Structure within Morphemic Meaning

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Abstract

The entire conceptual content represented by a single morpheme—its plenary meaning—is in general both copious and structured. This structuring consists of both the patterning of its content and the distribution of attention over that pattern. With respect to the patterning of its content, a morpheme's plenary meaning can be divided into a core meaning and an associated meaning. In turn, its associated meaning can be subdivided into five sectors: the holistic, infrastructure, collateral, disposition, and attitude sectors. And with respect to its distribution of attention, eight specific attentional factors and three general attentional principles are cited. The main attentional factor is that a morpheme's core meaning is generally more salient than its associated meaning or any of the sectors therein. But another attentional factor holds that the attitude sector, especially its expletivity type, can challenge or exceed the core meaning in salience.

Keywords
morphemic meaning, frame semantics, core meaning, associated meaning, attention, salience, semantic structure, cognitive semantics

1 Introduction

This study lies directly within the central concern of cognitive semantics: how language structures conceptual content. In particular, it addresses the structure of the meaning represented by single morphemes. Linguistic research in this area has been somewhat limited, mainly analyzing out the semantic components that make up a single morpheme's core meaning. But the entire conceptual content represented by a morpheme—what is here called its **plenary meaning—**typically ranges well beyond this core. The present study may be the first with an extended proposal for how such an entirety of morphemic content might be structured.

Language employs a certain range of conceptual structuring mechanisms. One major mechanism, **content patterning**, is the division of the continuum of conceptual content into particular categories or portions, as well as the interrelationships and distribution that these have (Talmy, forthcoming). The distribution can occur over different domains and scopes, for example, over an expression, across different morphemes of the lexicon, or within a morpheme—the last of these being the one addressed here. The plenary meaning of a morpheme, we propose, can first be divided into two main categories, with the second category then subdivided into at least five subcategories, all bearing particular relations to each other.

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Another major conceptual structuring mechanism in language is that provided by closed-class forms, that is, by grammar. This grammatical structuring of conceptual content can be divided into qualitatively distinct branches termed **schematic systems** by Talmy (2000a), which examined four of them: configurational structure, force dynamics, perspective, and attention. This last schematic system consists of the stratification and distribution of attention: the patterns in which greater or lesser degrees of attention are allocated to different portions of conceptual content. The schematic systems also apply over different domains and scopes. But attention appears to be the only one of the four that also reaches inside the semantics of a morpheme, where it applies across the divisions there.

To examine structure within morphemic meaning, accordingly, this study combines the two conceptual structuring systems most relevant to the individual morpheme, that of content patterning and that of attention. In doing so, it aims to advance linguistic theory in two ways. First, it aims to extend earlier treatments of morphemic meaning by providing an in part new and in part finer-grained analysis of it. Second, it aims to add to an analysis of how attention functions in language by examining its properties within morphemic meaning.

Outlines of morphemic meaning and attention relevant to this study are presented respectively in the next two subsections, while the methodology used is presented in the third.

1.1 *Morphemic Meaning in Outline*

The entire conceptual content represented by a morpheme—its plenary meaning—is in general copious and structured. Fillmore (see section 1.1.4 for references) may have been the first to directly address this dual nature of morphemic meaning. He termed this aspect of language organization **frame semantics** and termed any particular morpheme's structured conceptual content its **semantic frame**. These terms will be freely used in this study, serving as alternatives to our "structure within morphemic meaning" (or variations thereof). The characteristics of frame semantics generally relevant in this study are presented in the following subsections of 1.1.

1.1.1 A Morpheme's Core and Associated Meaning

The plenary meaning of perhaps every morpheme can be approximately divided at the broadest granularity into two major portions. These are its **core meaning** and its **associated meaning**. The former will also be referred to below as a "core concept" or "core reference" according to the context, while an entity outside the morpheme to which its core meaning refers will be its "core referent". This broad distinction, it is understood, is in part fuzzy and gradient.

To characterize the parts of this broad distinction, a morpheme's core meaning constitutes the central direct portion of its plenary meaning—its chief referential import and what mainly appears in a language user's consciousness on hearing the morpheme in isolation.

In turn, a morpheme's associated meaning consists of a conceptual periphery that extends out indefinitely from the core meaning. In its semantic character, this conceptual periphery elaborates on but is only supplemental to the core meaning. Its addition to the core meaning fills out what is often referred to as a morpheme's "encyclopedic meaning" (a term introduced by Haiman, 1980).

1.1.2 Five Sectors within the Associated Meaning

This study contrasts the conceptual content and salience of a morpheme's core meaning with that of its associated meaning. More specifically, the contrast is with that of each "sector" within the associated

meaning. Five different sectors are here proposed to occur there. These sectors are not assumed to be exhaustive—in fact, two additional sectors are suggested in section 6. And they are intended to be heuristic, without definitive boundaries between them. Still, these sectors are largely taken to be qualitatively distinct from each other and to represent a structural partitioning within the associated meaning of morphemes. The five sectors are next briefly characterized and related to the core meaning—illustrated with snapshots of examples detailed later.

The **holistic sector** is the larger conceptual whole that a morpheme's core meaning is necessarily a part of. For example, the core meaning of the verb *buy* most directly represents a buyer's acquisition of certain goods. But the verb's holistic sector represents the whole commercial transaction—including the transfer of goods from the seller to the buyer and of money from the buyer to the seller—of which that acquisition is only a part.

The **infrastructure sector** is a conceptual underpinning that the core meaning presupposes but is not wholly determined by. For example, the core meaning of the noun *heaven* most directly represents a luminous space near God. But it rests on an infrastructure of particular beliefs about divinity, soul, afterlife, goodness, and reward vs. punishment.

The **collateral sector** adds concepts commonly associated with the core meaning but incidental to it. For example, the core meaning of the noun *bucket* represents a roughly cylindrical tapered foot-high and wide object with an open top spanned by a handle. And its collateral sector represents the commonly associated function of using the object to convey material placed in it. But that association is only ancillary, suspended when referring, say, to a gold bucket sitting on a pedestal as an art exhibit.

The **disposition sector** comprises the aspects of a morpheme's meaning that arise from its grammatical properties. For example, the core meaning of the Spanish noun *puente* is the concept of an inanimate bridge. But its grammatical masculine gender can induce a penumbra of concepts of maleness in its disposition sector.

And the **attitude sector** mainly consists of speaker attitudes pertaining to the morpheme or its use. For example, the core meaning of the adjective *paltry* is the concept 'small in amount'. But its attitude sector represents a disparaging attitude by the speaker toward that smallness.

After this introduction, these five sectors within a morpheme's associated meaning are treated in separate sections in the order just listed. In this order, further, they decrease in strength along two parameters. First, they decrease progressively along a parameter of **necessity** to the morpheme's core meaning, from being the most indispensable to it to being the most nonessential to it. For example, the concept of an entire commercial exchange is necessary for the specific concept of buying—concepts represented respectively in the holistic sector and the core meaning of the morpheme *buy*. But the concept of disparagement is not necessary for the concept of smallness—concepts represented respectively in the attitude sector and core meaning of the morpheme *paltry*.

Second, the sectors show a decrease along a parameter of **thematic relatedness** to the core meaning. This parameter is based on the degree to which an associated concept is connected to a core concept along a chain of linkages within the likely general knowledge store of a language user (see "further-knowledge level" in Talmy, 2018a, section 1.6.1). Thematic relatedness is high in the first three sectors, while thematic independence is first clearly evident within the disposition sector and is in full force through the attitude sector. For example, a full commercial exchange has a strong thematic relation to an act of buying, but an attitude of disparagement is thematically unrelated to smallness.

The distinctions introduced in this section are shown in outline format in (1).

(1) Outline of a morpheme's frame semantics

1.1.3 Core and Sector Sharing

Distinct morphemes, or distinct senses of a single polysemous morpheme, can have the same core meaning but have different conceptual contents within a particular sector. This circumstance will be called **core sharing**. For a snapshot example again, the verbs *study* and *learn* share a core meaning representing a cumulative acquisition of knowledge, but their disposition sectors differ with regard to their semantic aspect, respectively an atelic activity and a telic accomplishment.

Conversely, distinct morphemes or senses can have the same content in a particular sector but have different core meanings. This circumstance will be called **sector sharing**. For example, the morphemes *wife* and *husband* share the same holistic sector representing a married couple, but differ in foregrounding distinct portions of that whole in their respective core meanings.

For two further terms, sharing by distinct morphemes shows a **cross-form** pattern, while sharing by polysemous senses shows a **same-form** pattern. To illustrate with sector sharing of the holistic sector, *sell* and *buy* exhibit a cross-form pattern, but (for a landlord to) *rent* and (for a tenant to) *rent* exhibit a same-form pattern.

1.1.4 This Examination of Morphemic Meaning in Context

The examination of morphemic meaning here can be placed in context from earlier to later work. Our distinction between the core and associated meaning of a morpheme has a partial early antecedent in the traditional distinction between denotation and connotation (e.g., Saussure, 1959, Hjelmslev, 1953). But it has a more recent and direct connection with the frame semantics of Fillmore (1976, 1982), as well as with the development of that into FrameNet, e.g., Fillmore (2007, 2014), Fillmore and Baker (2010). This body of work takes the plenary meaning of a morpheme as its object of analysis and includes a form of our distinction between core and associated meaning.

What is new in the present study is that it analyzes the associated meaning of morphemes more granularly—partitioning it into five sectors and addressing multiple considerations within each sector—as well as providing an analysis of the allocation of attention between the core and these divisions.

1.2 *Attention in Outline*

A distinctive feature of this study is its emphasis on the role of attention within morphemic meaning. Accordingly, we here expand at some length on this role.

1.2.1 Narrowing down to the Relevant Scope of Attention

We begin by characterizing attention at its broadest scope and then narrowing down to the scope relevant to this study. Within the nervous system of a sentient individual, attention is here taken to be the

operation of a specialized cognitive system that can selectively establish a connectionat a certain degree of strength with another cognitive phenomenon, and apply certain types of processing to it.

Two aspects of this formulation can be expanded on. First, the types of processing performed by attention can cover a range of effects. Primary effects include rendering the selected phenomenon more individuated (less blended in), more clear or distinct (less vague or murky), more detailed (less coarse-grained), and more potentially relevant to the individual (less ordinary or unimportant). Secondary effects might include rendering the phenomenon subsequently more accessible to memory and more readily recognized among alternatives.

Second, attention is here taken not as a discrete all-or-none system but rather as a gradient able to operate at different degrees of strength. In (2), we present a set of expressions that indicate attention at different degrees of strength. These expressions are here judged to be basically equivalent in their reference (though the inclusion of (2c) in this set may be more controversial).

(2) S = the sentient individual , P = the phenomenon

a. More / Less of S's attention is on P.
b. P is higher / lower in S's attention.
c. P is more central / peripheral in S's consciousness.
d. P is more / less salient to S.
e. P is more foregrounded / backgrounded for S.
f. S experiences P more strongly / weakly.

Overall, attention increases the individual's capacity to apprehend the phenomenon and its attributes. The greater the strength of the attention, the greater the effect of the processing.

Consideration of the attention system can next be narrowed to a second scope, its operation in human language, another cognitive system. Within this smaller scope, different degrees of attention can selectively connect with different types of linguistic units and aspects of those units.

And with a final narrowing down to the smallest scope, The attention system is here considered only for its assignment of different degrees of strength to the structural divisions within the conceptual content associated with an individual morpheme.

1.2.2 Attentional Factors and Principles

The patterns that linguistic attention exhibits at the second scope can largely be characterized in the form of factors and principles.

Attentional Factors. Specific properties of attention as it is structured and functions in language are here called attentional **factors**. Some thirty such factors are identified in Talmy (2007b) and eight in the present study.[2.]

Attentional factors can be analyzed into a certain number of types that together form a taxonomy, but only a portion of that is represented here. For one thing, all the factors here are in the comparative class, those that compare degrees of attentional strength. In particular, they compare the degrees of strength either of different linguistic elements in the same venue or of the same linguistic element in different venues. Respectively, these are called **same-venue factors** and **cross-venue factors**.

[2] The larger number of factors in Talmy (2007b) are identified by alphanumeric triplets like "Ca2" that indicate their conceptual area and subarea. But the smaller number of factors here are simply numbered 1 through 8.

Since the elements compared by a same-venue factor are co-present, the degrees of salience they have can be directly contrasted. But for elements compared by a cross-venue factor, one can contrast their degrees of salience only at different points of time, for example through the memory of a previous element and the experience of a current one.

For a further distinction, a factor that compares the salience of two linguistic elements is **dichotomous**, while one comparing that of three or more elements is **hierarchical**.

A dichotomous same-venue comparative factor, then, has the form shown in (3a), while a dichotomous cross-venue comparative factor has the form in (3b).

(3) a. dichotomous same-venue comparative factor
element-type X is more salient than element-type Y in venue A.
b. dichotomous cross-venue comparative factor
element-type X is more salient in venue A than in venue B.

To illustrate, an example of dichotomous same-venue comparison is the attentional factor that the meaning of a morpheme is generally more salient than its form. For instance, the morpheme *egg*, as in *The egg broke*, tends to evoke greater speaker or hearer attention on its reference to an ovoid shell containing yolk and white than on its phonological shape beginning with the phoneme /ɛ/ and ending with the phoneme /g/. With respect to (3a), venue A here is the morpheme, while element-type X is the morpheme's meaning and element-type Y is the morpheme's form. The salience of both element-types can be compared at once with a single utterance of the morpheme.

And an example of dichotomous cross-venue comparison is the attentional factor that a concept is more salient when expressed by an open-class form than when expressed by a closed-class form. For instance, the concept 'relative past' is more salient when expressed by the open-class adjective *previous* than by the closed-class suffix *-ed*—and the same holds for the concept 'relative future' when expressed by the adjective *upcoming* versus the suffix *-s*—as seen in (4). With respect to (3b), element-type X is the concept, while venue A is an open-class form and venue B is a closed-class form. The salience of the element-type in the two different venues can be compared only through a sequential procedure that considers each venue in turn.

(4) I can imagine good weather at the airport ...
a. on his previous / upcoming arrival. b. when he arrived / arrives.

Attentional Principles. The specific attentional factors, of which there is a relatively sizable number, fall under a smaller number of more general attentional **principles**. Such principles can compare different degrees of salience, but these are now the salience degrees of more pervasive broader-scale phenomena in language.

We can illustrate using the earlier same-venue factor holding that a morpheme's meaning is more salient than its form. This factor is an instance of the general attentional principle of **significance**, which holds that greater significance is more salient than lesser significance. To characterize significance in turn, a phenomenon is significant to an individual to the degree that it is classed in her cognition as potentially impacting her current interests or well-being. And a morpheme's meaning is generally more significant than its form to an individual whose current interest is in communication.

Three such general attentional principles are cited in this study—those of significance, presence, and norm divergence.

1.2.3 The Main Attentional Factor and Principle for Morphemic Meaning

Within the third and smallest scope of attention—linguistic attention within morphemic meaning—one of the eight attentional factors and one of the three attentional principles cited here pertain to most of the analysis and so are described here.

The Attentional Factor that Weights Core over Associated Meaning. One attentional factor, here designated as factor 1—a factor of the dichotomous same-venue comparative type—holds most generally. Though we propose it as a single factor, it has three different scopes of application. This factor holds that the core meaning of a morpheme is more salient than the associated meaning as a whole, than any of the five sectors considered alone, or than any portion of a particular sector. The only competition to this factor may be provided by the attitude sector, especially by its expletivity type, as captured by factor 8 in section 6.6.

Factor 1 is of the dichotomous comparative type because, with regard to salience, it contrasts the core meaning of a morpheme with one other portion of that morpheme's plenary meaning. And it is of the same-venue type because the two contrasted portions of meaning are presented at once by the same single morpheme.

For another snapshot example detailed later, the core meaning of the adverb *east* in its global directional sense, as in *We're flying east now*, most directly represents a path counterclockwise along a line of latitude. This concept in turn rests on an infrastructure sector with the conception that the earth is a sphere spinning about an axis that defines two poles connected by lines of longitude, themselves with transverse lines of latitude. But this morpheme's core reference to the specific path is more salient than its infrastructural conception of a transected dynamic earth.

The cross-venue factor corresponding to factor 1 is just as pervasive but has less import for morphemic meaning and so is cited less systematically. This "factor 2"—another dichotomous comparative factor—holds that any given concept will be more salient when represented in the core meaning of one morpheme than in the associated meaning of a different morpheme.

We can illustrate with the concept of a line of longitude. This concept is evidently more salient when represented in the core meaning of the morpheme *meridian* than solely in the infrastructure sector of the morpheme *east*.

The Attentional Principle of Significance. Both attentional factors 1 and 2—which alike allocate more attention to the core than to the associated meaning of a morpheme—can be taken as particular realizations of the general attentional principle of significance (see section 1.2.2). A morpheme's core meaning has more significance than the associated meaning because it has more impact on the speaker's and hearer's interest in the communication of conceptual content. In general, where two related entities differ in significance, the entity with greater significance is more salient than the one with less. These two entities, further, can then be designated respectively as "main" and "ancillary"—or, in radial terms, as "central" and "peripheral", or in ordinal terms as "primary" and "secondary". A core meaning is thus more salient than an associated meaning and relates to it as main to ancillary.

1.2.4 Volition and Attention

Under a 2-valued parameter of **volition**, the deployment of attention in frame semantics is voluntary for the speaker but involuntary for the hearer. The speaker controls her language's attentional factors. She can choose to employ one of them with the aim of either foregrounding a particular X or backgrounding a particular Y. But the hearer perceives the speaker's utterance with its selected factors already implemented. These factors directly affect his allocation of attention.[3]

We can illustrate with yet another factor, one holding that the whole of a morpheme's meaning as a Gestalt is more salient than the component concepts making up that meaning. Thus, a speaker can voluntarily foreground the Gestalt of 'eating' while backgrounding its component concepts by using the verb *eat*, as in (5a), whereas she can foreground those component concepts by referring to them individually, as in (5b). But the hearer is involuntary in assigning greater salience to the Gestalt meaning of *eat* than to its component concepts on hearing (5a), and greater salience to those very component concepts on hearing (5b).

(5) a. I ate the piece of meat. b. I chewed and then swallowed the piece of meat.

1.2.5 This Examination of Attention in Context

The examination of linguistic attention here can be placed in context from general to specific. To begin with, the overall linguistic framework this study is set in is that of cognitive semantics, as put forth in Talmy (2000a, 2000b, 2011, Forthcoming).

Within cognitive semantics, as noted, attention is one of four schematic systems examined in Talmy (2000a) that structure conceptual content.

Much previous linguistic work by others has involved attention, though in some cases more implicitly than explicitly. Work of this kind based on traditional linguistic methodology may be known under terms like topic and focus (e.g., Lambrecht, 1994), activation (e.g., Givon, 1990; Chafe, 1994), prototype theory (e.g., Lakoff, 1987), highlight and frame (e.g., Fillmore, 1976), profile and base (e.g., Langacker, 1987), deictic center (e.g., Zubin and Hewitt, 1995) attention in morphology (Lampert, 2009), and attention in force dynamics (Lampert and Lampert, 2013).

In addition, work on attention in language based partly or mainly on experimental psycholinguistics has included Tomlin (1995), Tomlin & Myachykov (2015), Myachykov et al (2011), Chiarcos et al (2011), Mishra (2015), Blumenthal-Dramé et al. (2017), Divjak (2019), von Heusinger & Schumacher (2019), and Szczesniak (Forthcoming).

My own research on attention in language has included: the foregrounding vs. backgrounding of concepts expressed by open- vs. closed-class forms (Talmy, 2000a chapter 1); local vs. global scope of attention on a scene (Talmy, 2000a, chapter 1); attention directed to one or another level of exemplarity / baseline / particularity / synthesis (Talmy, 2000a chapter 1); the sweep of focal attention in fictive motion (Talmy, 2000a chapter 2); the foregrounding vs. backgrounding of included vs. omitted constituents in the windowing of attention (Talmy, 2000a chapter 4); the foregrounding vs. backgrounding of Figure vs. Ground (Talmy, 2000a chapter 5); the foregrounding vs. backgrounding of a proposition expressed by a main vs. subordinate clause (Talmy, 2000a chapter 6); greater vs. lesser attention on the Agonist vs. Antagonist of a force-dynamic opposition (Talmy, 2000a chapter 7); the foregrounding vs. backgrounding of a concept expressed by a noun vs. verb (Talmy, 2000b chapter 1); conscious vs. unconscious processes in cultural acquisition, manifestation, and imparting (Talmy, 2000b, chapter 7); attentional differences

[3] Beyond this baseline of involuntary attentional allocation, the hearer can of course voluntarily direct his attention to other aspects of the speaker's utterance.

between spoken and signed language (Talmy, 2003, 2018b); The language-vision overlap in attentional structure (Talmy, 2015); and the joint attention on a target that a speaker recruits in a hearer in deixis and anaphora (Talmy, 2018a).

One further contribution titled *Attention phenomena* (Talmy, 2007b) may be the first to develop a framework within which to place the range of findings about linguistic attention, or indeed to attribute such findings to the same single cognitive system of attention. Included in that paper are some thirty attentional factors grouped into eight categories. In particular, factor Ac1 there holds that, within a morpheme's total reference, more attention goes to (as termed there) the direct than to the associated concepts of that reference. This is the main attentional factor that applies to frame semantics. The present study can thus be seen as pertaining to one specific location on a grid that partitions linguistic attention, though it elaborates extensively on the attentional properties relevant to that grid location.

1.3 *Methodology*

The analytic framework and specific positions on attention that this study proposes have been based mainly on the methodology of linguistic metacognition—the use of introspective access to language. An instance of this method was seen earlier under the factor that a morpheme's meaning is more salient than its form. The claim there that the reference of *egg* to a shell with yolk and white is more salient than its /ɛg/ phonological shape was reached through metacognitive observation.

The profile of this metacognitive methodology, what it is better or worse at, has determined the types of proposals offered. For instance, it is more within the scope of metacognitive capability to compare the salience of different linguistic elements than, say, to rank the salience of an individual linguistic element on an absolute scale. Thus it is that the attentional proposals provided in this study are in the form of comparative factors.

This use of a metacognitive methodology in turn serves as a call for corroboration or emendation by complementary methodologies such as psycholinguistic experimentation, neuroscientific techniques, corpus research, and computer modeling. (Talmy, 2000b contrasts the profiles of such methodologies).

2 Core Meaning and Holistic Sector

The first structural division of a morpheme's associated meaning addressed here is the holistic sector. Because this sector rests on it, we start by characterizing the notion of a hierarchy. A hierarchy consists of discrete, potentially multiple, levels that can be ranked from more subordinate to more superordinate. Looking within language, we can distinguish at least four types of hierarchies in which two distinct morphemes within a lexicon occupy different levels. Labeled and exemplified with the more subordinate level first and the more superordinate second, these four types are a) the part-whole hierarchy, e.g., *petal* and *flower*; b) the member-category hierarchy, e.g., *Chicago* and *city*; c) the hyponym-hypernym hierarchy, e.g., *dog* and *mammal*; and d) the analytic-synthetic hierarchy, e.g., *two* and *pair*.[4]

But one of these hierarchies, the part-whole type, can also be found within a single morpheme, between its core meaning and one sector of its associated meaning, namely, the holistic sector. These two

[4] The (c)-type of hierarchy might alternatively be labeled "subcategory-category". Then the distinction between the (b) "member-category" type and the (c) "subcategory-category" type might be sharpened by using the same morpheme for the category in both instances, as in (i). In (ia), *Lassie* refers to a single unique individual while, in (ib), *dog* can refer to any of an indefinite number of different individuals.

(i) a. Lassie is a mammal. b A dog is a mammal.

portions of a morpheme's plenary meaning, further, occupy two adjacent levels immediately subordinate and superordinate to each other. Thus, the core meaning of such a morpheme consists of the subordinate concept serving as a part, while the holistic sector consists of the immediately superordinate conceptual complex serving as the whole. Put another way, the kind of morpheme addressed here is lexicalized to indicate that the relation of its core meaning to its holistic sector is that of a part to an immediate whole.

As just noted, the "whole" that constitutes the holistic sector is a conceptual complex—that is, a set of component concepts in a particular pattern—and, for emphasis on this makeup, will at times be referred to as a "composite whole". The part of this whole that is within the core meaning consists of a certain subset of those component concepts. A morpheme of this type has had traditional linguistic recognition under the terms "partonym" or "meronym" (e.g., Cruse, 1979; L.M. Murphy, 2007), though not necessarily under an analysis like the one offered here.

In terms of attentional structure, a partonym foregrounds one particular part of a certain composite whole, referring to it directly as its core meaning. And it backgrounds that whole, representing it within its associated meaning, there to comprise the holistic sector. When particularized for the present subarea, factor 1 holds that the core meaning of such a morpheme is more salient than its holistic sector or any other part thereof. More specifically, it holds that the part represented in the core meaning is more salient than the composite whole represented in the holistic sector, than the remainder within that whole, or than any subportion of that remainder.[5]

By an alternative approach not adopted here, a morpheme's holistic sector contains not the whole but only the remainder of it outside the part focused on in the core. In these two approaches, respectively, a morpheme's core meaning thus has a part-whole and a part-remainder relation to its holistic sector. Either way, though, factor 1 still applies: the core meaning of a morpheme is more salient than its holistic sector.

The treatment presented here for the core and holistic sector of a morpheme's meaning accords in some respects with certain earlier treatments. Both Fillmore's (1976) term "frame" and Langacker's (1987) term "base" refer to a larger conceptual complex that a morpheme more generally represents, much like our holistic sector. Both Fillmore's term "highlight" and Langacker's term "profile" refer to the part of that larger conceptual complex that the morpheme focuses on to represent directly, much like our core meaning. And both indicate an attentional difference—a greater salience of the highlight over the frame and of the profile over the base—much as with our attentional factor 1. The contribution made by the present analysis is that it extends the earlier ones by elaborating on the part-whole relation that a morpheme can express and by placing this relation beside four others, as well as by systematizing their attentional allocations.

2.1 *Background*

We here first address certain further properties of partonyms and non-partonyms due to their import to the analysis of morphemic meaning below.

2.1.1 Relational vs. Autonomous Morphemes

[5] It may seem contradictory that a portion can be more salient than a whole which includes that portion. Our analysis resolves this issue, though, by holding that that portion is not intrinsically salient within the whole and only acquires its salience through the focusing of attention on it in the core.

The core reference of a partonym is conceptualized as being dependent, that is, as a phenomenon necessarily in particular relationships with certain other phenomena outside itself. When emphasizing this property, we will use another traditional term effectively equivalent to partonym, **relational morpheme**.

Complementarily, the core reference of a non-partonym is conceptualized as being independent, that is, as a self-subsistent phenomenon without necessary relations to phenomena outside itself. When emphasizing this property, we will call a non-partonym an **autonomous morpheme**.[6]

Autonomous morphemes are highly restricted in their lexical type. By one analysis, they all belong to a certain subcategory of nouns. By another analysis, though, autonomous verbs can also occur. One example might be the English verb *rain*, which can be glossed as 'for water drops to fall from a cloud down to the ground', a self-subsistent event.[7]

Accordingly, all other types of morphemes are relational. Under the first analysis, these types include nouns outside the autonomous subcategory and morphemes in non-noun lexical categories. For examples of the latter, the core meaning of a verb like English *fall*, as in *The leaf fell*, refers directly to a process that is necessarily part of a larger composite whole represented in the verb's holistic sector. This whole must also include an entity— itself generally specified separately (as here the leaf)—that manifests the process. Comparably, the core meaning of an adjective like *blue*, as in *a blue hat*, refers directly to a particular quality, but only as part of a larger whole, represented in the adjective's holistic sector, where a further part, a given entity (here, a hat), exhibits it as a property. And the core meaning of a preposition like *across*, as in *A skunk ran across the road*, refers directly to a path or site, but only as part of a larger whole in its holistic sector, a Motion event, that must also include a Figure (here, the skunk), a Ground (here, the road), and an act of moving or of being located (here, the running).

In our framework, then, the associated meaning of all relational morphemes (i.e., partonyms) have a holistic sector that the core meaning is part of. But the associated meaning of all autonomous morphemes—whether this includes only some nouns or also some verbs—lacks a holistic sector.

2.1.2 Interaction among Distinctions

The distinction between a morpheme's core meaning and holistic sector can interact with that between an autonomous and relational type of morpheme as well as that between sameness and difference to yield a number of patterns. The three patterns treated next pertain to this study's analysis.

The Same Phenomenon as Independent or as Dependent. For one pattern, a language can contain both an autonomous noun and a relational noun that include the same phenomenon in their core meanings but that are lexicalized to present a conceptualization of that phenomenon respectively as independent or as dependent.

In English, for example, the morpheme *woman* generally functions as an autonomous noun referring in its core meaning to an adult female human understood as an independent entity. But, to use Husserl's (1970) example proposed for a monogamous heterosexual context, the morpheme *wife* functions as a relational noun that in its core meaning also refers to an adult female human, but only in

[6] In application to nouns, Partee and Borschev (2012), among other authors have used the term "relational" in this sense but, instead of "independent" or "autonomous", have used such terms as "sortal" and "one-place".

[7] The pronoun *it* that must accompany the verb as subject, as in *It rained*, can be judged not to refer to some part of a larger conceptual complex, but rather to emerge from English syntactic requirements. Accordingly, English-speaking polytheists would not say **They rained*, and monotheists would not say **God rained* but at most *God made it rain*.

relation to a man as part of a particular larger composite whole: a man and woman married to each other, that is, a married couple.

In our analysis, the core meaning of the autonomous morpheme *woman* contains only the concept 'woman', and the morpheme lacks a holistic sector. But the core meaning of the partonymic morpheme *wife* contains both the concept of the woman and that of her relation to the whole married couple, while the holistic sector contains the concept of the whole married couple.

It may happen that saying or hearing the morpheme *woman* activates in a language user the concept of some larger whole, for example, 'humankind', that its referent belongs to as a part. However, the morpheme is not lexicalized to do so. By contrast, the morpheme *wife* is specifically lexicalized to represent in the cognition of a language user the concept of a woman as a part of a married couple.

Different Parts in the Same Whole. For a second pattern, a language can contain different relational morphemes that represent the same composite whole in their holistic sector but that refer directly to different parts of that whole in their core meanings. An English example is the relational noun *husband*, whose holistic sector has the same composite whole as that of *wife*, namely, 'a married couple'. But the new noun foregrounds a different part of that whole in its core meaning, the man plus his relation to the couple. The nouns *wife* and *husband* thus have a particular sector in common, the holistic sector, and thus exhibit sector sharing.

The Same Phenomenon as a Part in Different Wholes. In a third pattern, given that a relational morpheme refers to a certain phenomenon in a particular relationship, a language can contain different relational morphemes that refer to that same phenomenon in different relationships. Thus in English, the concept of an adult female human, a woman, appears not only in the core meaning of *wife* in relation to a man as part of a particular composite whole, a married couple. It also appears in that of *mother* where it is in relation to a child as part of a different composite whole, one consisting of an immediate lineal pairing. This distinct composite whole is now what appears in its holistic sector.

The morphemes *wife* and *mother* have different core meanings, but their common inclusion of the concept 'woman' there takes them part way to being core-sharing morphemes.

2.1.3 Coentailment

The conceptual complex that comprises the composite whole of a morpheme's holistic sector may be under a certain constraint. This constraint will here be called **coentailment**, reflecting the traditional linguistic notion of entailment (e.g., Potts, 2005). Under this constraint, all the parts of the composite whole, including the part represented in the morpheme's core meaning, must be realized—that is, be present or occur—at some time. We will then say that the whole entails all its parts, that each part entails the other parts, and that the parts coentail each other. Thus, in the holistic sector of *hypotenuse* (see section 2.2), the right triangle and its parts—the right angle, the two adjacent sides, and the opposite side—all coentail each other.

Such an internally self-entailing conceptual complex could logically be considered a single unit entity. But our cognition is so organized as to be able to conceptualize the whole as if portioned out into quasi-independent elements to which heightened attention can be differentially directed. It is this property of cognition that, among other things, enables the occurrence of partonyms in language.

2.1.4 A Space-Time Parameter

The pattern exhibited by the composite whole in a morpheme's holistic sector can include constraints other than the one on coentailment. Among others, it can include constraints on how parts of the whole relate to each other spatiotemporally. Partonymic morphemes can range along a parameter from stricter to looser, requiring specific relations in both space and time, in just one of these domains, or in neither. As an organizing aegis, these three steps are treated next in order.

2.2 *Constraint in Both Space and Time*

First, strict constraints in both space and time are exhibited by Langacker's (1987) example of the morpheme *hypotenuse*. This morpheme is a partonym that, in our terms, has a holistic sector and a core meaning. The conceptual complex in the holistic sector is that of a right triangle—a composite whole consisting of a polygon with three sides in which two of them form a right angle. And what the morpheme refers directly to in its core meaning is the side opposite the right angle.

In accord with attentional factor 1, that side is generally more salient in a speaker's or hearer's cognition than the right triangle as a whole, than the remaining portion of the triangle, or than any part of that remainder, such as the right angle.

In terms of constraints, since the morpheme is a partonym, all the parts of the right triangle represented in its holistic sector—including the side opposite the right angle, which is also represented in the core meaning—coentail each other.

In addition, these parts are under strict spatiotemporal constraints. They must be located at certain precise positions relative to each other in space, and they must occupy those positions at the same time. Thus, if at the time of consideration the two sides of the right angle are not spatially connected with the side intended for foregrounding, that "side" is not a hypotenuse but an isolated line segment separated from an L-shaped figure.

Section 2.1.2 showed a relationship between the autonomous noun *woman* and the relational nouns *wife* and *mother*. A parallel relationship can be seen here. The phrase *line segment* is an autonomous NP referring to a so-conceptualized independent phenomenon, a bounded straight line. Different relational nouns can then foreground this same phenomenon as a part in different composite wholes. *Hypotenuse* foregrounds it as the line opposite the right angle of a right triangle. And *chord* foregrounds it as a line between two points on an arc—also under strict spatiotemporal constraint.

2.3 *Constraint in Time but not Space*

To get one step looser in space-time constraint, we return to the relational noun *wife*. Unlike a hypotenuse in relation to the triangle it is part of, a wife is not spatially constrained in relation to the couple that she is part of. Her husband need not be at a specific location, say, beside her, but can be anywhere at all and the woman is still a wife.

But a wife does have a temporal constraint in relation to the couple that she is part of. The man must be married to her at the time of consideration. Otherwise, the woman would not be a wife but a *fiancée*, a *divorcée*, or a *widow*.

Like *wife*, these three words are also relational nouns that refer to the same entity, a woman, in their core meanings. And they also specify that that entity is a part of a composite whole, represented in their holistic sectors, that is constrained in time but not space. All four of their holistic sectors, though, are different. Thus, like *wife* and *mother* earlier, *wife, fiancée, divorcée* and *widow* are part-way toward being core sharing.

But there is a further relationship. The composite whole that makes up the holistic sector of *wife*, namely, 'married couple', is itself a part of a larger composite whole in the other morphemes' holistic sectors. These larger wholes in turn add to the temporal constraint, placing the married couple period within a time sequence, as seen in (6).

(6) Holistic sectors of morphemes whose core meanings foreground the part that is a woman
  a fiancée: a woman and a man intending to become a married couple
  b divorcée: a woman and a man who were a married couple and then divorced
  c widow: a woman and a man who were a married couple where the man then died

With respect to attentional structure, all four of these relational nouns are comparable. Thus in accord with factor 1, a same-venue factor, their core meanings—all of which represent a woman in specific relations to larger wholes—are more salient than their holistic sectors representing those larger wholes, or than any other portion of those wholes.

Factor 2, the corresponding cross-venue factor, can also be seen to hold. For example, the concept 'man' is more salient when represented in the core meaning of the morpheme *husband* than when represented only within the holistic sectors of the four morphemes at issue.

2.4 *Constraint in Neither Space nor Time*

We turn to a type of relational morpheme whose holistic sector shows the lowest degree of spatiotemporal constraint. The parts that compose the composite whole there must all be realized—they still coentail each other—but they are not constrained in space or time for their realization. An example of such a composite whole is Fillmore's (1976) "commercial frame". This is a conceptual complex whose parts include four entities or "semantic arguments", consisting of two Agents, a seller and a buyer, and of two non-Agents, goods and money; two transfers of possession—that of goods from the seller to the buyer and that of money from the buyer to the seller; an agreement between the seller and buyer that the two transfers constitute a mutually acceptable, reciprocal exchange; and the volitional intention by both these Agents to bring the exchange about.

A number of English verbs—such as *sell, buy, spend, pay, charge, cost*—all have this same composite whole in their holistic sectors. At the same time, each verb foregrounds a different subset of the whole's parts in its core meaning. Thus like the nouns *wife* and *husband*, these verbs exhibit sector sharing.

2.4.1 What is Foregrounded in the Verb's Core Meaning

An issue here, though, is that it is less clear with the verbs just listed than with the nouns treated earlier exactly which subset of parts should be considered foregrounded in the core meaning. The analysis adopted here involves a given verb's "syntactic arguments", the nominals the verb is lexicalized to take that refer to its semantic arguments. The subset in the core meaning then consists of the actions of the verb's syntactic arguments in accord with the latter's relative salience.

A Hierarchy. The degree of a syntactic argument's salience, we propose, proceeds from high to low along two parameters. One parameter is that of an argument's occurrence requirements, from obligatory through optional to blocked (see below). And, among the obligatory arguments, the other parameter is one of grammatical relations, from subject to nonsubject (i.e., direct or oblique object). When combined, these

parameters yield a single salience hierarchy for a verb's syntactic arguments that descends from an obligatory subject through an obligatory nonsubject through an optional to a blocked argument.

We introduce a new factor, factor 3, to designate this hierarchy of salience among a verb's syntactic arguments. Factor 3 is not dichotomous but hierarchical since it compares the relative salience among three or more linguistic elements, and it is of the same-venue type because the arguments under comparison can be present at once in the clause containing the verb.

An Attentional Principle of Presence. Within factor 3, the parameter based on occurrence requirements can be seen as one realization of a more general attentional principle, that of **presence**. In its most generic form, this principle holds simply that presence is more salient than absence. In its current hierarchical application, an argument that must be present is more salient than an argument that can be present or absent, which in turn is more salient than an argument that must be absent. An argument of this last type may even have negative salience, that is, be inhibited in attention.

The principle of presence may also apply to the parameter based on grammatical relations, albeit at a meta-level. At least in languages like English, a subject argument must be present for all verbs across the lexicon, while a nonsubject argument must be present for only some verbs. The reasoning is that an entity with ubiquitous presence in some domain is more salient there than an entity with only scattered presence.

To highlight its generality, the attentional principle of presence applies beyond argument occurrence. First, it underlies the process of "windowing" (Talmy, 2000a, chapter 4). Here, where an expression overall refers to some whole, a component of that whole is foregrounded if a constituent referring to it is present in the expression and backgrounded if one is absent. For example, in the path represented by the sentence *The crate fell out of the plane into the ocean*, the final phase is foregrounded through explicit mention, while the middle phase is backgrounded through non-mention but would be equally foregrounded if the phrase *through the air* were included.

The principle of presence can also be considered to underlie Slobin's (e.g., 2003) proposal of "thinking for speaking". In this proposal, where a language requires the presence of a linguistic element to represent a particular aspect of the situation in reference, that aspect is more salient to the speaker, who must attend to it to determine its character, than an aspect whose representation is optional. We might here extend Slobin's proposal to include its complement, "not thinking for not speaking". This extension would address the case where a language hinders (has little provision for) or blocks the presence of a linguistic element that might characterize a particular situational aspect. The consequence is that the speaker's attention bypasses or is even inhibited from falling on that aspect.[8]

A Verb's Core Meaning Represents Process. The core meaning of a commercial verb, then, is anchored on the referent of its obligatory subject nominal. But since a verb basically refers to process, the core specifically addresses the actions executed by this referent. The action most prominent there is the one occurring between this referent and the next most salient referent, that of the obligatory nonsubject noun. The core also includes a less prominent action, the one occurring between the main referent and the nearest referent represented by an optional nominal. These two actions are each half of the two transfers within the commercial event. Together, they make up most of the verb's core meaning. Everything

[8] The attentional principle of presence is even reflected in a conventional adage. If extended by its complement, this adage would be: Out of sight, out of mind—in sight, in mind.

outside that occurs only within the backgrounded representation of the whole commercial frame in the verb's holistic sector.

2.4.2 One Commercial Verb Analyzed

We can illustrate with the verb *buy*. it can first be shown that this verb obligatorily takes a subject nominal representing the buyer and a direct object nominal representing the goods, while oblique nominals representing the seller and the money are optional. To begin with, (7a) shows that the buyer and goods nominals can appear without the others. Second, neither of them can be omitted, as shown by the four starred sentences of (7b). The first three sentences here omit the nominal representing the goods—with sentences 2 and 3 adding ones representing the seller and the money—while sentence 4 omits the nominal representing the buyer. Finally, the nominals representing the seller and the money *can* both be included—they are optional, not blocked—as in (7c).

(7) a. I bought a car today.
b. *I bought today. / *I bought from a dealer today. / *I bought for $30,000 today.
*A car bought today. ...
c. I bought a car from a dealer for $30,000 today.

In accord with our analysis and factor 3, then, the verb *buy* seems most strongly to foreground in its core meaning the half-transfer in which the buyer (represented by the obligatory subject nominal) receives the goods (represented by the obligatory direct object nominal) and, somewhat less strongly, the half-transfer in which the buyer issues the money (the other referent directly neighboring the buyer, representable by an optional oblique nominal).

Further, by attentional factor 1, this core meaning is more salient than the commercial transaction as a whole represented in the holistic sector, than the remainder within that whole, or than any subportion of that remainder. This relatively backgrounded remainder includes the seller, the half-transfers consisting of the seller's receipt of money and issuing of the goods, and the seller's and buyer's agreement on the exchange.

2.4.3 Different Subject

We can test this analysis by applying it to other commercial verbs. The verb *sell* is like *buy* in that only its subject and direct object nominals are obligatory and the latter refers to the goods. But, as illustrated in (8), its subject nominal now refers to the seller, the other of the two Agents in the frame, in a pattern complementary to that of *buy*. And, in accord with the analysis and factor 3, its core meaning does seem to foreground this other Agent's actions, specifically, most strongly the half-transfer in which the seller issues the goods and, less strongly, that in which he receives the money. Further, in accord with attentional factor 1, this new core meaning is more salient than the full commercial frame represented in the verb's holistic sector.

(8) The dealer sold a car (to the customer) (for $30,000) today.

But *sell* and *buy* contrast in a further respect that requires an addition to what was just said to be in their core meanings. In the holistic sector common to the commercial verbs, the seller and buyer, as Agents, each carry out their actions through their own volitional intention. The core meaning of each verb then

foregrounds not only one Agent's actions but also that Agent's intention. That Agent is thus presented as the main determinant of the exchange, the one who drives the interaction.

It can be further argued that this effect is built into the semantics of the verbs themselves rather than being due to which of the two Agents is represented by the subject nominal. Thus, even though the sentence in (9c) has the buyer as subject, the fact that its verb is *sell*, albeit in a passive construction, is enough that it still presents the seller as the main driver of the exchange, as if leading the buyer into the purchase without any necessary desire for it.

(9) a. The dealer sold a car to the customer.
b. The customer bought a car from the dealer.
c. The customer was sold a car by the dealer.

2.4.4 Different Direct Object

To test the analysis on a further commercial verb, *spend* is like *buy* in that, in addition to having the same commercial frame in its holistic sector, It has an obligatory subject nominal and direct object nominal, and its subject nominal represents the buyer. But unlike *buy*, its direct object nominal represents the money, not the goods.

The two half-transfers anchored on the buyer are again both in the core meaning as the most prominent parts of the composite whole. But in accord with the analysis and factor 3, it seems that the more salient half-transfer is now the buyer's issuing of the money, the new referent of the obligatory direct object nominal, while the less salient one is the buyer's receipt of the goods, itself representable only by an optional oblique nominal, as seen in (10).

(10) I spent $30,000 (for a car) today.

This contrast between *buy* and *spend* as to their direct-object referents is seen elsewhere. For example, as illustrated in (11), the verbs *steal* and *rob* both have the same "theft frame" in their holistic sectors that includes three entities—a thief, a victim, and booty; the transfer of the booty from the victim to the thief; and the transfer as an illegal act detrimental to the victim. In both verbs, the obligatory subject argument represents the same entity, the thief; and their core meanings foreground the thief's action of taking (rather than, say, the victim's action of losing). And both verbs have one further obligatory argument, the direct object. This, however, differs in representing respectively the booty and the victim. Accordingly, the core meanings of the two verbs represent the thief's action mainly with regard to its effect on the booty and on the victim, respectively.

(11) a. A former employee stole a laptop (from the accountant).
b. A former employee robbed the accountant (of her laptop).

2.4.5 Blocked Argument

There is a further significant difference between the verbs *buy* and *spend*. It lies in their treatment of one of the four semantic arguments that both verbs share in their common holistic sector, namely, the seller.

As seen in (12a), *buy* can represent the seller with an optional oblique nominal. But as (12b) shows for *spend*, the seller cannot be expressed by a syntactic argument. More exactly, it cannot be overtly represented using ordinary syntactic means such as simple prepositions with an NP (although

special locutions, such as *at the hands of the clerk*, might serve). This verb then provides the first example here of a blocked argument (Talmy, 2000a, chapter 4, elaborates on blocked arguments).[9]

(12) a. My son bought a book (for $50) (from a clerk) today.
b. My son spent $50 (for a book) (*from/by/with/to/at a clerk) today.

2.4.6 The Arguments' Salience Hierarchy

Factor 3 has so far been seen to govern the portions of the holistic sector that are foregrounded in the core meanings of three different commercial verbs. Its function there has thus accorded with this section's focus on salience differences between the core meaning and the holistic sector. But outside this focus, factor 3 also functions directly in ranking a verb's arguments by salience. Since the sentence in (12b) exhibits the complete argument structure of the verb *spend*, it can be used to demonstrate attentional factor 3 in its full hierarchical same-venue ranking of a verb's arguments by salience.

The buyer, represented as an obligatory subject, is most salient. The money, represented as an obligatory direct object, is less salient. The goods, represented as an optional oblique object, is still less salient. And the seller, blocked from representation, is the least salient, perhaps even inhibited in attention.

We can next introduce a further attentional factor, factor 4, as a cross-venue counterpart of the same-venue factor 3 just illustrated. Factor 4 holds that a particular semantic argument present in common across a certain range of different verbs will have four different degrees of salience, from high to low, if those verbs represent it in the four different syntactic categories ranked by factor 3.

We illustrate factor 4 in (13) for the case where the selected semantic argument is the seller in a commercial frame (here, the dealer). The seller seems most salient as the obligatory subject of the verb *sell*, as in (13a); less so as the obligatory direct object of the verb *pay* (in one of its constructions), as in (13b); still less so where it could appear as an optional oblique argument of the verb *buy*, as in (13c); and least salient or inhibited as a blocked argument of the verb *spend*, as in (13d).

(13) a. The dealer sold a car today.
b. I paid the dealer today.
c. I bought a car today.
d. I spent $30,000 today.

In a discourse about a commercial transaction, accordingly, a speaker with the aim of foregrounding the seller's role the most might well use the verb *sell*, but if her aim is to background it the most, she might well select *spend*. Such factor-4 choices are legion. For one more example, a speaker representing a fear frame with an experiencer E and a threat T can alternatively foreground or background these two arguments by saying either "E fears T" or "T frightens E".

2.4.7 Demonstrating Spatiotemporal Flexibility

[9] It might be argued that *spend* does not block reference to a seller role but that no such role is present—that the verb expresses solely an expenditure of resources. This view is faulted, though, by simple observation of the meaning of (12b). The $50 is understood to have gone to the previous owner of the book and cannot have been used for some other purpose such as, say, being affixed to the book as decoration.

In terms of our progression in spatiotemporal freedom, most commercial verbs do not require that the entities and transfers exhibited by them occupy particular locations in space or time. With respect to time, for example, (14) shows that a speaker can use the verb *buy* in the past tense to refer to a circumstance in which both transfers are in the future. The sentences in (14a) and (14b) further show that the two transfers need not be concurrent and can in fact occur in either order. And with respect to space, both Agents, the buyer and seller, can be at unspecified locations relative to each other.

(14) I bought Nell's old banjo from her over the phone.
a. She'll mail it to me next week,
and I'll send her a check for it after it arrives.
b. I'll send her a check for it in a week,
and she'll mail it to me after that arrives.

2.4.8 Cross-Form and Same-Form

All the examples in this section so far have exhibited the cross-form pattern, but the same-form pattern occurs as well. That is, not only different morphemes but also different senses of a single polysemous morpheme can, under sector sharing, share the same holistic sector while foregrounding different portions of it in their core meanings.

An example is the verb *rent*, which is comparable to the commercial verbs in a number of respects. In fact, its holistic sector is the same as theirs except for two features. First, it has four corresponding entities, but now the two Agents are the owner and the user, while the two non-Agents are the goods and the periodic payment, that is, money per unit of time. Second, it has two corresponding transfers—that of the payment from the user to the owner and that of the goods from the owner to the user—however, the latter is not a transfer of permanent possession but one of temporary control.

Another similarity is that the commercial and the rental frame verbs alike exhibit a certain pair of corresponding argument structures. These structures have only two obligatory arguments, the subject representing either the one Agent or the other, and the direct object representing the goods. In both cases, further, what is foregrounded in the core meaning is the action and determinativity of the Agent appearing as subject. But the dissimilarity—the point here—is that the commercial frame uses two different verbs, *sell* and *buy*, to display these argument structures, whereas the rental frame uses only the one verb, *rent*, as seen in (15).

(15) a. The landlord rented the apartment (to the tenant) (for $1000 a month).
b. The tenant rented the apartment (from the landlord) (for $1000 a month).

Apart from these parallels, however, it can be argued that the cross-form and same-form patterns contrast with respect to a certain further attentional effect. This effect rests on an iconic alignment between phonology and semantics. In this effect, the phonological difference of the morphemes in the cross-form pattern raises the salience of their semantic difference—here, their distinct core meanings. But within the same-form pattern, the phonological identity of a polysemous morpheme's senses raises the salience of their conceptual commonality—here, their shared holistic sector. (Such increased salience of one or another portion of a plenary meaning is, as usual, overlaid onto whatever else exists in the way of salience inequalities.)

If this attentional effect is shown to be valid for these two cases, it could be represented by a pair of dichotomous cross-venue factors. One of the factors would hold that the difference between the core meanings is more salient when the whole meanings are represented by different morphemes than when by different senses of the same morpheme. The other factor would hold that the sameness of the holistic sector is more salient when the whole meanings are represented by the same morpheme (with different polysemous senses) than when by different morphemes.

However, since these two factors are complementary, they might now be combined into a single factor with a structure not seen so far—a **complementary factor**. This new factor, factor 5, then holds that the saliences of the core meaning difference and the holistic-sector sameness are greater when represented respectively by different morphemes and by different senses of the same morpheme than by the reverse.

To specify the effect of factor 5 for the current examples, the two *sell/buy* verbs add an increment of salience to their different core meanings, hence, to the selective foregrounding of either the seller or the buyer. But the two *rent* sentences add an increment of salience to the one holistic sector, hence, to the overall rental exchange.

3 Core Meaning and Infrastructure Sector

In our analysis, the associated meaning of a morpheme can include a second sector, distinct from the holistic sector, its infrastructure sector. This second sector consists of a conceptual complex presupposed by the morpheme's core meaning. The core meaning is based on the conceptual infrastructure and may directly employ some of its concepts in its own conceptual complex, but then it builds on them, adding new conceptual material. It is accordingly not entailed by the infrastructure nor wholly a part of it.

The conceptual components of the infrastructure sector are largely conventional and taken for granted—that is, they are generally notions at large in the culture whose validity does not come under the language user's examination. thus, the infrastructure sector is a sometimes extensive conceptual underpinning of assumptions and beliefs in a language user's cognition that must be there for him to understand the core meaning appropriately. This sector is similar to one of the applications covered by Lakoff's (1987) "idealized cognitive model" or ICM. Further, consistently with attentional factor 1, a morpheme's core meaning is more salient than its infrastructure sector. A form can be associated with a single infrastructure sector under a unitary conceptualization or with two related but distinct ones under alternative conceptualizations, as illustrated next in order.

3.1 *Unitary Conceptualization*

For a unitary conceptualization, consider the English noun *heaven* as seemingly used at least in the U.S. popular Christian context (C. Murphy, 2015). We propose that the core meaning of this morpheme rests on an extensive conceptual underpinning, something like that represented in (16) in itemized form, that constitutes the morpheme's infrastructure sector.

(16) Infrastructure sector of *heaven*

a. A human being has a unitary intangible essence—her/his "spirit" or "soul"—that comprises the sum of his/her identity.
b. This spirit continues on after / despite the person's physical death.
c. It has no further physical embodiment.

d. There exists a single sentient entity—"God"—whose intentions
determine everything in the universe.
e. God has established certain principles of goodness in accordance with which
he wants people to conduct their behavior, thoughts, and feelings.
f. After a person's death, God rewards the spirit of the person who has followed
these principles and punishes the spirit of the person who has not followed them.
g. The reward consists of being granted all worthy experiences,
and the punishment of being afflicted with suffering.
h. Though ubiquitous, God can be imagined as localized and as located above
in / beyond the sky.
i. Though beyond form and gender, God can be imagined as a person and as a male.

The core meaning of *heaven* can then be characterized as in (17). This core meaning is based on the preceding set of notions for its conceptual underpinning, but it is a new concept, not one required by them.

(17) Core meaning of *heaven*
a. a generally luminous circumscribed space near or surrounding God,
when he is imagined as localized and as located above in the sky,
b. in which the spirits of dead people who followed God's principles of goodness permanently
abide,
c. receiving worthy experiences as their reward

Other traditions have conceptions of rewarded afterlife that disagree with one or more of the concepts in (16) or (17). The greater the divergence, the less appropriately would the word *heaven* be felt to apply to the conception.

An example might be the "Elysian fields" during a certain period of classical Greek belief (see e.g., Reece, 2007). These fields were then held to be located in the far West, rather than in the sky, counter to (17a). The after-death spirits dwelling in them were only those of heroes, not also those of all people who followed principles of goodness, counter to (17b). These spirits dwelt there by themselves, without the regular close presence of a deity, counter to (17a). The experiences accorded to these spirits as reward were based on a conception not of worthiness, counter to (16g) and (17c), but of pleasantness—arising from the environment, the company, and the activities (e.g., of hunting and banqueting). And by some accounts of Heracles, not the whole of his spirit dwelt there but only the part deriving from his mortal mother, while his immortal part went to Olympus—counter to the conception of a unitary spirit in (16a). These divergences from U.S. English *heaven* are enough for it to be misleading to say something like *In ancient Greece, heroes were thought to go to heaven after death*.

In fact, for seemingly every concept in the infrastructure sector of English *heaven* in the U.S. popular Christian belief system, some other belief system has an alternative. Examples might be systems with a belief in reincarnation, which counters the concept in (16c) that the spirit of a dead person has no further physical embodiment; or with a belief in polytheism, which has plural sentient entities with different locations and spheres of determination , thus countering the concepts in (16d) and (16h). The languages used by cultures with such belief systems may accordingly tend to lack morphemes semantically comparable to *heaven*.

As just seen, the concepts in the infrastructure sector of a morpheme like *heaven* are quite specific, with any deviations from them leading to alternative conceptualizations. Such specificity might suggest that they would attract a language user's attention. Nevertheless, they seem comparatively backgrounded. This is presumably due to their conventional and taken-for-granted character. They seem in fact to be less salient than the core meaning of such a morpheme, in accord with factor 1.

Sector sharing for the holistic sector was seen in such cross-form examples as *wife / husband* and the commercial verbs. Sector sharing for the infrastructure sector can now also be seen—here, distinct morphemes have the same infrastructure sector but different core meanings. An example is *heaven* and *hell*, which have different core meanings but are both based on the same underlying set of assumptions and beliefs, those outlined in (16). The core meaning of *hell* might then be characterized as in (18). This core meaning is also more salient than the infrastructure sector.

(18) Core meaning of *hell*
- a. a generally dark circumscribed space underground far below God
  when he is imagined as localized and as located above in the sky,
- b. in which the spirits of dead people who did not follow God's principles of goodness
  permanently abide,
- c. receiving suffering as their punishment

These two morphemes can also be used to illustrate the cross-venue attentional factor 2. For example, the concept of punishment for not following God's principles is more salient in the morpheme *hell*, where it is foregrounded in the core meaning, than in the morpheme *heaven*, where it is backgrounded by appearing only in the infrastructure sector.

We can note that partonymic morphemes with holistic sectors can also have infrastructure sectors that underpin some of the holistic sector's concepts. For example, the noun *hypotenuse* can be thought to have the conceptual system of geometry in its infrastructure sector, including such concepts as a straight line, an endpoint on such a line, two such endpoints as coincident, an angle formed by two such lines with coincident endpoints, the chaining of such bi-coincident lines, and the closure of such a chain. Comparably, the verb *buy* may have a conceptual infrastructure underlying commercial transactions with such concepts as ownership, money, equivalent value, and exchange.

3.2 *Alternative Conceptualizations*

While *heaven* was just seen with a unitary interpretation, a polysemous morpheme can have different senses whose infrastructure sectors and systems of conceptualization, though largely interconvertible, are distinct. And corresponding to each such distinct infrastructure sector is a distinct core meaning, as discussed next.

3.2.1 Alternative Infrastructure Sectors and Core Meanings

The type of polysemy just outlined holds for every morpheme for a compass direction in English, with distinct senses based on either a global or a local conceptualization of the earth. More specifically, the senses have infrastructures in which the earth is conceptualized either with global scope of attention from a distal perspective or with local scope of attention from a proximal perspective, and they have correspondingly different core meanings.

We here examine the directed-path (not locative) use of two such morphemes, *east* and *north*, beginning with their global senses, as evoked by the examples involving air travel in (19).

(19) a. I kept flying east. b. I kept flying north.

These two morphemes share an infrastructure sector whose concepts can be outlined as in (20).

(20) Infrastructure sector for global *east* and *north*
- a. The earth is a sphere.
- b. It spins around an axis (relative to a larger stationary spatial frame).
- c. Its axis is a central straight line with endpoints at its surface.
- d. These endpoints are its north and south poles.
- e. Its spin is counterclockwise under the north pole.
- f. Lines of longitude are virtual semicircles on its surface that connect its poles.
- g. Lines of latitude are virtual parallel circles on its surface that are perpendicular to the longitudes.
- h. Though without intrinsic orientation, the earth can be imagined with its axis vertical and its north pole at the top.

The core meanings of the two morphemes can then be characterized as in (21). Under these core conceptualizations, a path east is unbounded whereas a path north is bounded. Although these core meanings are based on the preceding set of notions for their conceptual underpinning, they are new concepts not required by them, as with *heaven* and *hell* earlier.

(21) Core meanings of global directional *east* and *north*
east: counterclockwise along a line of latitude
north: toward the north pole along a line of longitude

We next look at the compass morphemes in their local senses, as evoked by the sentences in (22) that refer to travel by foot.

(22) a. I kept walking east. b. I kept walking north.

The new infrastructure sector shared by these morphemes is outlined in (23).

(23) Infrastructure sector for local directional *east* and *north*
- a. The earth is a plane that averages out as flat.
- b. The plane is perpendicular to the direction of gravity and extends indefinitely outward.
- c. It is stationary.
- d. The sun moves along a semicircular path in the sky above it.
- e. Virtual lines in a rectilinear grid lie on its surface either parallel or perpendicular to the sun's path

(here referred to respectively as "parallel lines" and "perpendicular lines").

As characterized in (24), the two morphemes now also have new core meanings based on their new common infrastructure sector. Here, both the eastward and northward paths can be conceptualized as extending indefinitely—that is, as unbounded—and as differing only with respect to compass direction.

(24) Core meanings of local directional *east* and *north*
east: along a parallel line against the sun's path
north: along a perpendicular line rightward relative to the sun's path

Both the local and the global senses of these morphemes are alike in conceptualizing a path east as unbounded; however, they differ in that a path north is unbounded locally but bounded globally. Now, even where the global sense is evoked, as by the reference to flying in (19), a language user might at first borrow from the local sense the doubly unbounded conceptualization. She might only later realize that one can fly eastward indefinitely, circling the globe repeatedly, but that one can fly northward only until reaching the North Pole, after which one is flying south.

If such a conceptual shift from local to global can be shown to occur at times in a language user, a basis for it might be sought, and we consider historical, lexical, and usage bases. Historically, only the local sense was available until the concept of the earth as a rotating sphere became prevalent. But this is an unlikely basis because today's language user has both conceptualizations equally available. Likelier is a lexical basis, where the two senses of polysemous *north* have different degrees of salience, with the unbounded sense coming more readily to attention than the bounded sense. Such a salience difference within a polysemous range is the province of attentional factor Ad2 in Talmy (2007b) (where it applies, for example, to the noun *dirt*, whose 'grime' sense is more salient than its 'soil for plants' sense). Perhaps likeliest is a usage basis—the probable fact that most people deal with local *north* more often than global *north*.

While the global and local conceptualizations that underlie compass morphemes differ substantially, they nevertheless exhibit a regular relationship. Wherever a morpheme can be used in its local sense, it can also be used in its global sense. Thus, if a speaker can validly say *I am walking north* with the morpheme intended in its local sense, the sentence will be equally valid if the morpheme is understood in its global sense. The reverse condition generally holds as well except near the poles themselves, where the local sense's presumption of indefinite extensibility breaks down.

The global and local senses are further alike in their attentional structure: factor 1 holds across both. In both cases, it seems, a language user would generally experience a morpheme's core meaning, representing a specifically oriented path, to be more salient than its infrastructure sector, representing general earth structure.

3.2.2 Same Infrastructure Sector, Alternative Core Meanings

The present section 3 held at the outset that a morpheme's core meaning can build on an infrastructure sector without being entailed by it. This position would be supported by showing that related but nonoccurrent alternatives to an existing core meaning, equally based on the same infrastructure, could be just as viable.

Here, the compass morphemes in their global directional sense can be used for illustration. With their common infrastructure sector (seen in (21)) remaining intact, their core meanings could have had systematically distinct conceptualizations.

For instance, geographers might have instead agreed to designate travel along a latitude line in either direction toward a certain selected longitude, say, the Prime Meridian, as "east", with travel in either direction toward the globally opposite longitude as "west", so that a continuing equatorial flight would be going east half the time and west half the time for every orbit around the earth. Then what are currently called the "western" and "eastern" hemispheres might be better termed the "left" and "right" hemispheres.

Comparably, geographers could have designated travel that starts northward along longitudes in the left Hemisphere as remaining continuously "north" around the same great circles, even after passing the north pole, while travel in the reverse direction would be "south".

The alternative core meanings might then be characterized as in (25). Under these alternatives, the northward direction is now unbounded while the eastward direction is bounded—the reverse of the extant core meanings.[10]

(25) Alternative core meanings of global directional *east* and *north*
east: toward the prime meridian along a line of latitude
north: along a longitude toward the north pole in the left hemisphere
or toward the south pole in the right hemisphere

If they had existed, such alternative core meanings for *east* and *north* would presumably also be more salient than the infrastructure sector, itself constant throughout, in accord with attentional factor 1.

Though without application to internal morphemic semantic structure, a further attentional factor is relevant here—factor 6 (see factor Gb1 in Talmy, 2007b). This factor holds that a concept with lexical representation is more salient than a concept without it. This factor is dichotomous since it contrasts just two linguistic elements, and it can be classed as of the same-venue type if the whole of a given language's lexicon can be regarded as a single venue, all available at once to a language user. In its present application, this factor would seemingly correctly predict that, in English, the unbounded eastward and bounded northward concepts, which do have representation in the morphemes *east* and *north* as presently understood, are more salient than the alternative bounded eastward and unbounded northward concepts, which are not represented lexically and must be discursively spelled out to be referred to.

The corresponding cross-venue factor, factor 7 (see factor Gb2 in Talmy, 2007b), then holds that a particular concept is more salient when it has lexical representation than when it does not. The two venues here are the lexicons of two different languages. This factor cannot be illustrated for global *east* and *north* because no other language has the alternative senses represented in its lexicon. But for a different case, note that the concept 'a warm pleasurable glow of pride in the accomplishments of someone toward whom one feels parental' may come more readily to the consciousness of a speaker of Yiddish, whose lexicon includes a morpheme, *nakhes*, expressing the concept, than to that of a speaker of English, whose lexicon lacks one.

Attentional factors 6 and 7 can in turn be seen as additional realizations of the general attentional principle of presence cited in section 2.4, holding that presence is more salient than absence. The application of this general principle to the current factors is that an occurrent lexical representation of a concept is more salient than an absent one.

[10] Under these alternatives, special provisions would need to be established for the great circle dividing the left and right hemispheres and for correlating local with global *east* and *north* in the right hemisphere.

4 Core Meaning and Collateral Sector

In our progression through the sectors of a morpheme's associated meaning from the most indispensable to the most nonessential accompaniment of the core meaning, the third is the collateral sector. Like other sectors, it consists of a conceptual complex—that is, a relatively structured set of concepts. But here these concepts are merely accessories to the core meaning, only incidental to it. They do augment the core meaning with related conceptual content commonly associated with it. But they are not criterial to it. They are additional concepts in effect occurring side-by-side with the core meaning yet ancillary to it – hence our term "collateral". Accordingly, provided that a particular situation includes an instance of a morpheme's core reference, the morpheme can be felicitously applied to it even if the situation, lacks elements corresponding to the morpheme's collateral concepts (or has elements differing from those concepts). In such a case, the morpheme's collateral concepts are defeased.

On the basis of these characteristics, the collateral sector can be distinguished from the earlier two sectors. Unlike the holistic sector, the collateral sector does not include the core meaning as an essential part of itself. Further, its concepts do not entail the core meaning, nor does the core meaning entail them. And unlike the infrastructure sector, the collateral sector is not a set of assumptions and beliefs that must be in place for the core meaning to be understood. The core meaning, rather, can be understood independently of it.[11]

With regard to attentional properties, The core meaning of a morpheme is more salient than its collateral sector. This again accords with attentional factor 1, as was the case for the previous two sectors.

Based on the nature of their conceptual content, the collateral sectors of morphemes can be divided into classes and subclasses, and then further into numerous smaller "types". A number of these are examined next. Our analysis is only heuristic. Thus, some of the proposed divisions may, under future analyses, be found to grade into each other, require resegmentation, or be found non-exhaustive. To facilitate the labeling of these divisions, a collateral sector will also be called an **augment** for short.

4.1 *The External Augment Class*

The augment (i.e., the collateral sector) of a morpheme is here placed into either of two major classes based on whether its conceptual content occurs largely outside or within the scope of the morpheme's core meaning. The former case, addressed here, will be called the **external augment** class.

An external augment in turn has two subclasses, encompassive and distal. An encompassive augment consists of a conceptual framework or matrix that includes the core meaning within itself. A distal augment is a conceptual complex separated from the core meaning. These two subclasses include diverse types of augments, a number of which are presented next.

4.1.1 Encompassive Spatial Augment

The first type of collateral sector we treat, then, is the **encompassive spatial augment**. It can consist of an abstract spatial framework with respect to which the phenomenon represented by the core meaning is regularly conceptualized as moving, located, or oriented in a particular way. But the morpheme can still be used to refer to this phenomenon even during periods that it has a different relation to the spatial framework.

[11] The holistic sector (as a superordinate), the infrastructure sector, and the collateral sector can be suggestively pictured as having different locations with respect to the core meaning in their association with it—respectively above, below, and beside it.

An abstract spatial framework frequently serving this function is the "earth-based grid" consisting of a vertical line based on gravity and a horizontal plane at the earth's surface (Talmy, 2005). Thus, with respect to this augment, the core referent of the morpheme *pillar* is canonically conceptualized with its long axis vertical, that of *chair* with its planar seat horizontal, and that of *painting* with its four sides alternately vertical and horizontal. However, these words would still be used to refer to those objects when they are in different orientations, for example, with the pillar lying on the ground, the chair overturned, and the painting tilted. Thus, although certain orientations in the earth grid are commonly associated with the core referents of these morphemes, they are in the end only incidental to them, so that these associations belong in the morphemes' collateral sector.

In that sector, moreover, they seem less salient than the core meanings, in accord with their incidentality to them as well as with the same-venue attentional factor 1. Cross-venue factor 2 can also be seen to apply. For example, the concept 'verticality' is more salient in the word *upright*, where it appears in the core meaning, than, say, in the morpheme *pillar*, where it appears only in the collateral sector.

Sector sharing with respect to the collateral sector might in turn be illustrated by the morphemes *pillar* and *steeple*, both of whose referents are canonically conceptualized as vertical but would retain their identities in any other orientation.

4.1.2 Encompassive Context Augment

A morpheme's core reference can be incidentally associated with a particular context that, among other possibilities, can consist of a certain physical setting. To illustrate this possibility for such an **encompassive context augment**, the core meaning of the morpheme *koala* is the concept of a particular kind of animal. But a common incidental association with this concept is a certain physical setting: the animal imagined as located high up in the branches of a eucalyptus tree, itself located within a forest of such trees, the forest in turn being located in Australia. The collateral character of this conceptual association is evident in that, even when set in a zoo in the U.S., the animal would still be referred to as a "koala". The core reference to the animal per se, moreover, would likely be judged to be more salient than its commonly associated context.

4.1.3 Encompassive Temporal Augment

Also in the external augment class, another type of augment is an **encompassive temporal augment**, generally occurring where the core meaning of a morpheme is commonly conceptualized as one event within an associated succession.

For example, the core meaning of the verb *launder* is the action of agitating fabric in water with detergent in order to clean it. But for this verb, that action is typically conceptualized as following the circumstance of the fabric's having first gotten dirty through use, and as being soon followed by an event of being dried, and then often events of being ironed, folded, and put away.

With respect to attention, the action making up the core meaning seems more salient than the encompassing temporal sequence. And the latter seems to be only an augment, not necessary to the core meaning, because it can all remain unrealized while the verb stays viable. This is seen in a sentence like (26), where the verb *launder* is felicitous even though the fabric in question had not previously gotten dirty and was not soon dried, ironed, folded, or put away.

(26) I laundered the new sheets in our old washing machine in the garage
and just forgot them there for a week.

4.1.4 Encompassive Causal Augment

In an **encompassive causal augment**—a further type of external augment—causality is added to temporal sequence. Exemplifying this type, the "mental models" account of Gentner and Stevens (1983) includes cases where individuals associate a morpheme's core meaning with a certain conception of its cause or the process that has led to it.

For example, the core meaning of the noun *rain* for most speakers is the concept of water drops falling from clouds down to earth. But some speakers augment this core meaning with a "sponge"-like conception of water getting absorbed into clouds and getting squeezed back out. Or in the mental model of other speakers, water particles break open to become water vapor, reassociate loosely to form clouds, and associate tightly to become drops that fall as rain.

For such speakers, the core meaning is presumably still more salient than their causal associations with it. And if these speakers were to alter their understanding of those causal associations, they would presumably preserve their sense of the core meaning—still applying the morpheme *rain* to water drops falling from clouds to earth—thus demonstrating the incidental character of such causality.

4.1.5 Encompassive Functional Augment

Adding intention by a sentient entity to causality and temporal sequence can yield an **encompassive functional augment**, a still further type of external augment. In this type, a morpheme's core referent is associated with a pattern of actions that serves some sentiently intended and conventionally recognized use or purpose.

For example, as commonly conceptualized, the core referent of the noun *bucket* is a roughly cylindrical tapered object, its dimensions approximately a foot, with an open and a closed end and with a handle spanning the open end. But associated with this is a functional augmentive conception of an intentional causal sequence: it is generally intended that one can place material into the object, that the object will contain the material, that one can transport the contained material through carrying the object by holding its handle, and that one can unload the material from the object at the new location.

If a particular object accords with the original physical description but clearly does not have the latter use, as in (27), it would still be called a *bucket*, thus showing that the core concept is determinative and that the purpose concept is only an associated rather than a necessary part of the morpheme's reference. In accord with this, the core meaning of the morpheme again seems more salient than its functional augment.

(27) The centerpiece of the art exhibit is a gold bucket sitting on a pedestal.

4.1.6 Encompassive cultural augment

A yet further type of external augment, what can be called an "encompassive cultural augment", locates a morpheme's core concept within an interconnected pattern of concepts fostered by the surrounding culture or society (while incorporating as many as needed of the preceding types).

For example, the core meaning of the morpheme *book* is generally a concept of an object with a number of adjacent paper pages having printed writing on them, bound together within a cover. But its cultural augment includes concepts of authors and readers; publishers and libraries; multiple copies for sale; bookshelves holding books vertically parallel with their spines in view; literacy and the institution of

education to produce literacy; reading circles; and contents representing the cumulative lore and imagination of the society.

As with augments generally, all these cultural associations seem dispensable, as suggested by (28). And with respect to salience, they may tend to hover in the background of attention relative to the core concept of the physical object.

(28) In one science fiction future, the last book in existence will be on view in a stasis field.

4.1.7 Distal Event Augment

As noted, an external augment can also consist of a conception that is separated from, rather than encompassive of, the core concept—what was termed "distal". One augment type in this subclass is the **distal event augment**. In one of its forms, this augment is the concept of a specific historical event that is an instance of the core concept and generally is culturally associated with it.

For illustration, consider the words *crucifixion* and *holocaust* when used as common nouns. Their core meanings, can in approximation be characterized respectively as the concept of executing a person by nailing to a cross and the concept of exterminating a large group of people. But many speakers would augment these core meanings with a concept of a particular historical instantiation of them—respectively, the execution of Jesus on a cross and the Nazi extermination of Jews. Though these augments can be quite salient, the core meanings of these words when used as common nouns can be still more salient, especially so where it is clear from the context that the distal event augment is not intended. This is seen, for example, for the noun *crucifixion* in a sentence like (29).

(29) Crucifixion was only one form of execution practiced by the Romans.

Interestingly, a common noun of the present type is at times used as a definite proper noun—then often written capitalized, as in *the Crucifixion / the Holocaust*. In such a case, what was a specific realization of the core concept—a culturally associated historical event backgrounded in the distal event augment—now becomes foregrounded as the core concept itself. In future research, this type of linguistic phenomenon may be more readily characterized through use of the present framework with its distinction between core meaning and collateral sector.

4.1.8 Distal Temporal Augment

As proposed earlier, a morpheme's core concept can be associated with an encompassing temporal sequence—its encompassive temporal augment. Now consider again the preceding augment type in which a morpheme's core meaning is associated with a particular distal event. That event can itself be further associated with an encompassing temporal sequence. Since such a sequence is here temporally displaced from the core concept, we will call it a **distal temporal augment**.

For example, the notion of Jesus's death that the word *crucifixion* might typically be associated with can be further conventionally augmented by an encompassive temporal sequence, the last days of Jesus, perhaps including the last supper, prayer in Gethsemane, and entombment.

Attentionally, this type of augment may actually be the lowest in a three-tier salience differential. Thus, when the common noun *crucifixion* is heard, the concept of a certain form of execution in its core meaning may be more salient than the concept of Jesus's death on a cross in its distal event augment, which may in turn be more salient than the conception of Jesus's last days in its distal temporal augment.

4.2 *The Internal Augment Class*

As noted, we have proposed two major augment classes. All the augment types treated so far have been in the external augment class, but we now turn to the **internal augment** class. The concepts in a morpheme's internal augment elaborate on those in its core meaning while remaining within that core meaning's domain of space, time, or other characteristics. As elsewhere here, such an internal augment is commonly associated with the core meaning, but is less salient than it, is not criterial to it, and can be absent without effect on the morpheme's continued use to refer to the core concept.

4.2.1 Internal Spatial Augment

One type of internal augment, the **internal spatial augment**, concerns the space enclosed by a morpheme's core referent. This augment can include elements contained in or relevant to that space, as well as parts or delineations of the referent, insofar as these are understood to commonly occur there.

In accord with such an understanding, a language user might associate a driver with a bus (i.e., with the morpheme *bus*), a chandelier with a room, a processor with a computer, and a key with a door. In fact, each of these examples was used by a particular researcher as illustration for a cognitive process of association—respectively, by Prince (1981) for "inferability", by H. Clark (1975) for "bridging", by Hirst (1981) for "conceptually based inference", and by Consten (2003) for "indirect anaphora". Thus, Prince cites a process of inferability to account, in a sentence like (30), for the definiteness of a nominal (*the driver*) that has not previously appeared in the discourse.

(30) I got on a bus yesterday, and the driver was drunk.

Such a conventionally associated interior element as a driver within a bus is less salient than the core referent of the morpheme *bus*, that is, the whole vehicle itself. And it can of course be omitted, as when referring to a bus abandoned in a junkyard.

Our notion of a morpheme's collateral sector—or augment—can here be considered a more general explanatory concept, one that subsumes certain other concepts presented in the literature. Thus, it may be taken to subsume Prince's notion of inferability and the comparable notions of other researchers under one of its types.

4.2.2 Internal Temporal Augment

Temporal sequence was seen above to figure in an external augment, but it can also figure in an internal augment. In such an **internal temporal augment**, a certain sequence of events is understood to conventionally take place within a morpheme's core referent.

The "scripts" of Schank and Abelson (1977) cover examples of this type. In one such example, typically augmenting the core referent of the morpheme *restaurant* is the sequence in which customers enter, sit down, select items from a menu, order, get served, eat, pay, and leave.

Such an augment is generally less salient than the core referent itself and can be dropped or replaced, as in a sentence like (31).

(31) This is a pay-in-advance and fixed-meal restaurant.

Once again, then, the notion of a collateral sector is seen to subsume a notion from another line of research - here, that of scripts—this time, within a different one of its subtypes.

4.2.3 Internal Attribute Augment

Lastly, a third type of internal augment—an **internal attribute augment**—consists of an attribute conventionally associated with a morpheme's core referent (see Talmy (2000b, chapter 5), for further analysis).

To illustrate, the core referent of the compound noun *hotel room*—namely, the physical room—is commonly associated with the attribute of being a 'temporary lodging'. This augment seems generally less salient than the concept of the physical room itself, and can be overridden. It can in fact be replaced by another attribute, that of being a 'permanent residence', by the occurrence of another morpheme with that reference—for example, adverbial *home*—as in (32). The revised understanding is that the compound might pertain to a residential hotel.

(32) She walked home to her hotel room.

5 Core Meaning and Disposition Sector

Every morpheme in a language has a set of grammatical properties. such properties exhibit a certain duality: they have both an external and a corresponding internal realization.

Externally, a morpheme's grammatical properties largely involve rules about its occurrence. These are requirements or constraints governing whether the morpheme occurs with particular morphological or syntactic forms or constructions around it.

Internally, a morpheme's grammatical properties add certain semantic qualities to its meaning. Such grammatically based semantic qualities are here treated as constituting a fourth sector of a morpheme's associated meaning, its disposition sector. Talmy (2000a, chapter 1) introduced the term "disposition" to refer to such semantic characteristics, and this usage is continued here.

When applied to the present subarea, attentional factor 1 seems to correctly hold that a morpheme's core meaning is more salient than its disposition sector. That is, a morpheme's main semantic import is more salient than the semantic effects arising from its grammatical properties.

We next look at three types of disposition sector.

5.1 *A Morpheme's Lexical Category*

One grammatical property with both external and internal characteristics is a morpheme's lexical category—for example, its being a verb, an adjective, or a noun. Externally, such lexical categories have certain morphological and syntactic characteristics. In English, for example, a verb inflects for tense and requires a subject nominal; an adjective may inflect for comparison and adjoin a noun; and a noun may inflect for number and head a nominal serving as a verb's subject.

Internally, at the same time, these lexical categories each have certain semantic characteristics. The referents of a verb, of an adjective, and of a noun prototypically have the semantic character of being respectively a process, an attribute, and a "thing", that is, a physical or conceptually reified entity. Correlatively, the referent of a verb has the prototypical semantic character of being dynamic, while the referents of an adjective and of a noun have that of being static. Thus, the referent of the verb *(to) run* has

the semantic character of being a dynamic process, that of the adjective *yellow* of being a static attribute, and that of the noun *(a) boulder* of being a static thing.

Another term we introduce here to characterize this phenomenon is to say that a concept is represented in one or another type of formal **housing**—the lexical category of the morpheme it is expressed in. Each type of housing imparts its associated semantic effect to the concept. This can be termed the **semantic housing effect**.

Often what can in some sense be considered the same substantive concept can be represented by—or housed in—morphemes of different lexical categories, with correspondingly different semantic effects imparted to it. By the analysis adopted here, a substantive concept of this sort constitutes the core meaning of each such morpheme, while the different semantic effects of the distinct formal housings are in the morphemes' disposition sectors. And, in accord with attentional factor 1, the former is more salient than the latter.[12]

English may lack examples of this phenomenon without confounds. One reason is that, where verbal housing can stand alone, a corresponding adjectival or nominal housing must be accompanied by a copula or other low-content verb, itself generally stative. Another reason is that, in some cases, derived forms of a morpheme, not just its simplex form, must be used to demonstrate all three types of housing.

Still, something of the cited semantic differences due to housing may be judged present in the examples of (33). Here, each example includes roughly a single substantive concept in verb, adjective, and noun forms. The subject in each of the four sentences may accordingly seem to be dynamically "doing" something under the verb option, statically having a certain property under the adjective option, and statically possessed of a certain reified or physical entity under the noun option. In (33b), for example, the common substantive concept in the core meaning might be characterized as 'occurrence in great quantity'. But the fir trees may seem to be respectively generating, manifesting, and possessing this great quantity of occurrence—distinctions represented in their respective disposition sectors.

(33) a. Her ring shines. / is shiny. / has a shine.
b. Fir trees abound / are abundant / have (great) abundance in this region.
c. Our views differ. / are different. / show a difference.
d. My rose bush is blossoming all over. / is all blossomy. / has blossoms all over it

The preceding four examples are of the same-form type in which the three entries under each example have the same basic morphemic root or stem. But the same semantic housing effect can be shown by examples of a cross-form type in which different morphemic roots or stems express basically the same substantive concept under different types of housing. The examples in (34) illustrate this for verb and adjective housing.

(34) a. She excels / is superior in math.
b. The medieval mace bristled / was studded with spikes.
c. Scotland abuts / is adjacent to England.

[12] By an alternative analysis, the semantic housing effect is represented in a morpheme's core meaning together with the substantive concept there. On this view, there is no reason to propose that a morpheme has a disposition sector representing the semantics of lexical categories.

The pairs of morphemes in these last examples exhibit the strongest case of cross-form core sharing so far in this study. Thus, it may be judged that the paired morphemes in (34c) have virtually the same core meaning, one mainly consisting of the concept 'a Figure's being located so as to contact a Ground, neither separated from nor overlapping with it'. At the same time, they differ in their disposition sectors, which represent this locatedness either as a process that the Figure generates or as an attribute that it manifests.

Technically, we also find sector sharing exhibited by the disposition sector. For example, all the cross-form adjectives in a language can be thought to share within their disposition sectors the concept 'attribute'. But for the cases considered so far, the semantic content of the disposition sector is quite generic—basically consisting of the concepts 'process', 'attribute', or '(reified) thing'—and hence less semantically significant.

With regard to attentional structure, factor 1 again seems to hold in that, for example, the core meaning of the verb *shine* seen in (34a)—representable as something like 'radiance'—is more salient than the concept process' in the verb's disposition sector.

The corresponding cross-venue factor, factor 2, can also be seen to hold. Thus, the concept 'process' is less salient when occurring in the disposition sector of the verb *shine* than when occurring in the core meaning of the noun *activity*.

5.2 *A Verb's Aspect*

Another grammatical property with a dual external-internal character is aspect in verbs. Externally, a verb root can be able or be required to occur morphologically with certain temporal affixes or syntactically with certain temporal constituents. Internally, this external cooccurrence pattern of a verb is reflected as part of the temporal structure of its intrinsic semantics. That is, a verb is lexicalized to represent such temporal structure in its meaning, something that a language user can experience directly on hearing or thinking of the verb in isolation. This external/internal distinction has had traditional linguistic recognition under such terms as "grammatical aspect" for the former case and "lexical aspect" or "Aktionsart" for the latter (e.g., Comrie, 1976).

By the analysis adopted here, the substantive content of a verb's semantics appears in its core meaning, while its lexical aspect appears in its disposition sector. And in accord with attentional factor 1, the former is more salient than the latter.[13]

We first illustrate this phenomenon with a cross-form example, the two verbs *study* and *learn*. These verbs largely exhibit core sharing: over certain areas of their usage, their roughly common core meaning might be characterized as 'for a sentient Agent to come to know progressively more of a particular subject by attending to material on the subject'. However, they differ in their external syntactic patterns for grammatical aspect. Among these patterns, *study* accepts a temporal phrase starting with *for* but rejects one with *in*, whereas *learn* exhibits the reverse pattern, as seen in (35).

(35) a. I studied French for 2 years. / *in 4 years.
b. I learned French in 4 years. / *for 2 years.

[13] By the alternative analysis in the preceding endnote, a verb's lexical aspect can be thought to be inseparable from its substantive content and to appear with that in its core meaning. In that case, if a disposition sector is still posited, no aspectual information occurs in it.

In their disposition sectors, correspondingly, the two verbs differ in their internal aspects, respectively exhibiting the types of aspect traditionally called an (atelic) activity and a (telic) accomplishment (e.g., Vendler, 1957).

To be more specific, under the activity type, the process represented in the core meaning affects progressively more of an either indefinitely extending or finite phenomenon through an interval at whose endpoint the process stops, but with the implicature that not all of the phenomenon is affected. Thus in (35a), effectively, the Agent comes to know progressively more of French over two years at the end of which he stops without knowing all of it.

Under the accomplishment type of aspect, however, the process represented in the core meaning affects progressively more of a finite phenomenon through some interval at whose endpoint the process stops and all of the phenomenon is affected. Thus in (35b), the Agent comes to know progressively more of the (so-conceivedly) finite phenomenon of French over four years at the end of which he stops and knows all of it.

Moreover, in accord with attentional factor 1, the two verbs' shared core meaning, which represents an Agent's acquisition of knowledge on a subject, seems more salient than their disposition sectors, which represent different temporal contours for that acquisition.

A same-form example is found in the verb *teach*, which adds a second Agent to both the preceding verbs with their original Agent, and which has a related core meaning characterizable as 'for Agent-2 to help Agent-1 come to know progressively more of a particular subject by providing material on the subject for Agent-1 to attend to'. As shown in (36), this single verb can occur in both of the syntactic aspectual frames seen just above—that is, occur with either the *for* or the *in* temporal phrase—whereas the verbs *study* and *learn* could take respectively only the one or the other phrase.[14]

(36) a. She taught French to me for 2 years. b. She taught French to me in 4 years.

Teach then is analyzed here as a polysemous verb with two senses having different disposition sectors, those respectively for an activity and for an accomplishment. Attentional factor 1 applies here as well: The conceptual complex in the common core meaning of the two senses is more salient than the different aspects in their disposition sectors.[15]

5.3 *A Noun's Gender*

A third grammatical property with both external and internal characteristics is masculine/feminine gender in nouns, as in many Indo-European languages.[16] Externally, the gender of a noun can determine

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[14] Green (1974) and Oehrle (1976) claim in effect that constructions like *teach French to me* and *teach me French*—with a PP or an indirect object—are respectively an activity and an accomplishment. Though possibly a tendency, this claim is generally faulted by the fact that the PP construction seen in (36) can occur with either the *for* or the *in* phrase, and that the same holds for the indirect object construction, as seen in (i). That is, each construction can be interpreted as either an activity or an accomplishment.

(i) She taught me French for 2 years. b. She taught me French in 4 years.

[15] By an alternative interpretation, *teach* here is neutral to the two aspect types, without polysemous senses that respectively represent each type within either their disposition sectors or their core meanings. A clause's aspect is then determined solely by the external temporal phrase or the context.

[16] The discussion here will refer simply to nouns rather than more accurately to noun roots and gender-specific noun-forming derivational affixes.

cooccurrence patterns involving the noun's own inflections as well as (the morphology of) determiners, adjectives, pronouns, and verbs in construction with the noun.

Internally, such gender has certain semantic characteristics. The grammatically masculine and feminine genders are respectively associated with the concepts 'male' and 'female'. This association presumably originates in the fact that in a sex-gendered language, most nouns with a reference to male or to female animate beings in their core meanings respectively have grammatically masculine and feminine genders. This is the case, for example, with the German nouns for a man, brother, or rooster on the one hand, and for a woman, sister, or hen on the other.

But something of this association apparently extends to nouns that refer in their core meanings to inanimate entities without sexual differentiation but that still have grammatically masculine or feminine gender. Thus, Boroditsky, Schmidt, and Phillips (2003) show that language users often conceptualize the referents of such nouns with characteristics stereotypically associated with maleness or femaleness.

For example, Spanish speakers asked to name properties they associate with a bridge—in Spanish, the masculine noun *puente*—provided the following adjectives: big, dangerous, enormous, expansive, grand, laborious, large, long, secure, solid, spanning, strong, sturdy, thrilling, towering. But speakers of German—whose noun *Brücke* is feminine—provided these adjectives: beautiful, desirable, elegant, fragile, peaceful, pretty, short, slender, awesome, ex-tended, narrow, paved, useful, congested, heavy, metal. Many of the speakers are evidently influenced by the gender of the noun in their language for the characteristics they associate with the core referent.

Under our analysis, the Spanish and German nouns *puente* and *Brücke* exhibit core sharing with their common concept of a bridge as their core meaning, but this concept excludes sex. Their differing disposition sectors, though, include concepts respectively of maleness and of femaleness. In accord with this analysis, language users do not regard a bridge as actually male or female but at most merely tinge this sexless core concept with the sex-specific disposition sector concept.

And attentionally, in accord with factor 1, the concept of a sex-neutral inanimate entity in a noun's core meaning seems more salient than the concept of a specific sex in its disposition sector, where it reflects the noun's grammatical gender.[17]

Section 1.2.2 described a progressive decrease in thematic relatedness between the concepts in a morpheme's core meaning and its successively cited sectors, and the present case exhibits the smallest degree so far. A particular associated sex has little thematic relation to a sex-free entity. Such thematic independence in a morpheme's associated meaning becomes even more pronounced in the next section.

6 Core Meaning and Attitude Sector

Apart from the concept it represents in its core meaning, a morpheme can be lexicalized to represent the the speaker's attitude. In our analysis, this is represented in a morpheme's attitude sector, the fifth sector within a morpheme's associated meaning.

Morphemes can have the same or comparable core meanings while differing in their attitude sectors. And a speaker can choose to use one of those morphemes over the alternatives so as to express his attitude—or, more accurately, to express an attitude that he wants to present himself as having.

Such attitude is here understood as a cognitive complex present in the speaker at the time of speaking, consisting of feelings, desires, evaluations, or beliefs. This attitude can be undirected,

[17] The conclusion here would be stronger on finding a single language with either two nouns or two senses of a single noun that share their core meanings but differ in gender, yet yield the same experimental findings.

consisting of the speaker's current state of mind. Or it can be directed, where it is mainly toward four types of phenomena pertaining to the morpheme. These are the speaker's attitude toward the morpheme's core meaning, toward the morpheme's current hearer, toward the circumstance in which the morpheme is being used, or toward the morpheme's other users. These four alternatives are treated in order in the first four subsections below.

The notion intended here for speaker attitude within an attitude sector is comparable in character to the earlier linguistic notion of "stance" (e.g., Englebretson, 2007). The main difference, though, is that stance is generally seen as expressed directly by the core meaning of a morpheme or word, as with forms like *surprisingly, unfortunately, perhaps*. But an attitude sector is just part of the associated meaning of a morpheme whose core meaning represents some other concept.

Our attitude sector also bears some relationship to the traditional linguistic notion of "register" (e.g., Halliday et al, 1964, Biber, 2019). Register largely concerns which lexical forms and constructions among alternatives are appropriate to certain types of context and societally recognized categories within those types. One main type of context is the situation in which a discourse occurs, and categories within this type can vary with respect to degree of formality, setting (e.g., a sports bar, a courtroom), and genre (e.g., a political speech, a mystery novel).

But register theory tends to regard a form's suitability to a particular situation as an extra fact about that form rather than as an intrinsic part of its lexicalized meaning. And it tends to objectify the analysis, considering the determining factor to be the external situation, rather than the speaker's choice of which form to use on the basis of its meaning and on whether he wants to express that meaning in the surrounding situation. Similarly, corpus-based statistics on the occurrence of particular forms in certain situations do not directly address a speaker's cognitive processing in the moment of choosing those forms but summate such choices after the fact (though they are fully useful for inferences about such cognitive processing).

By contrast, the speaker attitude represented within a morpheme's attitude sector is here understood as subjective and internal to the speaker's cognition. Insofar as it pertains to the surrounding situation, it represents the speaker's current personal attitude toward that situation, and the speaker selects among morphemes in order to express that attitude.

This difference between an external and an internal perspective can be illustrated for the so-called formality scale. When dichotomous, register here would divide external situations into formal and informal types, and different morphemes would be selected for use in each type. But by the analysis adopted here, such an external situation type can to a great extent be traced back upstream to speaker attitude. Thus, a so-called formal situation that triggers the use of a formal-register morpheme is here thought to be better treated as a situation in which the speaker has a feeling of respect toward either the context or the addressee, and chooses a morpheme lexicalized to represent that attitude of respect. Our focus thus largely shifts from situation type to speaker attitude.

Now, there may still be certain cases analyzable as genuinely dependent on an external situation regardless of any speaker attitude. A potential example of this, cited by Fillmore (e.g., 1982), is the use of *(the) decedent* in a legal context, as opposed to the use of *(the) deceased* elsewhere. One way to treat such cases would be to posit a sixth sector within a morpheme's associated meaning, one in fact of "register", that would indicate the situation for which the morpheme is most suited. An alternative, though, might be to extend the scope of the attitude sector. The word *decedent* would then be regarded as lexicalized to indicate that a speaker using it has a certain special attitude about a legal context. The remaining discussion largely invokes the second alternative, but the choice is left open.

In addition, a morpheme can have further types of associations not clearly assignable to either speaker attitude or external situation. A morpheme might, for instance, be associated with a nonlocal dialect, like the Brittishism *snog*; with another era, like the obsolescent *betwixt*; or with a particular genre, like a fantasy novel's *mage*. One might propose a potentially seventh sector of "atmosphere" to cover the atmospheric effects that such associations provide. Or, once again, the attitude sector might be extended to include such effects on the grounds that a speaker feels a certain way toward the additional association.

A morpheme with none of the above kinds of indications in its plenary meaning might be considered to be neutral with respect to speaker attitude and to lack an attitude sector. But the position adopted here rather is that such a morpheme does have an attitude sector, though one indicating the absence of any special speaker attitude (or context), so that the morpheme is lexicalized to indicate that it is **ordinary**. On this view, accordingly, all morphemes have an attitude sector.

As sequenced, the five sectors have decreased along the parameter of their necessity to the core meaning, from the most indispensable down to the most nonessential. The attitude sector in fact has the lowest ranking, since a morpheme's core reference can stand alone regardless of any attitude toward it that a speaker might have. The attitude sector is also at the lowest level on the parameter of thematic relatedness. This is because the attitude that a speaker may happen to have toward a core referent is thematically independent of that referent, and his attitude toward the hearer, toward the circumstance, toward other users, or as an undirected state of mind is all the more independent of it.

Attentionally, more than the preceding four types of sector within a morpheme's associated meaning, the attitude sector can seem to rival or in some cases even outweigh the core meaning in salience. This effect is in part due to a distinctive form of vividness, immediacy, and directness of impact that the affective portion of the speaker's attitude represented in the attitude sector can have. Among the types of attitude sector treated below, such strong salience is especially evident in child-directed, slang, and expletive forms. Expletivity may in turn surpass the other types in attitude strength and be especially likely to outweigh a core meaning. We accordingly introduce a new attentional factor 8 in the subsection on explitivity that can override factor 1.

The following subsections address first the four types of directed speaker attitude, then certain elaborations of the attitude system, then expletivity, and finally the expression of attitude in a morpheme's core rather than its attitude sector.

6.1 *Speaker Attitude Toward a Morpheme's Core Meaning*

We first consider the case of a morpheme lexicalized to represent the speaker's attitude toward its core meaning and, where the morpheme has an instantiated referent, toward that as well. One type here is a pejorative morpheme, where the speaker dislikes the core meaning or referent and is disparaging or contemptuous toward it. Such morphemes span at least the major lexical categories. Thus, as seen in (37), beside the attitudinally (neutral or) ordinary noun *dog* is pejorative *cur*; beside the ordinary adjective *small* (in amount) is pejorative *paltry*; and beside the ordinary verb *(to) complain* is pejorative *(to) bitch*.[18]

(37) a. I saw your dog / cur eating garbage in an alley.
b. The pay their boss gives them is small / paltry.

[18] While the pejorative morphemes in these examples all have specific referents, they need not, as in sentences like *A paltry supply of bandages in this hospital would be terrible if it ever occurred*, or *There was no bitching by anyone at the event*. It is for this reason that the speaker's attitude is here characterized as directed basically toward the core *meaning*.

c. Customers called all day long complaining / bitching about their high gas bills.

The three pejorative morphemes above can be analyzed as having roughly the same core meanings as their ordinary counterparts—thus exhibiting core sharing with them—but as also having attitude sectors representing an attitude of disparagement by the speaker toward those core meanings. The particulars of the disparagement depend on the morpheme. Thus, the speaker saying *paltry* strongly dislikes the smallness of the amount at issue, feels that it should be substantially greater, and blames the agency responsible for its smallness, while the speaker saying *(to) bitch* dislikes the complaining, feels that it should not have been done in the first place, and is angry at the agent responsible for doing it.

Attentionally, the speaker's attitude in the attitude sectors of such pejorative morphemes can be quite salient but, in accord with factor 1, seem still less so than the core meanings, which retain their salience as well. Thus, while *paltry* may be replete with disparagement, it still clearly refers to smallness of amount.

Cross-venue factor 2 can also be seen to hold. For example, the concept of disparagement is more salient when it occurs in the core meaning of a morpheme like *scorn* than when it occurs only in the attitude sectors of, say, *cur, paltry* or *bitch*.

6.2 *Speaker Attitude Toward a Morpheme's Hearer*

We next consider the case of a morpheme lexicalized to represent the speaker's attitude toward the morpheme's hearer, that is, toward the individual to whom he is addressing the morpheme. Three types of such hearer-directed attitude might be distinguished, listed in (38).

(38) Types of speaker attitude toward a morpheme's hearer
type 1: The speaker has a certain affect toward the hearer and wants to convey that to her.
type 2: The speaker wants to present himself to the hearer as being a certain kind of person.
type 3: The speaker wants to engender a certain kind of affect in the hearer.

We can here illustrate the type-1 speaker attitude toward the hearer (the other types will be illustrated later). One example of this type occurs in certain morphemes used by an adult speaker addressing a child hearer in what is commonly called "child-directed speech" (e.g., Snow and Ferguson, 1977). Such a morpheme may in part be genuinely lexicalized for specific use in an external adult-to-child situation—content that could be assigned either to an extended attitude sector or to a separate register sector (as with the word *decedent* earlier).

But possibly in all such cases, the morpheme is further lexicalized to represent the speaker's type-1 feeling of endearedness or comparable child-oriented regard toward the hearer, together with his desire to convey that feeling to the hearer—content squarely within the attitude sector. In its core meaning, at the same time, the morpheme represents the same concept as in a situationally and attitudinally ordinary morpheme, with which it thus shows core sharing.

As before, such child-oriented morphemes span the major lexical categories. Thus, as seen in (39), beside the ordinary noun *train* is the child-oriented noun *choo-choo*; beside the ordinary adjective *small* is the child-oriented adjective *itsy-bitsy*; and beside the ordinary verb *leave* is the child-oriented verbal expression *go bye-bye*.

(39) a. Look at that train / choo-choo go across the bridge.

b. See that small / itsy-bitsy ant on the flower?
c. Grandma's leaving / going bye-bye now.

Examples like these support the distinction our analysis has made between a speaker's attitude toward a morpheme's hearer and that toward its core meaning. The endearedness that the speaker here feels toward his addressee need not extend to the core referent. Thus, the sentences in (39) are still well-formed even if their speaker has a non-endeared attitude respectively toward the train, the ant's smallness, or the grandmother's departure.

We above distinguished between the external situation of an adult speaking to a child and the speaker's attitude of endearedness toward the child, proposing that both these elements are present in the attitude (and register) sector of a child-oriented morpheme. Some examples may tease the two elements apart and show that both are needed for such a morpheme to be used. Thus, if the external situation alone licensed such morphemes, the head of a daycare center should be able to use them, as in (40a), when collectively addressing a group of children. But it seems likelier that the speaker would use ordinary morphemes, as in (40b), since the children's large number is less suited for showing endearedness.

(40) a. Children, please put all your choo-choos away and get ready to go bye-bye.
b. Children, please put all your trains away and get ready to leave.

Complementarily, if an attitude of endearedness alone licensed such morphemes, a speaker who on some occasions produces utterances to a beloved dog could readily address the dog with one, as in (41a). But the speaker, not in fact addressing a child, seems likelier to use an ordinary morpheme, as in (41b).

(41) a. I'm going bye-bye now. b. I'm leaving now.

With regard to attention in a child-directed morpheme, the attitude (and register) sector's representation of adult-to-child address and of a type-1 speaker attitude of endearedness to the hearer may be especially salient. But the core meaning seems to maintain its salience as well. Thus, while *choo-choo* may be redolent with child directedness and endearedness, it still clearly refers to a train.

6.3 *Speaker Attitude Toward a Morpheme's Circumstance*

We thirdly consider the case of a morpheme lexicalized to represent the speaker's attitude toward the circumstance in which she uses the morpheme. One type of such lexicalization perhaps occurring mainly in verbs—what we will call the **free-and-easy attitude** type—may be previously unrecognized. In it, the speaker represents herself as feeling casual, nonchalant, or easygoing about the circumstance in which she produces her utterance, and as having an undemanding or low-pressure regard toward it. She further suggests that any burden from performing the verb's action would be slight and, in a type-3 attitude toward the hearer, wants the hearer to feel unconcerned about any such burden.

English has a certain number of verbs lexicalized to express this free-and-easy attitude. Each such verb has a core meaning representing a particular action, as well as an attitude sector representing the speaker's casual attitude toward the circumstance of that action. And it can generally be matched with a verb having the same core meaning while lacking such an attitude sector—that is, while being attitudinally ordinary. To illustrate, each sentence in (42) shows an ordinary verb paired with a corresponding free-and-easy verb.

(42) a. I'll just go / bop down to the store to pick up some sauce for the pasta.
b. Could you move / scooch over a bit so I can squeeze in? (e.g., to someone seated on a bench)

In addition, English seems to have a relatively productive pattern of setting up otherwise existing verbs as free-and-easy attitude counterparts to ordinary attitude verbs, thus adding a new sense to their prior polysemous range, as seen in (43).

(43) a. The car door's already open—you can just get / hop in.
b. You can just put / toss your jacket over the back of the sofa <host to guest>
I'll put / toss some clothes on and meet you there in 20 minutes. <over phone>
c. Could you get / snag me that piece of toast that just popped up?
d. Just put / slap the return voucher on the carton and ship it back.
e. Could I just pass / sneak through here? <to seated diners in crowded restaurant>

Attentional factor 1 seems once again to hold squarely for a free-and-easy type morpheme, with the core meaning more salient than the attitude in the attitude sector. For example, the nonchalance of *bop* does not seem to outweigh its basic reference to locomotion.

6.4 *Speaker Attitude Toward a Morpheme's Other Users*

We lastly consider the case of a morpheme lexicalized to represent the speaker's attitude toward the morpheme's other expected users. A **slang** morpheme can be interpreted as having this type of lexicalization. Presupposed by the speaker here is that the members of a particular minority group, which includes himself, share the use of this morpheme, while outside speakers largely do not use it. Specifically, then, the speaker has an attitude toward the minority group of solidarity and identification with it.

The complete attitude sector of the morpheme then differs in accord with the category of the hearer. If the speaker addresses the morpheme to a fellow ingroup member, it expresses the same two directed attitudes as a colloquial morpheme (see next): a type-1 attitude of closeness toward the hearer and an attitude of informality toward the circumstance. It may further convey a type-1 attitude of fellowship with the hearer. But if addressed to an outsider, it may instead express a type-1 slighting attitude toward the hearer as a member of the majority that, he may think, stigmatizes the minority. It may also express a type-2 desire by the speaker to present himself as a minority member, perhaps to flaunt that membership.

Examples of slang morphemes are ones used by speakers broadly identifying with U.S. hippies beginning roughly in the 1960's, which again cover the major lexical categories. Thus, beside the ordinary noun *police* and sharing its core meaning is the slang noun *fuzz*; beside the ordinary adjective *good* is the slang adjective *groovy*; and beside the ordinary verb *understand* is the slang verb *dig*.

When a slang morpheme is used by a speaker with another ingroup hearer, it may easily accord with attentional factor 1—the hearer may readily attend more to the morpheme's core meaning than to the slanginess of its attitude sector, which she might have become habituated to through regular use. But an outside hearer might attend to the slanginess to a degree that rivals the degree of attention to the core meaning.

6.5 *Multipartite and Parallel Attitude Sectors*

In the main, our account so far has been relatively simple, pairing an ordinary morpheme with another single morpheme whose attitude sector represents one speaker attitude from a small set of types. But greater complexity is to be found in attitude sectors, which can be multipartite or parallel, as addressed next in order.

6.5.1 A Multipartite Attitude Sector

A morpheme's attitude sector can contain not just one kind of speaker attitude, as largely seen so far, but two or more kinds concurrently. For example, what might be called a **colloquial attitude sector** can be analyzed as consisting of three speaker attitudes, two directed and one undirected.

First, the speaker has a type-1 attitude toward the hearer of feeling ease and closeness toward him and wanting him to know this. Second, she has an attitude toward the circumstance of feeling informality toward it. And third, she has the undirected state of mind of feeling like one of the common folk as opposed to haughty or snobbish. Accordingly, a speaker would be less likely to utter a colloquial morpheme in a courtroom to an intimate, in a coffeehouse to a stranger, or in a coffeehouse to an intimate while feeling self-important.

Morphemes with this combination of speaker attitudes in their attitude sector can, as before, span at least the major lexical categories and often share their core meanings with ordinary-attitude morphemes. Thus, as seen in (44), beside the ordinary noun *toilet* is the colloquial noun *john*, beside the ordinary adjective *crazy* is the colloquial adjective *batty*, and beside the ordinary verb *leave* is the colloquial verb *scram*.

(44) a. Where's the toilet / john around here?
b. When I met your aunt—she seemed kind of crazy / batty.
c. Oops, it's late, I have to leave / scram.

For an even more complex case, illustrated in (45), consider the noun *pooch*, whose core meaning is 'dog'. Its attitude sector includes the three just-cited speaker attitudes, so it is at least colloquial. But that sector can be interpreted as additionally including a directed speaker attitude of affection toward the core referent and a further undirected attitude, the state of mind of feeling silly.[19]

(45) How's your dog / pooch doing these days?

Like slang, a colloquialism has a bifurcated attentional profile. In its appropriate context—basically, when an easygoing speaker uses it in an informal setting to a friendly hearer—the hearer's attention will be readily drawn more to the core meaning than to the attitude sector. But outside such a context, the colloquiality of its attitude sector may rival the salience of the core meaning to a listener.

6.5.2 Parallel Attitude Sectors

So far, an ordinary morpheme has been paired with a single other morpheme that shares its core meaning while having an attitude sector with special contents. But a number of such other morphemes can occur in parallel, each with different contents in its attitude sector. A speaker wanting to express that core concept

[19] Another word whose attitude sector might be judged to include a speaker's undirected attitude of feeling silly is *oodles*—as in *I had oodles of fun there*—which has the same core meaning as the word *lots*.

can select among alternative morphemes for the most relevant attitude (E. Clark, 1997). In such parallel morphemes, the salience of the attitude sector relative to that of the core varies in accord with the type of speaker attitude lexicalized there.

To illustrate, beside the attitudinally ordinary verb *leave* is colloquial *scram*, hippie slang *split*, child-directed *go bye-bye*, and jocular *skedaddle*.

Or consider the concept perhaps expressed most ordinarily by the phrase *very small* (in size). Several adjectival morphemes have this concept as their core meaning while also having attitude sectors representing a range of different speaker attitudes. Thus, in using the morpheme *tiny*, the speaker expresses an attitude toward the core meaning of amazement over its extremeness (seen also in the morpheme *huge*). With *puny*, the attitude is pejorative, one of contempt toward the core referent. With *itsy-bitsy*, as seen, the attitude can be one of endearedness toward a child hearer. With *teeny*, the speaker might be expressing the multipartite attitude complex earlier labeled "colloquial", while with *teensy-weensy*, she might be adding a sarcastic state of mind as an undirected attitude. And with *minuscule*, the attitude is one of regard for the officialness of the circumstance.

Such multiplicity of morphemes that exhibit core sharing across differences within a sector seemingly tends to be much greater for the attitude sector than for the other four types of sector considered here. The basis for this apparent tendency is that a given concept can be readily associated with a greater diversity of attitudes concerning it or its use than of holistic structures containing it, infrastructures underlying it, collateral structures accompanying it, or dispositions inflecting it.

6.6 *Expletivity*

The last type of attitude sector in a morpheme considered here contains a speaker attitude complex that we will call **expletivity**. A particular component of such expletivity may be especially able to outweigh the morpheme's core meaning in salience. This component might be characterized as an intense emotional experience of charge, punch, bite, or wallop. The speaker has both an undirected state of mind consisting of this experience and a type-3 hearer-directed desire to evoke the experience in his addressee.

This special experience accompanies certain further speaker attitudes within the expletivity complex. among these, the speaker using an expletive morpheme has both an undirected attitudinal state of feeling like a tough guy/gal who flouts the norms of polite society, and a type-2 hearer-directed desire to present himself as such a person to his addressee. Second, as with slang, the speaker's attitude depends on his interlocutor. A speaker using expletives with an interlocutor also doing so may have a type-1 feeling of solidarity with her. But with a non-swearing interlocutor, he may have a type-3 hearer-directed desire to provoke or scandalize the addressee or affront her bourgeois sensibilities. Finally, in perhaps most cases, but not all, the speaker may have a pejorative attitude toward the morpheme's core referent.[20]

The core meanings of morphemes with expletivity in their attitude sector seemingly tend to pertain to sex or excretion or to persons with certain characteristics commonly involving ethnicity, race, gender, sexual orientation, or disability. The first two of these are illustrated for English in (46). The three morphemes in each set have the same core meaning, but the first is ordinary or learned, while the second and third have respectively mild and strong expletivity. These second and third morphemes in each set in fact demonstrate the scalar character of expletivity—a characteristic presumably present as well in all the types of attitude sector seen earlier but readily exemplified here.

[20] Though they do not specifically cite attentional effects, Pinker (2007) and Bergen (2016) propose expletivity properties in some respects comparable and in other respects complementary to those proposed here.

(46) a. make love / screw / fuck
b. penis / dick / cock
c. vagina / pussy / cunt
d. stool / crap / shit
e. urine / pee / piss

Triplets like these show an accord with the earlier-noted thematic independence, even unrelatedness, of a morphemes attitude sector from its core concept. Thus, the emotional punch found most strongly in the third morpheme of these triplets is not due to any intrinsic punch held by the morpheme's core referent. Demonstrating this is the fact that the initial morpheme of each triplet has the same core referent without such punch. Rather, the third morpheme is specifically lexicalized to represent or to engender great emotional charge with another part of its plenary meaning, its attitude sector.[21]

With respect to attentional structure, the salience of the emotional charge component of expletivity in a morpheme's attitude sector can be so great—seemingly greater than the other attitude sector types—that it may exceed that of the morpheme's core meaning itself. A hearer's attention might thus be more drawn to the expletivity of a morpheme than to its basic referent. Any such surplus of attitude sector over core salience due to affective intensity is here attributed to a new attentional factor, factor 8, which may then provide the only competition to factor 1 and be able to override it.

Like factor 1, this new factor is dichotomously comparative because it contrasts the salience of a morpheme's attitude sector with that of just one other portion of the morpheme's plenary meaning, its core concept. And it is of the same-venue type because the two contrasted portions of meaning are presented at once by the same single morpheme.

6.6.1 Expletivity Spread

Expletive morphemes—unlike morphemes with other kinds of attitude sectors—seem to foster a unique type of sector sharing. This type, firstly, has the same-form pattern—the shape of the morpheme in its original sense stays constant through the addition of new senses. Secondly, the new core meanings are generally unrelated to the original core meaning.

For instance, additional senses of the verb *fuck* or different collocations that the verb is part of can share in common the full expletive punch of the original in their attitude sectors, hence exhibiting sector sharing. At the same time, their core meanings express concepts generally unrelated to the original verb's core reference to sexual intercourse.

One example is the participial form *fucked* 'doomed'. Other examples are verbal collocations like *fuck off* 'leave', *fuck up* 'botch', *fuck around* 'behave frivolously', and *fuck over* 'maltreat'.[22]

[21] The same property can be seen in the other attitude sector types. Thus, there is nothing in the core concept of 'small in amount' requiring the speaker attitude of disapproval present in *paltry*, nor in that of a 'train' requiring the endearedness of *choo-choo*, nor in that of 'slide sideways while seated' requiring the free-and-easiness of *scooch*.

[22] Two observations apply here. First, forms like these show that core concepts outside the usual set noted above—ones pertaining to sex, excretion, etc.—can also be subject to expletivization.

Second, it is true that English has many semantically divergent collocations based on a single verb. For example, based on *turn* 'rotate' are: *turn in* 'go to sleep', *turn out* 'eventuate as', *turn up* 'find'. But unlike the expletive set, a collocation set of this sort does not also express some single strong concept in common.

Labeling this effect **expletivity spread**, we can propose a basis for it. The great intensity of the original morpheme's expletivity in the attention of speakers may lead them over time to use the morpheme for the sake of that attentional intensity while applying the morpheme to other referents.

This proposal that expletivity per se drives such spread has two sources of support. First, spread is likewise exhibited by other expletive morphemes. Examples are the verb *piss* as in *piss off* 'anger', *piss away* 'waste', and British *pissed* 'drunk', as well as the noun *shit* 'belongings, stuff'. Of note is the fact that the verb *screw*—which like *fuck* refers at core to sexual intercourse but at a milder degree of expletivity—can in fact replace *fuck* in all but one of the cases just cited (not with *off*) to yield forms whose core meanings are exactly the same but whose expletivity is at the milder level.

Second, morphemes with non-expletive attitude sectors seem not to exhibit such spread. For example, with regard to pejorative morphemes, it seems unlikely that the noun *cur* would come to be used to refer to a cat that one holds in contempt. And the verb *bitch* seems unlikely to acquire a sense that retains its attitude sector's pejorative attitude but associates that with a core concept of, say, saying something funny, so that a speaker would use the morpheme to refer disparagingly to someone's telling a joke. Or with regard to child-directed morphemes, the noun *choo-choo* seems unlikely to add a sense that keeps the child-directed endearedness in its attitude sector while changing its core concept to that of, say, a bus or pajamas.

This seeming absence of spread in morphemes with non-expletive types of attitude sector may in turn lend support to the proposition that such morphemes follow attentional factor 1, with their core meanings maintaining greater salience than their attitude sectors.

6.6.2 An Attentional Principle of Norm Divergence

Attentionally, factor 8 can be taken as one realization of a more general attentional principle, here termed **norm divergence**. Broadly, this principle holds that a phenomenon's divergence from certain norms tends to foreground it. More specifically, a perceived or conceived phenomenon that falls along a particular relevant parameter tends to attract greater attention to the degree that it deviates from the norm on that parameter. Four parameters seemingly subject to this principle—here labeled for both norm and deviation(s)—are those of neutral affect vs. affective intensity; ordinariness vs. unusualness; genericness vs. specificity; and average significance vs. importance or unimportance (for further analysis, see Talmy, 2018a, section 7.2.2 under the header "Salience-associated parameters").

The phenomena that can exhibit such norm divergence range from sensory percepts to linguistic content of any scope. But to illustrate the four parameters here, we consider only the core concepts of individual morphemes.

Thus, relative to cultural and other experiential norms, a morphemic core referent with greater affective intensity tends to evoke greater attention than one with lesser intensity, as the referent of *scream* does relative to that of *shout*, as in (47a). While both these verbs indicate vocal loudness, *scream* also indicates emotional distress whereas *shout* does not. Comparably, a more unusual referent tends to attract greater attention than a more ordinary referent, as the referent of *hop* does relative to that of *walk*, as in (47b). While both these verbs indicate a manner of locomotion, that of walking is the default manner for a person, whereas that of hopping is rare. And a more specific referent seemingly tends to attract greater attention than a more general referent, as the referent of *drown* does relative to that of *die*, as seen in

(47c). Both verbs here equally refer to 'death', but *drown* adds in the specific mechanism of liquid inhalation.[23]

(47) a. She screamed / shouted to me.
a I hopped / walked to the store.
b He drowned / died.

And the fourth parameter of 'importance' exhibits attentional increase by both upward and downward deviations from the norm. Thus, in (48a), the referent of *indispensable* evokes greater importance through the idea of necessity, and so attracts more attention than the relatively neutral word *additional*. Conversely in (48b), the referent of *incidentally*, through the idea of 'non-relevance', and the referent of *happened to*, through the idea of 'randomness', both call for a sense of lesser importance, and so foster a heightened level of attention in comparison with the counterpart neutral sentence laccking these forms.

(48) a. The indispensable / additional ingredient is zinc.
b. Incidentally, I happened to spot Helen downtown today. / I spotted Helen downtown today.

A possible evolutionary basis for the attentional principle of norm divergence is that an organism can benefit from greater examination of any phenomenon less familiar, frequent, common, or typical in a given context so as to assess its potential significance, positive or negative, to the organism.

The general attentional principle of norm divergence, then, has a particular realization as the specific attentional factor 8. In particular, one of the four parameters, that of affective intensity, is applied to the attitude sectors of morphemes, especially to those expressing expletivity.

An additional phenomenon can be seen at work here—attentional competition (see Talmy, 2009b, section 3.3 for further analysis). It can be seen that factor 8 competes with factor 1, and that the norm-divergence principle competes with the significance principle. Here, either the former overrides the latter, or the hearer's attention is divided between the two.

6.7 *Attitude Represented in the Core Meaning vs. in the Attitude Sector*

The attitude sector's representation of attitude by the speaker can be put into relief by a contrast with the core meaning's representation of attitude—now not that of the speaker but that of the subject or other syntactically defined argument. A morpheme with such a core meaning can even express its attitude with the same degree of vivid intensity as seen for the attitude sectors of some morphemes. To illustrate, the verb *loathe* expresses an attitude of extreme dislike with vivid intensity, but ascribes that attitude to the subject, not to the speaker (and may accordingly be taken to have only an ordinary attitude sector). This is shown by the acceptability pattern seen in (49), where the further expression of a contrary attitude of liking is acceptable when made by the speaker, but unacceptable when made by the subject entity.

(49) She loathes her colleague, but I like him. / *but she likes him.

[23] To help isolate the effect of each type of norm without confound, the contrasting words in each example have largely been selected to differ mainly on the norm scale they are illustrating, while having roughly similar ranking on the other norm scales. For example, the words in (47b) that contrast in usualness are at roughly the same level of affective intensity and of specificity.

By exact contrast, the reverse acceptability pattern is seen in (50) for a morpheme expressing speaker attitude in its attitude sector. Here, the morpheme *paltry*, which expresses a speaker attitude of disparagement toward a small amount, is compatible with a further expression of approval toward that amount when made by the syntactically defined recipient, but not when made by the speaker.

(50) Her pay is paltry, *but I think it's generous. / but she thinks it's generous.

Through coercion, it does happen that an attitude originally ascribed by a morpheme to the speaker can be shifted to the subject or other syntactically defined entity. An example is shown in (51a), where a deprecatory attitude toward complaint is reassigned from the speaker to the subject. However, this process is not always feasible, as seen in (51b), where an attitude of endearedness toward a child cannot be shifted from the speaker to the subject.

(51) a. She felt that her friends kept bitching at her.
b. * The mom looked tenderly at her child and pushed the choo-choo toward him.

Apart from the core meanings of deictics, the attitude sector—and the register sector, if posited—may be the only divisions within a morpheme's plenary meaning that refer to the environment of a current speech event and, in that sense, are themselves deictic. The attitude sector identifies the attitude of the current speaker which in turn can pertain to the current hearer or circumstance. The other four sectors treated here relate only to the morpheme's core meaning and that relationship is fixed throughout the morpheme's usage. And the core meanings of non-deictic morphemes can at most index speech-internal referents.

7 Closed-Class Forms with Core and Associated Meanings

All the morphemes examined so far for their core and associated sectors have been of the open-class type—specifically, nouns, verbs, and adjectives. But closed-class morphemes exhibit the same divisions and attentional structures within their plenary meanings.

Now, the main finding of Talmy (2000a, chapter 1) was that, unlike those of open-class forms, the meanings of closed-class forms across languages are highly constrained, largely come from a universally available but limited repertory of conceptual categories with their individual concepts, and represent structure preponderantly more than content. Nevertheless, the plenary meaning of a closed-class form can be relatively sizable and conform to the partitioning and attentional patterns presented here. Accordingly, we next provide closed-class examples that compare a core meaning with each of the five sectors in turn.

7.1 *Core Meaning / Holistic Sector*

The closed-class particles *then* and *first*, as used in (52), can be analyzed as sharing the same holistic sector while foregrounding different parts of that in their respective core meanings, analogously to the open-class nouns *wife* and *husband* seen in section 2.3. In this usage, these particles belong to a lexical category that Talmy (2018a) terms "adverbial pro-clauses".

(52) a. She stopped at the store and then she went home.
b. She went home, but first she stopped at the store.

The conceptual content of their common holistic sector might be characterized as in (53). In the present examples, her stopping at the store is event 1, and her going home is event 2.

(53) Common holistic sector of the adverbial proclauses *then* and *first*
a. On the timeline, event 1 occurs earlier and event 2 occurs later, and no event occurs between these two.
b. Event 1 and event 2 are accordingly in immediate temporal succession, an equipotent relation.

And the core meanings of the two adverbial pro-clauses—which are different portions of their common holistic sector—can be characterized as in (54).

(54) Core meanings of the adverbial proclauses *then* and *first*
then: in the relation of posteriority that event 2 [represented in the same clause] bears to event 1 [represented in the preceding clause]
first: in the relation of anteriority that event 1 [represented in the same clause] bears to event 2 [represented in the preceding clause]

With regard to attentional structure, factor 1 holds here as well. To consider just the morpheme *then*, the core concept pertaining to event 2's occurrence after that of event 1 is more salient than the holistic sector's concept pertaining to the temporal succession of event 1 and event 2 in which they both occur equipotently.

7.2 *Core Meaning / Infrastructure Sector*

Much like the compass terms *east* and *north* in section 3.1, the closed-class satellites *up* and *down* in their directed-path usage—seen in (55)—are polysemous and have distinct senses with different infrastructure sectors. Moreover, these infrastructure sectors are comparably based on either a global or a local conceptualization of the earth, with a perspective point respectively distal from or proximal to its surface.

(55) The laboratory generated a neutrino beam that traveled straight up / down.

The globally based infrastructure sector has a conceptual complex that simply represents the earth as a sphere. In this case, the core meanings of the two satellites indicate a path respectively away from or toward the earth's center point. Here, an upward path is unbounded, able to procede indefinitely, whereas a downward path is bounded, able to procede only until the earth's center, after which it is upward—analogously to global *east* and *north*, respectively.

The locally based infrastructure sector has a conceptual complex involving the flat plane of the earth and an axis per-pendicular to that plane along which gravity acts. Then the core meanings of the two satellites indicate a path respectively against and with gravity. Here, both paths are conceptually unbounded, analogously to the local compass terms.

Attentional factor 1 again holds for these polysemous morphemes in either of their senses. For example, the core reference of local directional *up* to a path proceeding against gravity is more salient than the infrastructure sector's concept of the grid consisting of the flat earth plane and perpendicular gravity axis.

7.3 *Core Meaning / Collateral Sector*

The set of grammatical relations extant in any given language is a closed-class category , and we here consider one of its closed-class members, subjecthood. Treated as a morpheme in its own right, subjecthood is semantically polysemous. In one of its senses, the core meaning can be characterized as indicating that the entity serving as subject is an Agent within the action represented by the associated verb, and is the entity most determinative of that action. This property was cited for the verbs *sell* and *buy* in section 2.4.1, and for the verb *rent* in section 2.4.5.

To consider the latter case with its example (15), it can be observed that the subjecthood morpheme, in addition to the core meaning just cited, also has a particular collateral sector—specifically of the context type seen in section 4.1.2. In particular, this augment consists of the actions that the subject Agent might perform in association with the main action represented by the verb. Where that subject is the landlord, as in (15a), such associated actions might include preparing the apartment for new occupancy, advertising it, and interviewing interested parties. Where the subject is the tenant, as in (15b), the associated actions might include checking publicized listings, making phone calls, and visiting other vacancies. We hold that such additional actions are affiliated with subjecthood simply by observing that in (15a) and (15b), where each of the two Agents in the frame in turn is the subject, only the associated actions of the subject, not those of the nonsubject, are evoked.

These additional actions are clearly collateral because none of them need to have been undertaken for the sentences to be viable, as long as the apartment was in fact either given or taken. And in accord with attentional factor 1, this last core action is more salient than any collateral actions that may have been carried out.

7.4 *Core Meaning / Disposition Sector*

Section 5.1 proposed that the different open-class lexical categories of verb, adjective, and noun have disposition sectors representing their core meanings respectively as a process, an attribute, and a (reified) thing. Comparably, different closed-class lexical categories may have different disposition sectors. To consider one such case, a satellite or preposition has a disposition sector representing its core meaning as a relationship—prototypically, the spatial relationship of a Figure's path or site to that of a Ground.

And much as section 5.1 showed that a core meaning can be shared across open-class morphemes with different lexical categories, the same can be seen across open-class and closed-class morphemes. We can illustrate with the cross-form case of the open-class verb *enter* and the closed-class satellite *in*, as in (56). Both morphemes might be analyzed as sharing a core meaning pertaining to a path from the exterior to the interior of an enclosure. But their disposition sectors would cast this core concept respectively as a full process and as a pure relationship. This relationship must in turn be accompanied by a process, itself represented by a verb, as here by *go* (much like *abound* and *be abundant* in (33b).[24]

(56) I stood on the steps to the house and then
a. entered. b. went in.

[24] Lampert and Lampert (2013) analyze a comparable case in which the verb *keep*, the adverb *still*, and the satellite *on* share a core meaning representing force dynamics while differing in what we would here call their disposition sectors.

In accord with attentional factor 1, further, *in*'s core reference to a path from exterior to interior does seem more salient than its disposition sector's treatment of this path as a pure relationship.

7.5 *Core Meaning / Attitude Sector*

Section 6 illustrated the attitude sector only for open-class morphemes, but it can be seen in closed-class morphemes as well. Thus, the closed-class morpheme *so*, as in *That sequoia's trunk is so wide!*, basically has the core meaning 'extremely'. But it also has a disposition sector with a speaker attitude toward the core meaning (section 6.1). This attitude is here one of surprise or amazement, in this case toward the extremity of degree.

For another example, the case of speaker attitude toward a morpheme's other users (section 6.4) is seen in the closed-class slang form *hella*, as in *This is hella bad*, used by some speakers broadly identifying with U.S. teenagers from the period roughly around 2000 CE, beside the ordinary closed-class form *very*.

Attentional factor 1 appears to hold in both these cases in that the morpheme's core reference to a high degree along a scale seems more salient than the speaker's attitude of surprise or minority identification in the attitude sector.

In addition, the expletive spread seen in section 6.6.1 yielded only open-class forms, but it can also yield closed-class forms. Examples are the pronoun *shit* 'anything at all', as in *He doesn't know shit about that*, and the British slang pronominal phrase *fuck all* 'nothing at all', as in *He knows fuck all about that*.

As in other such forms, the strong expletivity in the attitude sector of the original morphemes here may well rival or outweigh the core meaning, in accord with attentional factor 8.

8 Lexicality Versus Compositionality

This study has looked solely within a morpheme at the semantic and attentional relations of its core meaning to its associated meaning. But the question arises whether the same relations can exist across morphemes within an expression. In particular, can a morpheme with the same core meaning but without the relevant associated meaning exhibit the same relations to morphemes around it that express that associated meaning? We use the term **lexicality** where this cannot happen and the term **compositionality** where it can. There seem to be cases where only lexicality applies, where either applies, and where only compositionality applies, and these are next addressed in turn.

8.1 *Lexicality Alone*

Under lexicality, the associated meaning of a morpheme can have certain semantic and attentional characteristics that cannot be expressed otherwise—they are available uniquely through lexicalization within the morpheme.

Consider first the expletivity expressed in the attitude sectors of morphemes like the third ones in (46)'s triplets. Their special semantic and attentional effect—in particular, the vivid immediacy of their punch—is apparently induplicable compositionally through an expression consisting of ordinary morphemes (with emphasis here on "ordinary" due to the type of expressions cited in section 8.2). Thus, the direct impact intrinsic to the expletive morpheme in (57a) cannot be achieved propositionally by the portion of discourse in (57b).

(57) a. They fucked.
b. They had sexual intercourse,
and I want you to experience an intense emotional punch about it.

The other types of speaker attitude lexicalized in a morpheme's attitude sector, as well as the genuinely contextual types there (or in a register sector), may also be induplicable in this way. Several failed attempts are shown in (58).

(58) a. i. The party last night was groovy.
ii. The party last night was good, and I identify with 1960's hippies.
b. i. Could you scooch over just a bit?
ii. Could you move over just a bit, and I'm feeling nonchalant about the situation.
c. i. The will left by the decedent will be read tomorrow.
ii. The will left by the deceased will be read tomorrow,
and I intend my use of the word "deceased" solely for a legal context.

8.2 Either Lexicality or Compositionality

In some instances, a conceptual complex can be expressed with approximate equivalence through either lexicality or compositionality. In the former case, it is expressed by a morpheme with core meaning X and associated meaning Y. In the latter case, it is expressed by a morpheme with core meaning X but without associated meaning Y in construction with a morpheme with core meaning Y. In this last type of morpheme, Y can be ordinary or represent a vivid speaker attitude—two cases treated next in order.

8.2.1 Ordinary Accompaniment

Consider first the collateral sector. The English morphemes *joist* and *stud* might be characterized as prototypically sharing a core concept of a linear wooden structural building element. At the same time, they have different encompassive spatial augments (section 4.1.1) in which that element is canonically horizontal and vertical, respectively. But an alternative English can be imagined in which (using the word *board* in its sense of a length of timber) those two structural elements are instead termed a "horizontal board" and a "vertical board". Such compositions are relatively close to the original morphemes in semantics and attention. Attentionally, the relation of lesser to greater salience borne by the collateral sector to the core meaning in the original morphemes has a parallel in the same relation borne by the modifier to the head in the phrasal compositions.

To some extent, the semantic and attentional characteristics lexicalized in a morpheme's disposition sector also have approximate compositional equivalents. Consider the type of disposition pertaining to a morpheme's lexical category (section 5.1). Both the adjective *brave* and the noun *courage* share a core concept of a person's acting boldly despite threat. The adjective is lexicalized to represent this concept as an attribute of the person, while the noun represents it as a phenomenon that the person possesses.

But the noun-forming suffix *-ery*, when added to *brave* to yield *bravery*, can be interpreted as having an abstract core meaning that includes the concept '[shift from attribute to] phenomenon-possession', so that the composition is now roughly equivalent in meaning to the single morpheme *courage*. Complementarily, the adjective-forming suffix *-ous*, when added to *courage* to yield

courageous, has a core meaning that includes the concept '[shift from phenomenon-possession to] attribute', so that this composition is in turn semantically equivalent to the single morpheme *brave*.

Moreover, the semantic contributions of the suffixes seem less salient than those of the root morphemes, much like the disposition sectors within those root morphemes relative to their core concepts.

8.2.2 Vivid Accompaniment

We now return to the attitude sector in the case where the speaker's attitude is especially salient with the distinctive vivid immediacy of the kind seen earlier—what we will call **vivid speaker attitude** or "VSA". Apart from morphemes with such a VSA attitude sector, languages can have a special class of modifying morphemes whose core meanings, in effect, express a distillation of such speaker attitude and salient vividness, freed from association with other concepts. Such morphemes will here be said to have a VSA core meaning.

Such modifying morphemes are generally adjectives, adverbs, or affixes able to occur in construction with morphemes having an ordinary attitude sector. Together these form compositional phrases or multimorphemic words with close semantic and attentional similarity to single morphemes having a VSA attitude sector. Such modifiers are not semantically ordinary morphemes and so escape the lexicality constraint cited in section 8.1.[25]

The semantic similarity is present because the combination of an ordinary morpheme expressing concept X in its core and a separate morpheme expressing speaker attitude Y in its VSA core is semantically close to a single morpheme expressing concept X in its core and speaker attitude Y in its VSA attitude sector. And they are attentionally similar because a morpheme with a VSA core is highly salient relative to its ordinary-morpheme head in the same way that a VSA attitude sector is highly salient relative to its morpheme's core.

To illustrate, we present three morphemes with a vivid-speaker-attitude core meaning. For the first of these, the adjective/adverb *damn* in one of its polysemous senses can be thought to distill out pure speaker disparagement in its core meaning, as seen in the lower of the three sentence pairs in (59). These sentences are semantically and attentionally close to the upper ones in those pairs that respectively contain the pejorative morphemes *cur, paltry* and (to) *bitch*.

(59) a. i. I saw your cur eating garbage in an alley.
ii. I saw your damn dog eating garbage in an alley.
b. i. The pay their boss gives them is paltry.
ii. The pay their boss gives them is damn small.
c. i. Customers called all day long bitching about their high gas bills.
ii. Customers called all day long with their damn complaining about their high gas bills.

Much the same holds for the adjective/adverb *fuckin(g)*—here treated as a lexical unit—expressing a distillation of pure speaker pure speaker expletivity, as in (60).[26]

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[25] Not treated here are exclamations consisting of a fixed single morpheme or phrase excerpted from compositional syntax, such as *God!* or *Damn!*.

[26] The alternatives within (ia) and (ib) show that the speaker expletivity expressed by this word is abstracted away from any speaker attitude pertaining to positive or negative evaluation.

(i) a. He was telling a fuckin(g) lie. / the fuckin(g) truth.
b. Our team fuckin(g) lost / won the game!

(60) a. I told him to fuck off.
b. I told him to fuckin(g) leave.

And the Yiddish noun suffix *-ele*, one of its two so-called diminutives, might be judged to fit this pattern. It expresses pure speaker endearedness either toward the noun's referent or toward the hearer, as in (61).

(61) a. Dos iz mayn shisele. This is my bowl-DIM. [The bowl is dear to me].
b. Es fun dayn shisele. Eat from your bowl-DIM.
[I say to a cat that is dear to me - regardless of my feelings about the bowl]

Morphemes with a VSA core meaning also have the speaker-sensitive property noted in section 6.7 for morphemes with a VSA attitude sector and illustrated there in (50). Thus in (62), the morpheme *damn* with its VSA core reference to speaker disparagement rejects a further phrase referring to speaker approval but accepts one referring to approval by the syntactically defined possessor.

(62) Her damn dog eats garbage, *but I love him. / but she loves him.

In addition, the coercion or shift seen in (51a) for a morpheme with a VSA attitude sector is also seen in (63) for *damn*, where the attribution of attitude to the speaker is shifted to a syntactically defined entity (here, the subject).

(63) He got so mad at it crashing that he slapped his damn computer
(*though he thinks it's an excellent one.) / (though I think it's an excellent one).

Morphemes with a VSA core meaning, however, may be limited in their semantic range. Such morphemes have just been seen expressing distillations of speaker disparagement, expletivity, and endearedness. But there may be none that purely express the speaker attitudes involved in, say, slang, colloquialisms, or, for that matter, in the expression of pure presence in a legal situation. If a limitation like this exists, such immediately vivid speaker attitudes are constrained to expression solely through lexicality, the subject of section 8.1

8.3 *Compositionality Alone*

Finally, certain vivid speaker attitudes may be barred from representation in a morpheme's attitude sector—that is, within the associated meaning of a single morpheme—and be expressible only compositionally. Two instances of this circumstance may be blasphemy and curse.

A blasphemous attitude might be characterized as a speaker's strong feeling of disdain or insult toward a divinity. If such an attitude is excluded from representation through lexicality, no language would have a morpheme that, say, has a core meaning referring to God together with an attitude sector expressing the speaker's negative attitude toward that core meaning. If such a morpheme existed in English—we might represent it as *Zod*—a sentence like (64a) might exist beside an acceptable compositional counterpart like that in (64b). But perhaps such a morpheme never occurs.

(64) a. *I don't believe in your Zod. b. I don't believe in your awful god.

A maledictive attitude can in turn be characterized as a speaker's strong wish for harm to befall someone (which may further imply a call on fate or a deity to bring that about). if this attitude were representable through lexicality, English might have a morpheme like "zie" that would express the concept 'die' in its core meaning and the wish for someone to undergo such death in its attitude sector, as attempted in (64a). But since English—and perhaps every other language—lacks such a morpheme, the intended curse must instead be expressed compositionally, as in (64b).

(65) a. *He will zie! b. May he die a thousand deaths!

9 Conclusion

Unlike what is suggested by their usually limited dictionary definitions, most morphemes in a language are laden with meaning—their "plenary meaning". That is, they are associated with a massive amount of conceptual content, where "conceptual" here covers a range of cognitive phenomena including ideation and affect.

Other works have addressed the ways that such semantically weighty morphemes interact when together in an expression—including the addition, reinforcement, blending, shift, or cancelation of certain portions of their meanings.[27] The present study instead focuses on extensive morphemic meaning in its own right and proposes a framework for its analysis.

The plenary meaning of a morpheme is not a simple aggregation of concepts but is highly structured. It is mainly structured through the mechanism of content patterning, which partitions the meaning into categories and subcategories in particular relations to each other. The principal division is between the morphemes core meaning and its associated meaning, whose relation is that of main to ancillary.

A morpheme's associated meaning can in turn be subdivided into at least five sectors. The core meaning bears a part-whole relation to the holistic sector. It presupposes but is not itself determined by the infrastructure sector. It is commonly but not necessarily associated with concepts in the collateral sector. It is conditioned by the semantic counterpart of the morpheme's grammatical properties in its disposition sector. And it or another component of the speech situation is the object of a speaker attitude in the attitude sector.

The plenary meaning of a morpheme is further structured through the mechanism of the stratification and distribution of attention—here, the patterns in which greater or lesser degrees of attention are allocated over its divisions. These patterns are here codified by three general attentional principles and eight specific attentional factors that fall under them.

The main attentional principle at work here, significance, holds that a linguistic entity with potentially greater effect on a speaker's current concerns is more salient than a related entity with less such potential. And the main attentional factor under it holds that the core meaning of a morpheme is generally more salient than its associated meaning or any sector therein. This follows from the general principle because a morpheme's core and associated meanings have respectively more and less potential to affect a language user concerned with communication.

[27] Examples in my own work include Talmy (2000b, chapter 5; 2005, section 4; 2007b, sections 2.2-2.3; and 2018a, section 1.7.1).

Another general attentional principle, norm divergence, holds that the degree to which a phenomenon diverges from certain norms tends to correlate with its degree of salience. And a specific attentional factor under this principle applies most to those types of speaker attitude within the attitude sector—especially that of expletivity—that are most vivid, that is, well above the norm in affective intensity. Where this is the case, the attentional principles of significance and norm divergence compete, with the hearer's attention divided between them or even tilted toward the attitude represented within a morpheme's associated meaning.

Overall, then, this study proposes a granular analysis of structure within morphemic meaning. This structure consists of the patterns in which the extensive conceptual content associated with a morpheme is partitioned into divisions in specific semantic relations and with certain differences of salience in accord with particular mechanisms and principles of cognition and language.

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