

Metaphoric Extension and Invited Inferencing in Semantic Change

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ABSTRACT: Two models of semantic change, *metaphoric extension* (Sweetser, 1990) and *invited inferencing* (Traugott and Dasher, 2002), have been offered as explanations for changes such as “see” > “know/understand”. In this paper, I will show that, while either model works for some of the changes, each model can explain changes that the other cannot. Metaphoric extension and invited inferencing can therefore be considered as two types of change rather than two competing theories. I furthermore suggest that changes such as “see” > “know/understand” occur when metaphoric extension and invited inferencing reinforce one another via *parallel chaining* (a concept adapted from Goossens, 2003).

Keywords: semantic change, invited inferencing, metaphor, primary metaphors, primary scenes, parallel chaining.

RESUMEN: Dos modelos de cambio semántico, la *extensión metafórica* (Sweetser, 1990) y la *inferencia invitada* (Traugott y Dasher, 2002), sirven para explicar cambios como «ver» > «saber/entender». En esta presentación, muestro que los dos modelos funcionan con un grupo determinado de cambios, pero cada modelo puede explicar unos cambios que no puede explicar el otro. Por consiguiente, se consideran la extensión metafórica y la inferencia invitada como dos tipos de cambio antes que dos teorías rivales. Además, sugiero que los cambios como «ver» > «saber/entender» ocurren cuando la extensión metafórica y la inferencia invitada se refuerzan por la *parallel chaining* (un concepto adaptado de Goossens, 2003).

Palabras clave: cambio semántico, inferencia invitada, metáfora, metáforas principales, escenas principales, *parallel chaining*.

1. Two Types of Semantic Change

In recent years, the linguistics community has been divided on how to describe semantic extensions like the sense of *see*, meaning “know/understand”, as in (1).

- (1) Oh, I *see* what you're saying. (www.whitehouse.gov/news/releases/2004/06/20040604-2.html)¹

Some attribute the extension *see* “know/understand” to metaphor (Sweetser, 1990; Haser, 2003), while others ascribe changes of this type to the metonymic process called *invited inferencing* (Traugott and Dasher, 2002), also termed *pragmatic inference* (Hopper and Traugott, 1993) or *metonymic extension via inference* (Koch, 1999). The debate over metaphoric extension versus invited inferencing has focused closely on extensions that can be successfully explained by either model of semantic change, such as the extension *see* “know/understand”. These examples give the impression that metaphoric extension and invited inferencing are competing explanations for the same set of changes.

I argue in this paper that metaphoric extension and invited inferencing should instead be considered as two different types of semantic extension, both of which must be recognized in a thorough account of semantic change. As evidence that metaphoric extension and inferencing are distinct processes, I discuss an example of invited inferencing that cannot be described as metaphoric extension, and an example of metaphoric extension that fails to work as invited inferencing. These unequivocal examples of the two processes reveal several distinct characteristics of each process not shared by the other. These characteristics, in turn, permit a more precise analysis of the disputed extensions like *see* “know/understand”.

The characteristics of metaphoric extension and invited inferencing show that extensions like *see* “know/understand” share the defining properties of *both* processes. These characteristics suggest that metaphor and inferencing may be working together to produce extensions like *see* “know/understand”, via a process of *parallel chaining* (a concept adapted from Goossens, 2003). I will refer to the set of extensions like *see* “know/understand” as the *metaphor/inferencing overlap*. The parallel chaining explanation of this overlap recasts the relationship between metaphoric extension and invited inferencing as one of potential cooperation, rather than pure competition.

2. The Contested Territory

As a brief overview of metaphoric extension, invited inferencing, and the overlap between the two, let us compare how the two models explain the extensions *see* “know/understand”, *warm* “friendly/affectionate” and the future-tense marker *going*.²

The extended senses of these three items are given in sentences (2)-(4).

- (2) Oh, I *see* what you're saying. (www.whitehouse.gov/news/releases/2004/06/20040604-2.html)

1. Italics in quotations throughout this paper are my addition. They are intended to draw attention to the extended senses of relevant lexical items.

2. For more in-depth explanations of metaphoric extension and invited inferencing, I suggest Sweetser (1990) on the former, and Traugott and Dasher (2002) on the latter.

- (3) She always has a friendly and *warm* attitude [...] (www.geocities.com/SouthBeach/Boardwalk/3265/DSindex2.html)
- (4) I'm *going* to stay here in America. (www.montereyrepublicans.org/PressReleases/index.cfm/ID/73.htm)

There is no question that these sentences involve extended, non-central senses of these familiar lexical items. In (2), the verb *see* must mean “know” or “understand”, since no one can literally “see” what someone is saying (at least not in a spoken language). Likewise, in (3), *warm* means “affectionate”, because an attitude cannot literally be “warm”; and in (4), *going* refers to a future intention, not to literal motion, because the speaker of (4) cannot both “stay in America” and be going somewhere else. Clearly, the meanings of these items in (2)-(4) are extended from the older, more central senses. But how did the extensions occur?

2.1. The Metaphor Model

On the metaphor account, the “know/understand” extension of *see* reflects the well-documented conceptual metaphor KNOWING IS SEEING (Sweetser, 1990). This extension may have begun in Indo-European, when the item **sek^w*- (> Eng. *see*) was used by a speaker as a novel metaphor to mean “know” (Sweetser, 1990: 33). The conceptual metaphor KNOWING IS SEEING was shared by both participants in this theoretical Indo-European conversation, which allowed the hearer to understand the verb *see* as meaning “know” in a context consistent with KNOWING, such as in example (2). The structured mappings of KNOWING IS SEEING allowed the hearer to find the counterpart of the visual source-domain meaning of *see* in the target domain of KNOWING, which is the meaning “know/understand”.

Synchronically, a speaker communicates the metaphor KNOWING IS SEEING to a hearer in much the same way, using a lexical item from the source domain (*see* from SEEING) with a target-domain meaning (“know/understand” in KNOWING). The hearer understands from the surrounding language or context that the lexical item *see* refers not literally to vision, but metaphorically to comprehension (Fass, 1997; Croft, 2003).

The metaphor model offers similar explanations of the senses of *warm* and *going* in (3) and (4). On this theory, *warm* reflects the metaphor AFFECTION IS WARMTH, and *going* involves CHANGE IS MOTION (Lakoff; Johnson, 1999: 50, 52-54).

2.2. The Invited Inferencing Model

The invited inferencing account of the extended senses in (2)-(4) is qualitatively different from the metaphor model. On the invited inferencing account, the extension of *see* to mean “know/understand” began with usages like (5).³

3. Of course, the extended sense predates written evidence of the item *see*, but the extension would have occurred in contexts similar to (5).

- (5) Nou wend and *seh* wher hit be. (c.1310, Anon., *Marina*)

Even before the item *see* had the extended meaning “know/understand”, the item *see* “visually see” invited the inference of “knowing” in contexts like (5). This is because if the addressee of (5) went to “see where it is” (the central meaning), the addressee would also “know where it is” (the inferred meaning). The context is ambiguous as to which of these two interpretations was intended by the speaker. In fact, the speaker probably intended for the hearer to understand both the literal meaning and the inferential meaning, and expected the hearer to both “see” and “know” the location in question.

Over time, the repeated use of *see* in contexts like (5) allowed the inferential pattern to spread throughout the language community, resulting in a *generalized invited inference*. This generalized inference then eventually became lexicalized as a polysemous sense of *see*.⁴

The invited inferencing account can explain the extended senses of *warm* and *going* in much the same way. Examples (6)-(7) represent ambiguous contexts which permitted reanalysis of *warm* and *going*.⁵

- (6) Oh take this *warme* kisse on thy pale cold lips. (1588, Shakespeare, *The Lamentable Tragedy of Titus Andronicus*)
 (7) I'm *going* to seek him Love Gregory, / In's lands where e'er he be. (1100-1500, Anon., *Love Gregory*)

In (6), *warm* could mean either physically warm, or “affectionate”. In (7), *going* means physically travelling around the lands, but it also refers to a future action of seeking. Examples like these form the basis of the metaphoric extension/invited inferencing debate. Invited inferencing, like metaphoric extension, provides a plausible explanation of extensions like *see* “know”, *warm* “affectionate” and the future-marker *going*. The next two sections put this metaphor/inferencing overlap in perspective by considering an extension which unambiguously represents invited inferencing, and one which unambiguously reflects metaphoric extension.

3. Unequivocal Invited Inferencing

Some semantic extensions can be explained as invited inferencing, but not as metaphoric extension. As an illustration, let us look at the sense of *seeing* that refers to romantic “dating” as in (8), a quote from an internet chat room.

- (8) I am *seeing* this really hot girl named Sarah. She is awesome. I just had to tell everyone. (www.fordtruckworld.com/Trucksnducks)

4. For more on these stages of development, see Traugott and Dasher (2002: 34-35, 44).

5. Traugott and Dasher (2002: 82 ff) offer a variety of excellent examples of *going* at various stages of the inferencing process.

On an invited inferencing account, the “dating” sense of *seeing* arose in two steps. First, the verb *see* accrued the extended sense “meet with”. This meaning was available as an inference, because visually perceiving someone is usually an essential and salient part of meeting with that person. As a result, ambiguous contexts such as (9)–(10) were frequent.

- (9) This is the Ladie which you came to *see*. (c.1593, Anonymous [Elizabethan], *Faire Em, A pleasant commodie of 1592*)
- (10) For he knew wel that Raymondyn his brother wold neuer loue hym nor *see* hym. (c.1500, compiled by J. D’Arras, tr., *Melusine*)

In (9) it is unclear whether the addressee is more interested in meeting with the lady in question or merely in seeing her. In (10) it seems evident that “Raymondyn” wants to avoid a meeting, as well as visual contact, with his brother. Both contexts are interpretable with either the central visual sense of *see* or the inferential “meet with” sense.

The “meet with” sense of *see* later became generalized and lexicalized, as evidenced by the possibility of modern examples like (11).

- (11) Look, I can’t *see* you now [...] so you’re going to have to come back later. (www.northshire.com/siteinfo/bookinfo.php?isbn=0-671-01988-0&item=0)

The speaker of (11) is face-to-face with the addressee and can visually “see” the addressee, so the utterance in (11) only makes sense if the extended meaning “meet with” is available as a lexical polysemy of *see*.

Four hundred years after the generalization of *see* “meet with”, a second inference-based change gave rise to *seeing* “dating”. Imperfective *seeing* “meeting with” generally referred to iterated meetings, which invited the inference of a romantic rationale for the meetings (romantic dates being prototypically repeated over a period of time).

This “dating” extension of *seeing* began in contexts such as (12), a passage from one of the Pollyanna books. The context prior to the direct quote makes it especially clear that Pollyanna is deriving an inference of romantic interest based on the fact that the two other characters are seeing and meeting each other repeatedly.

- (12) Being so sure now that Jimmy and Mrs. Carew cared for each other, Pollyanna became peculiarly sensitive to everything that tended to strengthen that belief. And being ever on the watch for it, she found it, as was to be expected. First in Mrs. Carew’s letters. “I am *seeing* a lot of your friend, young Pendleton,” Mrs. Carew wrote one day; “and I’m liking him more and more [...]” (1914, Eleanor H. Porter, *Pollyanna Grows Up*)

The implied romantic interest here is still an inference based on context, and not yet a generalized inference or part of the lexical meaning of imperfective *seeing*. However, following the same pattern described for *see* “know/understand”, the extended “dating” sense of *seeing* later became generalized throughout the English-speaking population. Eventually, the sense was lexicalized, making it possible to use *seeing* “dating” unambiguously, as in (13) below.

- (13) I know you're not married, but are you *seeing* anyone right now?
(www.elektronicsurveillance.homestead.com/interviews_RazinBlack.html)

The speaker and hearer of (13) are meeting in person and can see each other. In this context, a visual interpretation of *seeing* makes no sense. Here, *seeing* refers unambiguously to “dating”, demonstrating that the “dating” sense of *seeing* has been added to the lexicon.

3.1. How *Seeing* “Dating” Fails Three Tests for Metaphor

The “dating” sense of *seeing* has several characteristics that make a metaphoric extension explanation impossible. If the extension *seeing* “dating” were based on a conceptual metaphor, we would first have to postulate the existence of a metaphor such as “DATING IS SEEING”. We would expect to find the same kinds of evidence for “DATING IS SEEING” that is found supporting documented metaphors like KNOWING IS SEEING. Evidence of this metaphor could come from extralinguistic evidence, systematic semantic extensions, or a new source of evidence that I call the *inflection test*.

Genuine metaphors like KNOWING IS SEEING show up extralinguistically, such as in artwork in which thinkers or books are shown as surrounded by light.⁶ Although KNOWING IS SEEING is common in visual metaphors, there are no documented visual examples of metaphors relating SEEING and DATING, which suggests that there is no conceptual metaphor relating these two domains. Unfortunately, relatively little extralinguistic data has been collected on most metaphors, so lack of documentation cannot be taken as proof that a given “metaphor” does not exist. Linguistic data is more readily available, and with this in mind, the next two subsections will discuss linguistic tests which show that the extension *seeing* “dating” cannot be conceptual metaphor.

3.1.1. The Systematic Extensions Test

The systematic extension of semantically related lexical items is the most commonly cited evidence of metaphoric mappings. It has been an assumption of conceptual metaphor theory (starting with Lakoff; Johnson, 1980) that the correspondences between lexical items’ source-domain (central) and target-domain (extended) meanings provide evidence of underlying metaphoric mappings. Most of what we know about metaphoric structure comes from collections of related semantic extensions that are taken as evidence of conceptual metaphoric structure.

When several semantic extensions provide evidence of systematically related mappings, this is believed to indicate that a genuine conceptual metaphor underlies the extensions. By the same token, if a semantic extension is *not* part of a systematic set of extensions, I argue that it is unlikely to be a metaphoric extension.

6. A number of authors have addressed visual metaphor in depth. For example, Forceville (2002) writes on metaphor in film, and McNeill (1992) and Cienki (1998) discuss metaphor in gesture.

An examination of semantically related lexical items can therefore answer the question of whether a given semantic extension is metaphoric or not. For example, the disputed extension *see* “know/understand” is part of a substantial collection of linguistic evidence for the metaphor KNOWING IS SEEING. Several mappings documented in this way are shown below.

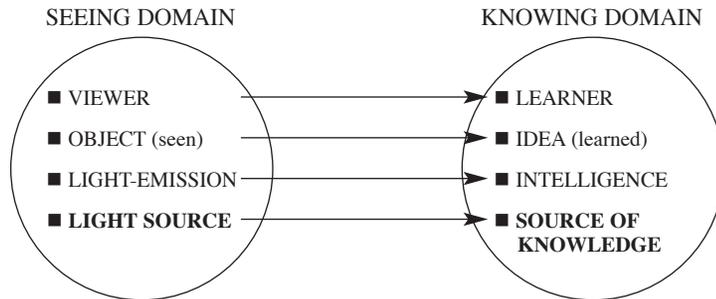


Figure 1. KNOWING IS SEEING and SOURCES OF KNOWLEDGE ARE LIGHT SOURCES

As an example of how an extension can provide evidence of a metaphoric mapping, let us examine the mapping SOURCES OF KNOWLEDGE ARE LIGHT SOURCES. This mapping allows a source of light (which enables SEEING) to map to a source of knowledge (which enables KNOWING). In the SEEING source domain, literal LIGHT SOURCES may be described by adjectives like *bright*, *brilliant* and *illuminating*. These adjectives are additionally used metaphorically to describe a book, idea, or person that makes knowledge more accessible, as in examples (14)-(16).

- (14) Often it was someone from the community with a *bright* idea that triggered a new activity. (www.ptreyeslight.com/stories/sept20_01/dance_palace.html)
- (15) I have taken what that *brilliant* reading teacher taught me and applied it to the way I teach. (www.mathchannel.com/Portals/0/3of3lesson.pdf)
- (16) We had an *illuminating* discussion on that particular work. (www.geocities.com/mizzenwood/features.htm)

The metaphoric uses of *bright*, *brilliant* and *illuminating* reflect the mapping SOURCES OF KNOWLEDGE ARE LIGHT SOURCES, which is just one mapping of the many involved in KNOWING IS SEEING. Other items from SEEING provide evidence of further mappings. For example, the ABILITY TO SEE maps to the ABILITY TO COMPREHEND, so that people who are unable to understand something are called *dim*, *myopic* or *blind*. Extensions like these demonstrate the structural correspondences between SEEING and KNOWING that make metaphor possible.

There is no evidence of mappings like these from SEEING to DATING. A source of light never maps to anything in the realm of “DATING”, such as a source of dates. In example (17), *illuminating* cannot mean that the “singles club” is a good source of dates.

- (17) ?That singles club is so illuminating.

Likewise, the ABILITY TO SEE cannot map to “the ability to date”, and people who cannot get a date are not called *dim*, *myopic* or *blind* for that reason. In fact, no items or phrases other than *seeing* “dating” hint at a conceptual metaphor “DATING IS SEEING”. The absence of systematic extensions from SEEING to “DATING” suggests that “DATING IS SEEING” does not exist, and that *seeing* “dating” cannot be a metaphoric extension.

3.1.2. The Inflection Test

The extended sense of *seeing* meaning “dating” offers further evidence that this extension cannot reflect a conceptual metaphor. Only imperfective-aspect *seeing* can mean “dating”, as in the (a) sentences in (18) and (19) below. These examples cannot refer to “dating” if *seeing* is replaced with simple-present *see*, as in the (b) sentences.

- (18) a. I know you’re not married, but are you *seeing* anyone right now?
(www.elektronicsurveillance.homestead.com/interviews_RazinBlack.html)
b. # I know you’re not married, but do you *see* anyone right now?
- (19) a. In fact, I heard she’s been *seeing* that guy for over two years. Tom had no idea.
(www.firstlightplayers.org/Images/PDF_Files/First%20Light%20Zone%20-%20The%20Tongue.pdf)
b. # In fact, I heard she’s *seen* that guy for over two years. Tom had no idea.

The speaker of (18a) is asking whether the hearer is currently dating, but (18b) can only be interpreted as asking whether the hearer visually sees any likely candidates for marriage at the moment. Example (19a), likewise, clearly refers to dating, whereas (19b) is difficult to interpret.

If the “dating” sense of *seeing* reflected a conceptual metaphor, there would be no reason for it to be arbitrarily limited to a particular inflection of a lexical item in the manner shown in (18)-(19). Metaphor, as a potentially extralinguistic conceptual process, can usually draw from any available vocabulary, derivations or inflections that reflect the mappings of the conceptual metaphor. For example, we can use all the different forms of the root *brilliant* to mean “intelligent” via KNOWING IS SEEING, as in *brilliant idea*, *a brilliantly reasoned argument*, and *the professor’s brilliance* in (20)-(22).

- (20) I have a *brilliant* idea that will make a lot of money [...]
(www.melaniecraft.com/faq.htm)
- (21) We agree with the *brilliantly* reasoned argument in a recent letter to the Observer [...]
(www.broward.com/mld/charlotte/news/columnists/doug_robarchek/9614893.htm)
- (22) Elena, initially taken with the professor’s *brilliance*, now finds the self-centered and ill older man an unsympathetic husband.
(www.nytheatre-wire.com/LK99082T.htm)

The trend suggested by (20)-(22) is robust, insofar as I have found no cases of metaphoric extension that are limited to particular inflections of an item, and only a few

rare instances in which a metaphor can be expressed with one derivation of a root but not with another.⁷

On the other hand, inferential changes often affect very particular uses of an item. Invited inferencing is frequently limited to the derived or inflected forms that occurred in the ambiguous contexts that made the inferencing possible (Traugott; Dasher, 2002: 82-84).

The inflection test will be of interest once again when we return to the disputed examples of change in the metaphor/invited inferencing overlap, particularly the future-marking use of *going*, which fails the test. Since the inflection test has not been part of the metaphor/inferencing debate, it has the potential to provide a new understanding of contested extensions like *see* “know/understand” and future-marking *going*.

The inflection test, like the other tests in this section (nonlinguistic evidence and systematic extensions), cannot always prove that an extension is invited inferencing. These tests can prove only that a semantic extension is *not* pure metaphoric extension. In the case of *seeing* “dating”, where an invited inferencing explanation is readily available, these tests rule out a metaphoric interpretation and leave invited inferencing as the best explanation of the change.

Besides ruling out a metaphor-based explanation of extensions like *seeing* “dating”, the tests discussed in this section highlight some crucial differences between invited inferencing and metaphor, summarized below (setting aside, for the moment, the disputed examples like *see* “know/understand”).

Table 1. Characteristics of metaphoric extension and invited inferencing

	Metaphoric extension	Invited inferencing
Item with source-domain meaning in target-domain context	YES	NO
Extralinguistic evidence of metaphor	YES	NO
Related items undergo extension (Systematic extensions test)	YES	NO
Limited to particular inflections (Inflection test)	NO	Sometimes

Unlike metaphor, invited inferencing shows no evidence of an underlying conceptual metaphor, including extralinguistic evidence, and the ability to affect any inflected forms; and no evidence of systematic mappings, such as systematic semantic extensions.⁸

7. For example, adjectival *bright* can mean either “intelligent” as in *bright idea* (via KNOWING IS SEEING) or “cheerful” as in *bright mood* (via HAPPINESS IS LIGHT); whereas adverbial *brightly* means “cheerfully”, as in *smiled brightly*, but cannot mean “intelligently”, as discussed by Sullivan (*forthcoming*).

8. According to these criteria, the epistemic meanings of modal verbs (as in English) cannot be considered as metaphoric extension at all, contrary to claims in Sweetser (1990), Haser (2003), and Goossens (2003). Extensions such as epistemic *must* (from deontic *must*) do not share the characteristics of

4. Unequivocal Metaphoric Extension

Now that we have looked at the inferencing-based extension *seeing* “dating”, let us turn to an unequivocal example of metaphoric extension. For this, we need look no further than the familiar domain of SEEING, and the uses of *bright*, *brilliant* and *illuminating* in (14)-(16), which refer metaphorically to the demonstration of intelligence.

According to the metaphor explanation, extensions like *brilliant* “intelligent” are linguistic instantiations of the conceptual metaphor KNOWING IS SEEING. As part of this metaphor, LIGHT SOURCES map to SOURCES OF KNOWLEDGE, as we saw in Figure (1). The mapping SOURCES OF KNOWLEDGE ARE LIGHT SOURCES captures the fact that a light source makes objects visible, which maps to the situation in which a thinker, book or idea makes knowledge more accessible to others. The mapping SOURCES OF KNOWLEDGE ARE LIGHT SOURCES allows speakers to retrieve the target-domain meaning “intelligent” from the source-domain “light-emitting” meaning of *brilliant*, following the mapping from the source-domain meaning to the target-domain meaning.

It does not matter whether intelligence and light-emission are co-occurring phenomena, and it is not necessary for *brilliant* to be used in a context which is ambiguous between a “light-emission” and an “intelligence” interpretation. In fact, metaphoric extensions almost never occur in ambiguous contexts. Without some contextual cue indicating the target domain, a hearer will tend to understand the central (source-domain) sense of a given item (Bartsch, 2003).⁹ Ambiguous contexts therefore discourage metaphoric extension, whereas unambiguously target-domain contexts encourage it.

4.1. Why *Brilliant* “Intelligent” Cannot Result from Invited Inferencing

Although metaphoric extension rarely occurs in ambiguous contexts, the lack of ambiguous contexts between “light-emission” and “intelligence” is an insurmountable problem for an invited inferencing explanation of *brilliant* “intelligent”. People who are smart never literally radiate light, and as a result, emitting light will never lead to inferences of intelligence. Light-emission and intelligence do not co-occur in the way of, for example, visual experience (“seeing”) and awareness (“knowing”) of a phenomenon. As a result, there are no linguistic contexts which can be ambiguous between light-emission and intelligence, and there are no historical examples of this kind of ambiguous context that could have led to invited inferencing.

metaphoric extension demonstrated by *brilliant* “intelligent” or even by the disputed extensions such as *see* “know/understand”. It would be difficult to find an extralinguistic instantiation of a metaphor like “EPISTEMIC IS DEONTIC”; extensions between these domains are instantiated only by the modal verbs themselves, failing the systematic extensions test; and the extensions can be limited to particular tenses and/or moods, failing the inflection test.

9. Once a metaphoric extension has been lexicalized, the extended target-domain sense can become more central than the original source-domain sense. But when an extension first occurs the central sense will always be the default interpretation.

The importance of ambiguous contexts can be added to our summary of metaphoric extension/invited inferencing characteristics, as in Table (2).

Table 2. Characteristics of metaphoric extension and invited inferencing

	Metaphoric extension	Invited inferencing
Item with source-domain meaning in target-domain context	YES	NO
Extralinguistic evidence of metaphor	YES	NO
Related items undergo extension (Systematic extensions test)	YES	NO
Limited to particular inflections (Inflection test)	NO	Sometimes
Possibility of ambiguous contexts	NO	YES

Without ambiguous contexts, invited inferencing is impossible. If no potential linguistic context could be ambiguous between a central and an extended meaning, the extension cannot have been the result of invited inferencing. In the case of extensions like *brilliant* “intelligent”, the inapplicability of an invited inferencing explanation leaves metaphoric extension as the best description of these changes.

5. The Invited Inferencing/Metaphoric Extension Overlap

Based on examples like those in the previous sections, metaphoric extension and invited inferencing seem like fundamentally different processes. These differences shed new light on the contested extensions like *see* “know/understand”, *warm* “affectionate”, and future-tense *going*. If we accept both metaphoric extension and invited inferencing as valid types of semantic change, items like *see* “know” pose a problem, because we must decide whether to categorize them as metaphoric extension, invited inferencing, or some combination of the two.

Logically, the characteristics of the unequivocal examples of metaphor and inferencing should help us understand these disputed extensions. If these extensions share most of the characteristics of unequivocal metaphoric extension, then we would have reason to call them “metaphor”; whereas if the extensions have more in common with invited inferencing, then we would feel justified in grouping them with inference-based extensions. Unfortunately, the situation is more complex.

In fact, extensions like *see* “know” share the most important characteristics of both metaphoric extension and invited inferencing, as shown in Table (3), expanded from Table (2).

Table 3. Characteristics of metaphoric extension, invited inferencing, and the contested extensions

	Metaphoric extension	Invited inferencing	Metaphor/inferencing overlap
Item with source-domain meaning in target-domain context	YES	NO	YES
Extralinguistic evidence of metaphor	YES	NO	YES
Related items undergo extension (systematic extensions test)	YES	NO	YES
Limited to particular inflections (inflection test)	NO	Sometimes	Sometimes
Possibility of ambiguous contexts	NO	YES	YES

The contested examples clearly display the characteristics which are most indicative of conceptual metaphor. As we have seen, the extensions *see* “know/understand”, *warm* “affectionate”, and future-tense *going* appear to reflect the metaphors KNOWING IS SEEING, AFFECTION IS WARMTH, and CHANGE IS MOTION. These metaphors all show up extralinguistically. In paintings and cartoons, literal illumination (such as a light bulb over someone’s head) indicates intellectual awareness via KNOWING IS SEEING. The use of colors that are metonymically associated with warmth, such as reds and yellows, can give an impression of friendliness via AFFECTION IS WARMTH. The metaphor CHANGE IS MOTION is frequently used in gesture, even in the absence of linguistic instantiation of the metaphor (Cienki, 1998).

The extensions also pass the systematic extensions test. Section (3.1.1) discussed a number of items instantiating KNOWING IS SEEING, such as *illuminating*, *myopic* and *blind*. The metaphor AFFECTION IS WARMTH is expressed, for example, by adjectives such as *icy*, *frigid*, *cold*, which have the extended sense “unfriendly”; and CHANGE IS MOTION participates in expressions like *we’re coming up on / hurtling towards / getting close to finals week*, or even in discussions of the *distant past* and the *near future*.¹⁰

By these measures, extensions like *see* “know/understand” appear to instantiate well-documented conceptual metaphors. Like unequivocal examples of metaphor such as *brilliant* “intelligent”, these contested extensions involve an item with a source-domain meaning that acquires a target-domain meaning.

However, the contested changes also share the most critical characteristic of invited inferencing. For example, all of these items can occur in ambiguous contexts. We saw examples of these contexts in (5)–(7) in section (2.2), repeated below as (23)–(25).

10. In these examples, as in most of its instantiations, the primary metaphor CHANGE IS MOTION participates in more complex metaphors, such as the Moving Time or Moving Observer metaphors for TIME (Lakoff; Johnson, 1999).

- (23) Nou wend and *seh* wher hit be. (c1310, Anon., *Marina*)
 (24) Oh take this *warme* kisse on thy pale cold lips. (1588, Shakespeare, *The Lamentable Tragedy of Titus Andronicus*)
 (25) I'm *going* to seek him Love Gregory, / In's lands where e'er he be. (1100-1500, Anon., *Love Gregory*)

Another wrench is thrown into the works by the results of the inflection test. The extensions *see* “know/understand” and *warm* “affectionate” pass this test, as suggested by the various inflections of these stems in (26)-(29) below.

- (26) Pope Leo XIII clearly *saw* the intent of the evil one.
 (www.dailycatholic.org/issue/2002Apr/apr8ed.htm)
 (27) I'm not *seeing* what you are saying and you aren't *seeing* what I'm saying.
 (www.wordpress.org/support/topic/40853)
 (28) For example, an advisor to Herbert Hoover suggested the candidate would appear to have a *warmer* personality if he had a dog.
 (www.briefme.com/archive.php/article/16920)
 (29) Her mother is this incredibly friendly woman with the *warmest* smile you can possibly imagine [...] (www.omgjeremy.com/OMGBlog/2005_09_01_)

However, this test for metaphor runs into trouble with the future-marker *going*. Like *seeing* “dating”, future-marking *going* always has imperfective aspect. Sentence (4), repeated as (30a), loses its future reference when rephrased with the infinitive *go* as in (30b).

- (30) a. I'm *going* to stay here in America.
 (www.montereyrepublicans.org/PressReleases/index.cfm/ID/73.htm)
 b. # I will/intend to/always *go* to stay here in America.

The inflection test, then, confirms what the earlier tests suggested. The contested extensions share some of the characteristics of metaphor, and some of the traits of invited inferencing. These tests will not simply allow us to relegate these extensions to one category or the other. Instead, they seem to indicate that *both* metaphor and inferencing are at work in these examples. The next subsections explore how this interaction might occur.

5.1. Primary Metaphors and Primary Scenes

One well-known process combines metaphoric structure with the potential for ambiguous contexts: the *primary metaphors* (Lakoff; Johnson, 1999). Primary metaphors are different from complex metaphors in that they have a direct experiential basis. For instance, children develop the primary metaphor KNOWING IS SEEING by experiencing recurrent situations in which KNOWING and SEEING co-occur, such as when they SEE an object and KNOW something new as a result, like its shape, color, or location (Johnson, 1997). I will follow Grady and Johnson (1998) in calling these co-occurring experiences *primary scenes*.

All the extensions in the metaphor/invited inferencing overlap appear to involve primary metaphors. For instance, *see* “know/understand” reflects the primary metaphor KNOWING IS SEEING; *warm* “affectionate” fits the pattern of AFFECTION IS WARMTH; and the future-marker *going* matches the structure of CHANGE IS MOTION. I have found no examples in the metaphor/invited inferencing overlap which fail to match the structure of primary metaphors.

There is a reason why some inference-based extensions might be expected to follow the pattern of primary metaphors. Invited inferencing happens only in contexts which involve two co-occurring situations, one which is literally referred to and one which is implied. A convergence of two co-occurring situations is, therefore, a prerequisite for invited inferencing, just as this convergence is an essential part of primary scenes. It is only to be expected that a subset of these co-occurring situations would coincide with the primary scenes that give rise to primary metaphors.

However, there are a number of differences between primary scenes and the contexts that lead to invited inferencing. Some co-occurring situations that result in invited inferencing never lead to primary metaphor because the prerequisite structural correspondences between domains are absent (as in *see* “meet with” [section 3]). Additionally, inferencing requires an ambiguous *linguistic* context (as in the sentence *Go and see where it is!*), as well as an ambiguous situational context (such as seeing an object and learning its location). On the other hand, primary metaphors are established through co-occurring situations, but once established they are conceptual structures in their own right. They can then facilitate semantic extensions in the same range of linguistic contexts as complex metaphors.

Primary metaphors can also accumulate purely structural mappings which are not part of their experiential basis. These complex mappings – like complex metaphors – no longer overlap with invited inferencing. For example, the mapping SOURCES OF KNOWLEDGE ARE LIGHT SOURCES, evident in *brilliant*, *bright* and *illuminating* in (14)-(16), is not part of the experiential basis of KNOWING IS SEEING. As we saw in section (3.1), this mapping does not represent a correspondence between real-life situations of “sources of knowledge” and “light sources”, but is instead based on structural similarities between KNOWING and SEEING. These complex mappings, like complex metaphors, are learned later than the primary mappings, as Lakoff and Johnson (1999: 49) discuss regarding the item *illuminate*. Complex mappings, like complex metaphors, do not normally occur in ambiguous contexts and can never be confused with invited inferencing.

Despite the differences between primary scenes and the contexts underlying invited inferencing, the common experiential basis of primary metaphors and invited inferencing is crucial to understanding the metaphor/invited inferencing overlap. We will look at the basis of this overlap in the next section.

5.2. The Parallel Chaining Explanation for the Metaphor/Invited Inferencing Overlap

The characteristics of the metaphor/inferencing overlap fall into place if we think of metaphor and invited inferencing as cooperating in the production of extensions like *see* “know”. Goossens (2003) has suggested the term *parallel chaining* to describe

metonymic processes that operate in tandem, rather than sequentially. I will adopt this term to refer to a similar relationship between metaphor and invited inferencing.¹¹ In parallel chaining, two (or more) processes of change that lead to the same outcome take place simultaneously, each contributing to that final outcome. One process may play a greater role for some speakers, and a different process, with similar effects, may play a greater role for others.

If metaphoric extension and invited inferencing can happen side-by-side to produce a given change, this explains why the contested extensions always demonstrate the prerequisites for both metaphoric extension and invited inferencing. Parallel chaining would, by definition, be possible only in contexts which are appropriate for both metaphoric extension and invited inferencing. The characteristics of the metaphor/inferencing overlap are summarized in Table (3).

Extensions like *see* “know” specifically share all of the *restrictions* of both metaphoric extension and invited inferencing. They occur in contexts that are more specific than those required by either process alone. These contexts must be consistent with a target-domain interpretation (as in metaphoric extension) yet they must also be potentially ambiguous between central and extended interpretations (as in invited inferencing). The central and extended meanings of items like *see* must fit neatly into the source and target domains, respectively, of a conceptual metaphor; and this metaphor should be documented through extralinguistic instantiations and multiple semantic extensions from source domain to target.

Alongside the restrictions imposed by the extensions’ underlying primary metaphors, the extensions also must display the prerequisites for invited inferencing. These include, as we have seen, the possibility of linguistic *and* situational contexts which are ambiguous between central and extended interpretations. The results of the inflection test corroborate the necessity for ambiguous linguistic contexts. If ambiguous contexts are frequent only when a particular inflection of an item is used, as in the case of the future-marker *going*, then only this inflected form will undergo extension.

Despite these stringent requirements, extensions like *see* “know/understand” are surprisingly common, both in English and cross-linguistically. This type of extension was documented throughout Indo-European languages by Eve Sweetser (1990) and noted in over a hundred non-Indo-European languages by Verena Haser (2003).

The parallel chaining explanation predicts the frequency and ubiquity of extensions like *see* “know/understand”. The cooperation of two processes of change makes it more likely that a given change will occur, and also facilitates the propagation of the change through a population. The details of the interplay between chained processes require more in-depth study, but inescapably, two cooperating processes will encourage a given extension more than either process alone.

A final measure of support for parallel chaining comes from early unambiguous uses of extended senses like *see* “know/understand”. All of the extensions in the metaphor/inferencing overlap occurred in ambiguous contexts. However, unambiguous

11. I will not limit my use of the term *parallel chaining* to processes that are “partially sanctioned” (Goossens, 2003), meaning that they are only viable in combination.

examples occur surprisingly early in the extensions' development. For example, compare the early ambiguous contexts in (23)-(25) with the early unambiguous examples below.

- (31) "Lauerd," he said, "now *see* i well Mi sin me has seit in vnsell." (a.1300, *Cursor M.*)
 (32) [...] *warm* wordes [...] bryng louers warm hartes / And so haue your wordes warned my harte euy nowe [...] (1534, John Heywood, *A play of love*)
 (33) The Queen's faen sick, and very, very sick, / Sick, and *going* to die [...] (1100-1500, Anon., *Queen Eleanor's Confession*)

The abstract state of unhappiness (*unsell*) in (31) cannot be visually "seen"; likewise *words* in (32) cannot literally be "warm"; and (33) does not mean that the Queen is literally journeying to a location to die, but rather that she will die in the future.

The examples of *see* "know/understand", *warm* "affectionate", and the future-marker *going* in (23)-(25) are dated within a few decades of the unambiguous examples of the same extensions in (31)-(33). If invited inferencing alone were operating in these extensions, unambiguous examples like (31)-(33) would only be predicted to occur after lengthy processes of generalization and lexicalization. The early evidence of unambiguous uses of these extended senses suggests that metaphor was active even in the earliest stages of these extensions.

6. Conclusion

In order to make further progress in characterizing semantic change, we need to recognize both metaphor and inferencing as two distinct processes with different characteristics. It is pointless to act as if metaphoric extension could explain all semantic change, and it is equally inaccurate to argue that invited inferencing can completely replace it.

Once we recognize metaphoric extension and invited inferencing as distinct types of change, we can narrow down the debate over metaphor versus invited inferencing to the examples that matter: the extensions in the metaphor/invited inferencing overlap like *see* "know/understand". We can then use the characteristics of metaphoric extension and invited inferencing to decide whether we should pursue a parallel chaining explanation of this overlap; to refine our understanding of how metaphor and inferencing interact in these extensions; and ultimately, to resolve the debate between adherents of metaphoric extension and proponents of invited inferencing.

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