).

Speakers and hearers may also achieve coordination regarding situated meaning of a usage event while differing markedly in their implicit understandings of the meaning of a single lexical constituent. The associated reanalysis involves a degree of radicality in speaker-hearer divergence intermediate between the sorts of phonological and morphosyntactic reanalysis just discussed. A familiar example is the Middle English reanalysis of the word *beads*, originally meaning “prayers”, to mean “small round objects perforated for threading on a string” (Jespersen 1922: 175; Stern 1931: 326, 351; Langacker 1987: 383; McMahon 1994: 177). In the case of utterances like *Don’t bother her right now, she’s telling [counting] her beads* or *This one here is your first Hail Mary bead*, where the word could at one time, in the context of praying the rosary, be taken indifferently as referring either to the prayer itself or to the associated object, communicative success (i.e., coordination around a broadly shared understanding of the usage event’s contextual meaning) in no way depends on speaker and hearer agreeing on one or the other lexical sense for *bead*. Queller (2003) argues that such speaker-hearer discrepancies with regard to situated understanding of lexical meaning may arise routinely in on-line communication, and that the corresponding abductive reanalysis better explains the sense
shift than do alternative accounts based on direct sense-to-sense mapping.

3.2 Emergence of new lexical meanings in discourse: A two-phase model

Discussion of changes like the English *beads* shift in Queller (2003) was restricted to the domain of metonymic extension, the argument being that metonymic sense shift can occur without application of any metonymic operation to the word in question. Abductive reanalysis of lexical meaning is a two-phase process whose point of departure is not an atomistically disembodied lexical meaning, but a richly contextualized, socially situated utterance meaning. First, during on-line speech processing, hearers impute to the relevant sort of usage event a gestalt utterance meaning in which the conventional lexical sense is implicitly replaced by an extracompositionally inferred sense that accords well with context and presumable speaker intent. The clash between the hearers’ implicit lexical sense and the conventional one is unproblematic precisely because it is merely implicitly present within an inferred gestalt utterance meaning. It is only during a second phase (perhaps offline) that the newly implicit lexical sense becomes the focus of linguistic attention. As utterance-level form-meaning pairings like ((She’s telling her beads) / (SHE’S COUNTING HER BEADS – MODERN SENSE)) get analyzed in terms of their implicit compositional lexical semantics, there emerges an innovative word-level form meaning pairing ([beads] / (BEADS – MODERN SENSE)). I refer to this second phase as “semantic backformation,” since it reflects innovation via compositional reanalysis “backwards” from a syntagmatically complex expression, much as in standard morphological backformation (cf. *babysitter* [baby + sitter] → *babysit*), but on the semantic rather than the formal side of the form-meaning dyad. Its output is not a new word, but a new sense for what happens to be an existing word.

This process involves no direct mapping from the conventional word-level form-meaning pair; semantic innovation is crucially mediated by contextualized interpretation of usage events. This distinguishes the
present model from most previous cognitivist accounts of semantic radial extension. To clarify the difference, I propose a new graphemic convention, shown schematically in (6a), and specifically for the *beads* shift in (6b):

(6) a. A $\rightarrow$ B, or A $\rightarrow$ {Utterance type} $\rightarrow$ B  
   b. PRAYERS $\rightarrow$ BEADS, or  
   PRAYERS $\rightarrow$ {She's telling her beads} $\rightarrow$ BEADS

Speaker-hearer discontinuity is iconically represented by the double backslash that interrupts the arrow leading from the conventional to the innovative lexical sense. Optional insertion of an utterance type (with curly brackets indicating that it is one of several relevant types) suggests the sort of usage on the basis of which the reanalysis process may be understood as having operated. Such “link usage” types are characteristically construable as instantiating with full sanction either the conventional or the innovative word sense, without materially affecting the communicative import of the usage event. The process accounts for emergence of new lexical meanings not only in the domain of metonymic extension, but quite generally. Specifically, it permits a socially and functionally embodied account of the emergence of the *CHAOTIC DISPERSAL* usage complex for *over.*

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5 One exception is Warren (1998). Cf. also Tyler and Evans (2003), whose emphasis on the role of what Traugott has called “pragmatic strengthening” of lexical meanings in discourse reflects a socially and situationally embodied approach in some ways consistent with that proposed here.

6 The notion of "link usage" types proposed here is akin to that of "bridging contexts" as articulated by Enfield (2003) and Evans & Wilkins (2000). Thanks to Elizabeth Traugott (p.c.) for bringing this to my attention. Similarities and differences between the two concepts are discussed in Queller (in prep).
3.2.1 Phase one: Link usage types and extracompositional gestalt utterance meanings

The first step is to identify plausible link usage types. Taking a sentence like (7a) as typical for standard COVERING and ones like (7c) as representing MULTIPLEX COVERING, Dewell (1994: 373) notes that (7b) represents a “transitional” type:

(7) a. She poured syrup over the pancakes. [cf. Dewell’s (28)]
    b. She sprinkled water over the plants. [ = Dewell’s (57)]
    c. She scattered seeds over the field. [ = Dewell’s (58)]

All such usages involve dispersal of a liquid or a particulate substance (the Tr) across a surface (the Lm). Given our usual understanding of the type of real-world situation involved (the viscosity of syrup, the properties of pancakes, and the function of one with respect to the other), the action described in (7a) will normally result in continuous coverage of the Lm. Given the discrete, particulate nature of seeds and the size of a typical field, default readings of (7c) will instead involve multiplex coverage. Lexical knowledge of the nature of “sprinkling” and real-world knowledge of how water beads up on leaves yield for (7b) an image intermediate between (7a) and (7c) with respect to Lm coverage.

Again, none of this alone shows emergence of a new sense for over. Dewell’s treatment suggests that a unitary COVERING sense may be retained for over in all the above cases, with inferences about the particular nature of the “covering” prompted both by linguistic context (the nuances of the particular “dispersal” verb) and by encyclopedic knowledge (cf. Tyler & Evans 2003). But the point here is not to justify a new sense; that has already been done in section 2.2, above. The point is to suggest, given the demonstrable emergence of a distinct CHAOTIC DISPERAL sense, what sorts of conventionally sanctioned usage events

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7 Dewell’s reference to a construal operation whereby summary scanning of the Tr serves to link its dispersed parts into a “virtual mass” also anticipates Kreitzer’s (1997) argumentation (2.1 above.).
may have yielded material for the corresponding abductive semantic reanalysis.

To that end, consider potential link usages like that in (7b). Such utterances are construable in two ways, depending on thematic focus. Focusing on the landmark as theme, the utterance can be taken as answering the implicit question “what happened to the plants?” The evident answer is that they ended up covered with water. If one focuses on the trajector, the question instead becomes “What happened to the water?” The answer (inferred from the lexical meaning of *sprinkle* and from our real-world knowledge of how water behaves) is that it got dispersed across the surface of the plants. The first construal, consistent with a conventional **COVERING** sense of *over*, would account for the original appearance of that word in such contexts. The second, consistent with an innovative (**CHAOTIC**) **DISPERSAL** sense, would account for the emergence of such a sense for *over*.

Initially, to be sure, the **DISPERSAL** sense is not explicitly attached to the lexical item *over*. It is an aspect of the gestalt utterance meaning attributed to the usage event as a whole, and is compositionally motivated by the presence of a “dispersal” verb like *sprinkle*. But as Zlatev (2003: 454–459) observes, mappings between lexical items in an utterance and conceptually prominent aspects of a corresponding situation are often not strictly one-to-one. Among the alternative possibilities is that of construing two or more (possibly discontinuous) lexical items within the utterance as exponents of a single conceptual/semantic component of the situation, a relation that Sinha and Kuteva (1995) call “distributed” meaning. In the present case, attribution of thematic prominence to the trajector favors construal of the preposition *over* as signifying dispersal (rather than coverage) with respect to the landmark. The result is an interpretation in which the single semantic notion of dispersal gets distributed over two lexical elements within the utterance: verb and associated preposition. However, a completed process of lexical semantic reanalysis, through which the

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8 All three usage types in (7) can in principle serve as input to the abductive reanalysis here schematized as **COVERING**→**DISPERSAL**.
preposition becomes capable of expressing this sense independently of the verb, depends on a second phase: that of semantic backformation.

3.2.2 Phase two: From gestalt utterance meaning to innovative lexical sense

For an utterance like (7b), implicit construal of the semantic notion of “dispersal” as distributed (in the sense of Sinha & Kuteva 1995) over both the verb and its associated preposition may be represented approximately as in (8b); (8a) represents a more conventional construal, based on compositional analysis of the original semantic contribution of over.

(8) a. \(((\text{She sprinkled } \{\text{the water}\} \text{ over } \{\text{the plants}\}) / (\text{SHE SPRINKLED } \{\text{THE WATER}\} \text{ IN SUCH A WAY THAT IT ENDED UP COVERING THE SURFACE OF } \{\text{THE PLANTS}\}))\)

 b. \(((\text{She sprinkled } \{\text{the water}\} \text{ over } \{\text{the plants}\}) / (\text{SHE SPRINKLED } \{\text{THE WATER}\} \text{ IN SUCH A WAY THAT IT ENDED UP DISPERSED ACROSS THE SURFACE OF } \{\text{THE PLANTS}\}))\)

In (b), the notion reflected by the gloss “…IN SUCH A WAY THAT IT ENDS UP DISPERSED ACROSS THE SURFACE OF…” fits the same slot in a representation of the larger assembly’s meaning as is filled in (8a) by the gloss “…IN SUCH A WAY THAT IT ENDS UP COVERING….” Just as the latter, on a compositional reading, articulates the semantics of over, so likewise (8b) is susceptible to an analysis in which the dispersal trajectory is taken to represent the preposition’s particular semantic contribution.

Such an analysis yields backformation of a new lexical form-meaning pair from a larger, syntactically complex form-meaning pair. Expression of a dispersal trajectory at this point becomes part of the preposition’s inherent usage potential, apart from the associated verb. Though that potential may reside primarily in memory traces of actual usages (what Croft 2000: 99 calls “a lineage of rich, context-specific meanings for which the expression has been used”), schematization over
such wholly or partly remembered usages may yield a more abstract representation, roughly formulated in (9):

\[
(9) \quad \text{[... (all) over LM] / [... (chaotically) dispersed across the surface of the LM]}
\]

It is through such a process, I suggest, that usages like (4) and (5) above, which lack any chaotic dispersal verb and are in some cases actually inconsistent with a “covering” interpretation, become fully sanctioned within the linguistic system.

3.3 The role of functional embodiment in lexical semantic reanalysis

No obvious social or communicative pressure motivates the second, crucial step in abductive lexical semantic reanalysis — that of semantic backformation from gestalt utterance meanings to innovative lexical meanings. Nonetheless, a powerful dynamic may impel language users to match up bits of semantically extracompositional material contained in their gestalt utterance meanings with particular formal constituents of the corresponding utterances. In this section, I endeavor to explicate the nature of this dynamic, suggesting that what is involved is again an aspect of functional embodiment.

Consider Tyler and Evans’ argument against positing the sort of distinct “above-across” sense for over that many analysts (myself

---

9 One might treat the CHAOTIC portion of (CHAOTIC) DISPERSAL as compositionally contributed by the all of (all) over. Support might be adduced from other collocations where a prefixed all... at least reinforces a “chaotic” sense — e.g., all screwed up / all bent out of shape. (Compare, however, instances in which all... reinforces notions of orderliness: all sorted out / all squared away). Provisionally, I suggest that all reinforces the prototypically chaotic nature of dispersal events, but with local variations partly depending on idiomatic entrenchment. See Taylor (2003a: 40–41) for further discussion.

10 The proposed process, whereby semantic elements originally intrinsic to a particular lexical item get "swapped out" in favor of elements originally inhering in the usage context, reflects what Croft (2000:130–134) calls metanalysis. I would in fact suggest that the present model lays the basis for a theory of how and why metanalysis occurs.
included) would claim is instantiated in sentences like *The cat jumped over the wall* (2003: 118). They suggest that assumption of a dynamic “above-across” sense, distinct from the static “above” sense, is based on a “logical fallacy” that has essentially the following structure. (I have however minimally altered the terms of the syllogism so that they refer instead to our link usage type (7b), in a stative / resultative / existential formulation such as *There is {water} all over the {plants}.*)

(10)i. a spatial scene is conceptualized in which {water} is dispersed across the surface of {some plants};
   ii. there is nothing in the sentence, other than *(all) over*, which indicates the trajectory followed by the {water};
   iii. therefore, *(all) over* must prompt for a trajectory involving dispersal across the surface of a landmark.

Tyler and Evans suggest that such reasoning wrongly assumes "that the lack of formal expression coding trajectory information implicates a lack of trajectory information per se. On this view, *all elements that are salient in the interpretation of a scene are encoded linguistically*” (2003: 118; emphasis added). The trajectory information, as they point out, may be derived contextually and constructed on-line; it need not be encoded in any particular formal element of the utterance itself. This is all quite true. Nevertheless, the “logical fallacy” in question has a natural appeal. It is indeed the fallacy that lies at the root of abductive lexical semantic reanalysis. The heuristic can be formulated roughly as in (11):

---

11 Four of the *over* senses that Tyler and Evans accept (by the criteria in (2) above) as separately entrenched in “semantic memory” evidently reflect extensions from such a dynamic spatial “above-across” schema. It is remarkable that they nonetheless rule out entrenchment of the latter. For discussion, see Iwata (2004: 289–292, and the chapter in Queller (in prep) on the OBSTACLE SURMOUNTING usage complex for *over*.

12 Abductive reasoning, in a strictly logical sense, is by nature fallacious. Consider the abductive version of the standard syllogism regarding the mortality of Socrates, in which one starts from an observed result (the fact that Socrates has died) and invokes an apparently relevant general principle (that all men are mortal) to infer what may well therefore be the case (that Socrates was a man). Nothing excludes the possibility that the principle invoked is inapplicable to the case at hand (Socrates may have been a
THE COMPOSITIONALITY ASSUMPTION: Given an utterance meaning for a routine sort of usage event that corresponds well with context and ostensible speaker intent, assume that each element salient within that meaning is linguistically encoded by some formal (lexical, phrasal, constructional) constituent of the utterance.

Such an assumption will tend to favor semantic backformation to new lexical senses especially in cases like (8b) above, where parallelism suggests pairings between particular formal constituents of the utterance and particular elements of its contextually derived, inferentially constructed, extracompositional meaning.

The compositionality assumption is best understood as a natural manifestation of functional embodiment – the expectation of a correspondence between routinely encountered experiences and ways of conceptualizing them, on the one hand, and routine forms of expression, on the other. Semantic backformation is a consequence of this expectation. Consider the present case. Situations in which a liquid or particulate substance escapes from a container and/or from one’s subjective control, dispersing chaotically across the surface of a landmark, are a recurring and salient aspect of our experience. It is thus no accident that a whole series of English verbs, including those in (3) above, should lexicalize the notion of chaotic dispersal. Absent any preposition specifically encoding a dispersal trajectory, speakers can of course prompt for the desired sort of construal by selecting a preposition that prompts for a “covering” construal. But once hearers, routinely interpreting the relevant sort of speech event, have gotten used to constructing gestalt utterance meanings in which the trajectory is appropriately understood as involving not coverage but dispersal, they will naturally tend to reanalyze the preposition as directly encoding a dispersal trajectory.13

13 Typological considerations (à la Talmy 1985) may be relevant. The typical Germanic lexicalization pattern, with manner nuances incorporated into the semantics of the verb...
If the relevant situations are consistently associated with non-topological nuances, moreover, these become part and parcel of the new semantic usage potential. The “chaotic” aspect of the “chaotic dispersal” designation for all over, for example, reflects not just the physical nature of the trajectory, but also the subjective sense (prior to the dispersal event) of a loss of control over the trajector and (following and resulting from it) of a “mess” having been created. Importation of such non-topological, subjective nuances from the functionally salient internalized cognitive model for dispersal events into the lexical semantics of all over (or, equivalently, of constructions like have Tr ... all over {one’s} LM ) helps account for acceptability differences like those in (4) above, as well as for the preference of an expression like have {guilt} written all over {one’s} face for situations involving loss of composure and resulting in an undesired display of affect that was meant to be kept under wraps.

4. Conclusion

The proposed two-stage model of lexical semantic innovation may seem cumbersome compared with one involving direct mapping from one semantic schema to another via image schema transformations and/or figurative extensions. Answering this objection requires deeper exploration into the relations of cognitivist lexical semantics with other linguistic disciplines, including historical linguistics, lexicography, natural language processing (NLP) and language acquisition.

Consider first the issue of goal-directedness in language change. The “mapping” model implies that new senses arise as speakers creatively stretch existing lexical resources to meet new expressive needs. Much diachronic work suggests however that innovation largely results from reanalyses of utterances originally formulated in purely conventional

and much of the work of specifying trajectory assigned to prepositions, may tend to favor construals of collocations like scatter / spatter / sprinkle / dribble... TR all over LM that treat the chaotically dispersed trajectory nuance as uniquely encoded by the preposition.
terms. In the grammaticalization case cited in 3.1, it is unlikely that speakers intentionally extended the meaning of \{am\} going to... in order to convey future intent. Future intent just happens to be a functionally salient aspect of the extracompositional gestalt utterance meanings that hearers naturally attribute to speech events involving continuous-aspect locomotion verbs followed by infinitival purpose clauses; the new pseudo-auxiliary usage emerges as this extracompositional sense becomes explicitly aligned via reanalysis with \{am\} going to.... Although the change results from the goal-directed behavior of language users, it emerges not as intended outcome, but rather as unintended byproduct (cf. Keller 1994). The “hidden hand” behind the change involves no teleology; it involves speakers and hearers simply doing what they ordinarily do while routinely pursuing other goals.

Just as in grammaticalization, each phase in the present model is independently motivated in terms of ordinary language processing and use. The first phase — attribution to speech events of gestalt utterance meanings richer than the compositional sums of their parts — is motivated by the semantic underspecification inherent in utterances, and by the resulting need for inferential meaning construction in the process of speech comprehension. The second phase — backformation of new lexical senses from such gestalt utterance meanings — is motivated by the compositionality assumption (11), itself underwritten, as we have seen, by the principle of functional embodiment. The present two-stage model is thus in a sense simpler than the traditional direct mapping approach. While the latter seeks some specific teleology behind each innovation, the former posits nothing beyond conventional usage on speakers’ part and routine inferencing on hearers’ part.

Consider next the domains of lexicography, NLP and language acquisition. Until recently, one tended to assume that words had denumerable sets of senses, and that the lexicon’s primary task was to specify these accurately. More comprehensive dictionaries, especially if intended for non-native speakers, might add illustrative phrasal usage examples, but these were secondary. As computerized corpora become more central to the lexicographic enterprise, lemmas typically devote proportionally less space to defining senses and more to instantiating usage patterns. Senses are increasingly construable as emergent
generalizations over usage data. This is consistent with a tendency among NLP specialists to eschew traditional top-down processing models involving sense listing and disambiguation in favor of bottom-up models involving “clustering” of corpus data into distinct “contextualization patterns” (Schütze 2000; Kilgarriff 2003; Taylor 2002: 472–474, 2003b). Rather than try to pair input with one of several listed abstract senses, such approaches directly match it against such empirically established usage clusters.

The model is likewise consistent with a usage-based approach to acquisition that no longer takes the primary targets to be word senses (let alone mappings among senses), but rather concrete, lexically entrenched collocational and constructional usage patterns (Tomasello 2000; Nerlich, Todd and Clarke, 2003). For innumerable encoding idioms like \{This paper\} is all over the place and \{The data\} are all over the map, it is insufficient to assign the item one or another lexical sense (Taylor 2003b: 63). These are idiosyncratic routines for talking about poorly organized papers and hard-to-interpret data, respectively, and even correct matching of all over with the Chaotic Dispersal usage cluster cannot account for the fact that these expressions respectively require the complements place and map (as opposed e.g. to field or chart). Schematization over such usage clusters doubtless yields something resembling traditional lexical senses; what seems increasingly doubtful is the notion that it is such senses, rather than the highly specified situational usage patterns for which they are schematic, that essentially constitute the mental lexicon. To put the matter concretely: one can become a competent speaker of English without ever realizing that the above-mentioned encoding idioms and others jointly instantiate a broader Chaotic Dispersal schema for (all) over (let alone that they have a less direct relationship with Covering usages). But the converse is not true; familiarity with higher-level schemas cannot alone assure active control of the particular usages, which must in any case be individually learned.

The upshot may be that the lexicon is essentially a corpus, with lexical senses reflecting secondary, higher-order schematizations over usage clusters. This would explain why native speakers generally find it easier to provide examples of how a word is used than to specify its
meaning(s). It would also explain why polysemy — the existence of multiple senses for a given expression — is more problematic for certain traditional NLP approaches than for ordinary language users (Taylor 2003a, 2003b). Ordinary speech comprehension does not normally involve computing and selecting among all the possible compositional meanings that would result from the various senses of an utterance’s minimal lexical constituents. Entrenchment of collocational and constructional patterns entails direct lexicalization of those aspects of their routine situated use that are most functionally salient. Issues of lexical sense disambiguation rarely arise, since competent users directly access such entrenched usage patterns and their associated meanings.

None of this is shockingly new. The present article's contribution is simply to propose a route for the emergence of new lexical senses that is not only consistent with the emphasis in diachronic linguistics on contextual inferencing and reanalysis, but is also motivated in terms of processes likely to occur independently in the course of communicative problem solving and language processing. The emerging picture may appear to threaten cognitivist advances in the modeling of polysemy — advances grounded in the notion of networks of cognitively linked senses radiating outward from conceptually embodied prototypes. I nonetheless hope to have shown that network models that invoke direct schema-to-schema mapping seriously overestimate the influence of prototype schema semantics on the semantics of extension schemas, while underestimating the role of situated, usage-based inferencing in lexical semantic innovation. The road ahead, I would suggest, will involve carefully rearticulating the implications of conceptual embodiment for cognitive lexical semantics, while elaborating a functionally, socially and situationally embodied model that is even more fully consistent with insights into the nature of lexical meaning that are emerging from cognate linguistic disciplines.
Appendix 1  
Corpus analysis for “chaotic dispersal” all over

I have claimed that a large number of spatial all over usages involve situations that are better characterized in terms of “chaotic dispersal” than in terms of the standard “sectoral coverage” account. The present appendix provides empirical corpus evidence for this claim.

A sample of 100 instances of all over (spoken and written, predominantly the former) was taken from the British National Corpus sampler edition, accessed via ICAME. Using Filemaker Pro, items were sorted into the following categories: Chaotic Dispersal (CD), Sectoral Coverage (SC), Ambiguous, Other Constructions, and Unclear. Criteria for distinguishing CD from SC instances included the particular predicate, trajector and landmark, as well as contextual cues. Ambiguous instances were those that by these criteria might be construed with roughly equal plausibility as belonging to either category. Unclear instances (9 in all) were those that were simply not interpretable with sufficient clarity to allow categorization. Other Constructions (6 instances in all) included 4 Iteratives ({start} all over (again)), and 1 each of Compleitive (“{the game’s} (all) over”) and of the "that's {him} all over!” construction. For present purposes, the Unclear and OC categories were eliminated, leaving a total of 85 clearly spatial uses. For those, the breakdown was as follows:

<table>
<thead>
<tr>
<th>Categories</th>
<th>Instances</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chaotic Dispersal</td>
<td>37</td>
<td>43%</td>
</tr>
<tr>
<td>Sectoral Coverage</td>
<td>27</td>
<td>32%</td>
</tr>
<tr>
<td>Ambiguous</td>
<td>21</td>
<td>25%</td>
</tr>
<tr>
<td>(Total)</td>
<td>85</td>
<td>100%</td>
</tr>
</tbody>
</table>

Following is a breakdown of the 37 CD instances by predicate category, with trajector (TR) and landmark (LM) arguments specified for each instance, separated by a backslash (absence of an explicitly articulated LM is indicated by an X):

<table>
<thead>
<tr>
<th>PREDICATES:</th>
<th>Items:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(there) be</td>
<td>7</td>
</tr>
<tr>
<td>see [that there are]</td>
<td>1</td>
</tr>
<tr>
<td>have/get/got/with</td>
<td>4</td>
</tr>
<tr>
<td>[absolute, no pred.]</td>
<td>2</td>
</tr>
<tr>
<td>piss/pee/wee</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TRAJECTOR /LANDMARK Arguments</th>
</tr>
</thead>
<tbody>
<tr>
<td>food /clothes (x2); chickens /X; bitsoffibreglass /street; hydraulicfluid /carpark; oil /cupboard; fuckingpaper /floor</td>
</tr>
<tr>
<td>lovebites /myneck</td>
</tr>
<tr>
<td>bodilyfluid/sheet; bloodymud /floor; mud /expensive coat; tins /sittingroom</td>
</tr>
<tr>
<td>[lemonade] /table; [mucus] /face</td>
</tr>
<tr>
<td>dog /there; baby /me; baby /yourT-shirt</td>
</tr>
</tbody>
</table>
vomit ("go") 1  I /kitchenfloor
trample (tr & intr) 2  brakefluid/carpet; [people] /cableundercarpet
spill/tip/upset 3  chips /floor; slides /floor; coffee /guests
dribble (intr) 1  dog /me
pour (intr) 1  petrol /forecourt
squirt (intr) 1  hooverdust /mypiggin'leg
spread (tr) 1  printingink /bench
wipe 1  spunk /somebody
drop (tr) 1  earth /floor
fly/go (intr) 2  paper? /theplace; cards /theplace
blow (tr) 1  burningdebris /X
water (intr) 1  [negative imperative] /foliage
run (intr) 1  [negative imperative?] /board
walk 1  thoseinpower /thoseweakerthanthemselves
sit there 1  he /her
climb 1  someone /us

Notable is the wide range of chaotic dispersal verbs (spill, dribble, squirt, etc.), as well as of cases in which the TR is a substance construable as out of place in all but rather restricted contexts (bodily fluids, motor-related fluids, burning debris, vacuum cleaner dust, printing ink, etc.). Many of the LMs involve surfaces (tables, floors, human bodies, body parts or clothing…) that may well not be sectorally covered by the TR, but for which even relatively sparse dispersal of the TR is liable to be construed as creating a considerable mess. Consistent with this are the occasional expletives (fucking, piggin', bloody…) attached to both trajectors and landmarks.

Among the 27 Sectoral Coverage usages, the most striking regularity involves the LMs. 18 (67%) of these explicitly involve a geographical domain (the world, the country, the UK, the island…), while 9 (18%) involve the human body or a specified subdomain of it. If one includes cases of non-specified LM where one of these two categories is nonetheless contextually understood, they comprise almost the whole SC category.

The Ambiguous category is most interesting for the examples it provides of possible link usages. Consider for example the following two:

…Look at those the marks all over the the window! After that man cleaned them didn't he Vicki? Oh! Pity they ca n't do inside as well!…
...next door, but the herb must have come from that No, er Jane spotted cos she said that's where the seed must have come from Yeah she said they seed freely, so we'll have to watch we shall have them all over the garden next year...

Such usages may plausibly be construed in terms of either “sectoral coverage” or “chaotic dispersal”. A speaker may say such things with “coverage” of the LM (the window, the garden) in mind, while a hearer focuses on the “dispersal” of the TR (the marks, the weeds) and the chaotic mess it creates with respect to an LM normally expected to be free of such entities. Functional embodiment in fact suggests that these considerations may figure more prominently in interpretation, since a hearer in the given context will likely be more concerned with them than with the primarily topological relationships implied in the “covering” schema. Note here that the “chaotic dispersal” sense does not bleed over from the predicate, which is neutral (zero in the first case, have in the second), but is simply a function of situation and of encyclopedic knowledge about things like windows and gardens and how people use them.

Of course, both senses are currently available in English. But they weren't always, and the independent “chaotic dispersal” sense of ...all over... argued for in section 2 above emerges historically from the “covering” sense. (For more on this, see Queller, in prep.) Ambiguous contemporary usages, by definition construable in either sense, offer a window on the sorts of link usages that ex hypothesi must have constituted the bridge over which the transition to the new usage cluster occurred. (Many of the corpus usages in the CD category also represent potential link usages, inasmuch as one may still imagine a speaker having formulated them on the basis of the older “covering” schema; cf. discussion of the items in (7), section 3.2.1 above.) Only so, it seems, can we account for the ultimate emergence of usage patterns not adequately explained in terms of the “covering” schema, as discussed in section 2. (For further relevant corpus evidence, see the following appendix.)

APPENDIX 2

Corpus analysis for "...written all over {one's} face..." and (nearly) equivalent expressions in Italian and German

I have claimed above (cf. also Queller 2001) that the English encoding idiom to have {a feeling/thought} written all over one's face shares with numerous other all over expressions a prototypical “chaotic dispersal” sense not directly derivable from the more basic 'covering' sense of the preposition, and glossable roughly as ‘to have signs of {a feeling/thought} chaotically dispersed across one's face (despite one's attempts to maintain a façade of composure).’ I have further suggested that ostensibly equivalent expressions in other languages lack this specific connotation, which must be attributed
to a prototype 'chaotic dispersal' sense inherent in many uses of the prepositional 
expression (all) over. The present appendix offers empirical corpus evidence in support 
of these claims.

A Google web search was done on Dec. 27, 2004 on the phrases "...written all over 
{my/your/his} face..." (roughly 4,560, 8,440 and 10,900 hits, respectively). For each 
pronoun category (my/your/his), the first 20 distinct, interpretable items were selected 
for analysis. (For example, redundant citations of the same song lyric and unclear uses 
of the phrase as a rubric were automatically eliminated. Also eliminated were rare 
instances not instantiating the construction in question, e.g. a reference to a man having 
words physically written all over his face.). Items were categorized as to whether or not 
they reflected a "chaotic dispersal" (CD) context; items that were ambiguous between 
“CD” and “non-CD” were classified as “ambiguous”. In each case, the entity 
functioning as “figure” within the ...all over... expression was identified. For purposes 
of clarity, brevity and cross-item comparability, these were sometimes given glosses 
deviating from the precise wording, which was often lengthy and/or heavily dependent 
on context for interpretation.

In assigning category values, not only was “figure” considered, but also the context. 
Criterial was evidence for an inner state construed as something that the experiencer 
would prefer not be revealed to others. This sometimes meant assigning different 
values in different contexts to essentially the same figure. With reference to one's 
sexual orientation being "written all over one's face," for example, the one case in the 
English sample was classified "CD" because both context and word choice made clear 
that someone's deepest secrets were being revealed against his will (the text involved a 
gay man's memory of being publicly "outed" and hectored in a religion class at the 
conservative bible college he had attended). In contrast, the two references in the 
German corpus to the possibility of discerning sexual orientation from a person's face 
involved neutral contexts and wordings. 14 Though it was tempting to assign these latter 
to the neutral “non-CD” category, I classified them as “ambiguous”, that being 
somewhat less favorable to my hypothesis.

Following are the results of analysis of the English corpus:

14 For example: "Weder kann ich mir vorstellen, dass es dort viele (einheimische und 
aufdringliche) Homosexuelle gibt, noch dass man einem seine sexuelle Ausrichtung 
im Gesicht ansehen kann. Geht ja auch keinen was an!" ["I can't imagine either that 
there are that many (local and importunate) homosexuals there, or that you can tell a 
person's sexual orientation just by looking at their face. It's none of anybody's business, 
anyway!"] http://13313.rapidforum.com/topic=100184128260
...written all over my face...
...written all over your face...
...written all over his face...

<table>
<thead>
<tr>
<th></th>
<th>CD</th>
<th>Ambiguous</th>
<th>Non-CD</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD</td>
<td>15 (75%)</td>
<td>3 (15%)</td>
<td>2 (10%)</td>
</tr>
<tr>
<td>Ambiguous</td>
<td>13 (65%)</td>
<td>5 (25%)</td>
<td>5 (25%)</td>
</tr>
<tr>
<td>Non-CD</td>
<td>10 (50%)</td>
<td>5 (25%)</td>
<td>5 (25%)</td>
</tr>
<tr>
<td>(Total)</td>
<td>20 (100%)</td>
<td>13 (22%)</td>
<td>9 (15%)</td>
</tr>
</tbody>
</table>

“Figure” entities in English corpus ("...written all over your face...") section:

CD: sexual infidelity (x2) / wrongdoing (x2) / a history of being abused (x2) / sexual desire / inability to forget an old lover / resentment while checking out the sexual competition / gang membership / anxiety, dejection, confusion / humiliation / a secret

Ambiguous: love and pain (x2) / disappointment / bigotry / state of health and of inner self

Non-CD: love for one's partner / distinction and sex appeal

Occasionally, a gloss offers direct evidence for the specific “chaotic dispersal” connotations here proposed for the construction:

Idiom: Written all over your face. If someone has done something wrong or secret, but cannot hide it in their expression, it is written all over their face. ...

[italic emphasis added]


Note, for example, the following two song lyric passages, both referring to being hopelessly in love with someone but desperately wanting not to show it:

There's a mask on the wall / That I should be wearin' / To keep you from seein' / How I'm really feelin'. / I'd like to be cool / And tell you goodbye / (I think you'd better run now) / I've been such a fool / And now it's written all over my face / That I'm about to cry. / (Belinda Carlisle, "I Need A Disguise" — home.att.net/~BanglesCom/Xinad.html)

...I wish I could be the girl at his side, / The one who has taken my place, / Can everyone see what I'm trying to hide, / Isn't it written all over my face? / (Nina Simone, "That's Him Over There" — lyricsplayground.com/alpha/songs/t/thatshimoverthere.shtml)
Another lyric contains one of the relatively few instances classified as “non-CD”, there being no clear sense of any desire to conceal the inner state from view:

I love the way you carry you
You have a lot of class and good taste
And you don't have to say how much you care for me
Because it's written all over your face

Rude Boys, "Written All Over Your Face"
http://www.leoslyrics.com/listlyrics.php;jsessionid=6215EACC68F33D95153DF2805AEEA46B?hid=z4cy37ZjW20%3D

Even more clearly devoid of CD connotations is the following comment by a photography instructor:

People don't ask me if I like what I do. It's written all over my face.

www.wpja.org/quotes/index.shtml

(Even here, though, there may be a connotation of "I couldn't hide it, even if I tried.")

Some non-CD cases represent attempts by advertising copy writers to exploit the idiom's expressivity, though with dubious effects, since its “chaotic dispersal” connotations clash with the positive image they are trying to project (cf. discussion in Queller 2001 Appendix 2 of similarly dubious advertising copy uses of the idiom {The data} are all over the map):

"A distinguished and intriguing appeal will be written all over your face in these Donna Karen [sunglasses]"
www.bizrate.com/buy/products_att259--256255-,cat_id--10070000.html

One might argue that the general preference of this English idiom for “chaotic dispersal” contexts results not from its intrinsic semantics, but rather from a general human tendency, when talking about inner states being visible on people's faces, to focus on situations experienced as uncomfortable or chaotic. If this were so, then the “chaotic dispersal” connotations here argued to be part of the expression's semantics would be better understood as mere artifacts of the contexts in which people happen to use the expression; it would accordingly be sufficient to posit only the basic “covering” sense for (all) over. Such an argument further entails that expressions in other languages that refer to inner feelings or thoughts being visible on someone's face should show a similar (nonlinguistic) propensity for “chaotic dispersal” contexts.

I would suggest that the latter entailment is false, and that this invalidates the counterargument in question. To test this, comparable corpora were collected for the
Italian expression \{gli} si leggeva in faccia \{lo stupore\} [literally: "{to-him} one read in face {the amazement}"] and the German expression \{man konnte\} (ihm) \{die Verwunderung\} im Gesicht ansehen [literally: "{one could} {to-him} {the amazement} in-the face see"]. On Jan. 3, 2005, using the same selection and classification criteria as for the English corpus, the first 20 distinct, interpretable instances were collected and analyzed for "...si leggeva in faccia..." and "...im Gesicht ansehen..." [about 399 and 189 total hits, respectively]. The results are as follows:

<table>
<thead>
<tr>
<th></th>
<th>ITALIAN:</th>
<th>GERMAN:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>...si leggeva in faccia...</td>
<td>...im Gesicht ansehen...</td>
</tr>
<tr>
<td>CD</td>
<td>3 (15%)</td>
<td>2 (10%)</td>
</tr>
<tr>
<td>Ambiguous</td>
<td>9 (45%)</td>
<td>6 (30%)</td>
</tr>
<tr>
<td>Non-CD</td>
<td>8 (40%)</td>
<td>12 (60%)</td>
</tr>
<tr>
<td>(Total)</td>
<td>20 (100%)</td>
<td>20 (100%)</td>
</tr>
</tbody>
</table>

“Figure” entities in Italian corpus ("...{gli} si leggeva in faccia..."):  

**CD**: loss of interest in sexual partner / worry (that narrator might beg money or mug him) / unease over boyfriends internet porn habit (discovered by snooping on his computer)  

**Ambiguous**: tension / unease / preoccupation / suffering / disbelief / hope / an ostensibly mutual erotic interest / an identity crisis / a need for help  

**Non-CD**: happiness (x2) / goodness of character / athletic character / optimism / reminiscence / rage / evaluation of someone as mentally unhinged

“Figure” entities in German corpus ("...{ihm} im Gesicht ansehen..."):  

**CD**: sexual infidelity / dislike (of one's dancing partner)  

**Ambiguous**: sexual orientation (x2) / physical strain / fear (of losing a game) / cocaine addiction / a high opinion of oneself

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15 Far more common (about 35,100 hits) is the expression \{die Verwunderung\} stand {ihm} ins Gesicht geschrieben ["{the amazement} stood {to-him} into-the face written"]. Analysis of results from a Google search on May 19 2005 on the phrase "ins Gesicht geschrieben" yielded the following breakdown: CD: 3 / ambig: 9 / non-CD: 8.
Non-CD: joy (x2) / physical strain (x2) / stupidity or intellectual slowness (x2) / relief / eager anticipation / mood and state of health / evaluation of so. as inept / dislike of a task / pain (in a horse's face)

Here is a typical “non-CD” example for each language:

*Il generale guardava il sergente con gli occhi fissi e la bocca aperta. Gli si leggeva in faccia un pensiero preciso: "Hanno proprio ragione, è completamente matto!" [The general stared, open-mouthed, at the sergeant. One could read in his face exactly what he was thinking: "They're right, he's completely out of his mind!"]*

http://icsrobilante.scuole.piemonte.it/SCUOLE/elementari/ele_ROBIL/PROGETTI/pace/pace_rc.htm

*Die Skipper im Hafen schüttelten nur die Köpfe über uns, als wir einliefen! In ihren Augen einfach unverantwortlich! Sie mussten uns wohl für ganz unerfahrene Skipper halten. Bei so einem Wetter fährt man doch auch nicht! Man konnte es ihnen im Gesicht ansehen, was sie dachten. [The skippers in the harbor just shook their heads over us as we were docking. Utterly irresponsible, in their view! They must have taken us for total rookies. Going out in weather like this — it's just not done! You could see from their faces what they were thinking.]*

http://www.board-server.de/cgi-bin/foren/F_1361/forum.pl?forum=29&thread=69

Both cases involve one party's negative evaluation of another party's judgment or mental capacity. Context suggests that the evaluators have no interest whatsoever in hiding their reactions. In the first case, distinctions of military rank make it unnecessary for the general to do so; nor does the description of his facial expression suggest any struggle to maintain a façade. Likewise, in the German example, there is no hint of concealment. The ostentatious head-shaking, far from reflecting a failed attempt to hide feelings, likely functions as a communicative gesture, signaling the evaluators' presumption of superior knowledge (*Besserwisserei*) and their open disdain for the "rookie" fishermen they are observing.

Though it is not strictly wrong to translate such usages by saying that the evaluators' thoughts are "written all over their faces," some native English speakers (myself included) feel that such a rendition imports connotations not present in the original. More important than such subjective reactions, however, is the English construction's strong (though not absolute) statistical preference for "chaotic dispersal" contexts, in contrast to (nearly) equivalent expressions in other languages which show little or no such skewing. I argue that this skewing is ultimately explainable only with reference to the specific semantics of "chaotic dispersal" inherent not only in this English expression, but also in a wide range of other expressions using *all over.*
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