

Analyzing the Verbs of Seeing: A Frame Semantics Approach to Corpus Lexicography

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Analyzing the verbs of seeing: a frame semantics approach to corpus lexicography.

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What are dictionaries for? Let us suppose that a reader, coming across the sentence *Ned spotted Millie in the forest*, were to turn to a dictionary in the hope of discovering how this differed from other similar sentences such as *Ned saw Millie in the forest*, *Ned sighted Millie in the forest*, or *Ned espied Millie in the forest*. An American might reach for the *American Heritage Dictionary* (AHD), while a British reader might look these words up in the *Collins English Dictionary* (CED). Both might on further rumination conclude that a number of other verbs, such as *glimpse*, *spy*, *behold* or *descry* could also have appeared in that sentence, without greatly changing the meaning. Fired with enthusiasm for the chase, they look up each of these verbs in turn. Are they any the wiser? The definitions that they find are shown in Appendix 1.

1. What the dictionaries say

The most salient feature of the definitions, in both dictionaries, is the way in which they define the members of this little set of near-synonyms in terms of each other; only *see*, in both cases, is fully defined¹. The phrase *catch sight of* is used thrice in the CED (where as a definiendum it is mentioned but not defined) and twice in the AHD (where it is not even mentioned as a definiendum). Often the definitions consist simply of two or three of the other verbs, but in both dictionaries a little more information is sometimes given. AHD seems to be saying that *descry* means the same as *discern*, while *spot* means *discern* and *detect* at the same time. CED on the other hand suggests that *spy* means *catch sight of* and *descry* simultaneously — or is one to understand that *spy* really means something like *catch sight of* with overtones of *descry*, or a cross between *catch sight of* and *descry* (which itself, according to CED, means some combination of *discern*, *make out*, and *catch sight of*)? As synonymy is transitive, the information in the two dictionaries may be summarized in the series of synonymy chains shown in Figure 1.

behold = observe = spot = perceive = catch sight of
descry = discern = spot = catch sight of
espy = glimpse = sight = catch sight of
notice = perceive = espy = catch sight of
spot = perceive = espy = catch sight of
spy = descry = discern = spot = catch sight of

Figure 1 Synonymy in dictionary definitions

Such definitions may allow the reader to understand any of these words in context, but they do not explain differences among near-synonyms. Indeed, dictionaries rarely offer contrastive accounts of word meaning across sets of semantically related words, and it is perhaps unfair to expect this of them, given the commercial

pressures on editorial time and print space to which they are subject. The basic text of the established collegiate dictionaries was laid down long before computerized lexicography came into its own, and it has not yet been proved that compiling entries for 80,000 words in semantic sets, although logically compelling, is a feasible proposition for a trade dictionary.

However, the words are discussed contrastively in a number of dictionaries, for semantic sets form the basis for some of the usage notes, where one might well expect a more systematic approach to meaning description. The AHD entry for *see* (see Appendix 1) is followed by a note in which some of the words we are interested in are discussed. The scope of this note (which adds a little to the information in the entries for these verbs) is not restricted to the modality of sight: synonyms given for *see* include *note*, *notice*, *observe*, *perceive* and *remark*, which, unlike *see*, operate in other modalities of perception. Register is mentioned for *behold* ("usually in literary or other formal contexts"), yet not for *espy* or *descry*, where the same would apply. All the information given in these two dictionaries is collated in the table in Figure 2.

Verb	Genus	Differentia		
		Manner	Duration	Feature of object
behold	look at, observe gaze at, look upon	awareness		
descry	discern make out catch sight of			distant obscure
espy	catch sight of perceive glimpse			distant previously unnoticed
glimpse	catch sight of obtain view of	incomplete	briefly momentarily	
sight	see, glimpse view, observe			
spot	observe, perceive discern, detect	suddenly		obscure
spy	catch sight of descry, see			distant obscure

Figure 2 Information in CED and AHD

If our readers were determined enough to search through other major collegiate dictionaries, they would wind up even more confused and frustrated. The defining approach in those surveyed² is similar to that found in AHD and CED, in that they all use the same few genus terms and the same few differentia, the only difference being the definienda to which these are assigned. The two³ which offer a discussion of near-synonyms of *see* ring the changes on the verbs to which they ascribe distance and obscurity of the object, and both mention (rightly) the fact that the use of *behold* implies that the object is an impressive sight. All in all, however, it is fair to say that existing dictionaries do not describe the similarities and differences in the meaning of this little group of verbs.

2. Does the corpus support the dictionaries' views?

What can corpus evidence add to the dictionary descriptions? A current, general-language corpus⁴ of approximately 50 million words of mainly British English, wordclass-tagged, offers 81,636 citations for the verb *see*. Frequencies for the other verbs discussed here are *behold* 199, *descry* 2, *espy* 24, *glimpse* 278, *sight* 255, *spot* 1,363, and *spy* 331; there were 192 citations for *catch sight of*. A 2-million-word subset of a specialist sentence corpus (the result of a structured reading programme of British and American English) added seven citations for *espy* and six for *descry*.

A survey of these citations did not always support the differentia offered in the dictionary definitions, although in many cases it was impossible to tell, even from contexts of paragraph length and over, whether the object *espied* had not been noticed before, or whether the thing *spotted* or *descried* was far off or difficult to see properly. In the case of *glimpse*, where almost all the dictionaries agreed on the fleeting nature of the experience, corpus citations reinforced this intuition, as in the following:

- 1a. Only as the car approached them did Ludens think he glimpsed a figure standing in the shade under a tree.
- 1b. Passing the Wilcoxes' house in Avondale Road, she glimpsed a hand shaking a duster from an upstairs window.
- 1c. Turning, Meredith was just in time to glimpse a man standing by one of the loose-boxes.
- 1d. Gower chased after him, glimpsing him each time he rose with the swell.
- 1e. The steely smile was glimpsed briefly.
- 1f. She glimpsed again that girlish figure momentarily outlined against the walls of the abbey.
- 1g. The more briefly glimpsed a grandparent, the more likely the recollection is to be no more than an external image.
- 1h. And there were mountains, though miles away and only glimpsed at through a tiny tree gap.

In 1a through 1c the italicized phrases (my italics) make it clear that the glimpser was moving, and therefore presumably prevented from focussing for any length of time on the object in view; in 1d the person glimpsed was moving, with the same result; 1e through 1g exemplify the many instances of explicit adverbials reinforcing the meaning of this verb; and 1h includes a description of the reasons why the mountains were "only glimpsed".

More often than not, however, the corpus evidence contradicts the dictionary definitions, as for instance in the case of *spot*, defined in CED as "to observe or perceive suddenly, especially under difficult circumstances": an occasional citation implies that the object was difficult to see (*I happened to spot a flicker of movement close to the north bank of the pool*) but more often the contrary is implied, as in the following:

- 2a. A water bailiff spotted Harty fishing openly on the banks of the Tees.
 2b. "They were fairly easy to spot," said police.
 2c. The bombs are covered in black tape to make them less easy to spot.
 2d. She launched her criticism after spotting four boys aged about ten pelting stones at ducks in the pond.

In 2a, the use of the word *openly* makes it clear that it was not difficult to see Harty; in 2b and 2c the phrase *easy to spot* is difficult to reconcile with the claim that spotting something means seeing it under difficult circumstances, and one would have to be determined to take the *ex cathedra* view of dictionary pronouncements to believe on reading 2d that it was difficult to see four little boys throwing stones at ducks in a village pond.

Difficult as they may be to differentiate, however, these words are not synonymous, nor are they even interchangeable in all contexts. In the corpus citation *Apart from being functional, it is also beautiful to behold*, the substitution of *glimpse* for *behold* would be unacceptable; equally unacceptable would be the substitution of *behold* for *glimpse* in *Gower chased after him, glimpsing him each time he rose with the swell*. The children's game *I spy with my little eye something beginning with ...* would sound unlikely if it were *I glimpse (or sight etc.) something beginning with ...*, and *Glimpse the ball!* or *Spy the ball!* would be an improbable name for the popular newspaper competition *Spot the ball* (in which participants guess the location of a football airbrushed out of an action shot of a game), while *Behold the ball!* would have quite the contrary effect.

Approached in a theoretical vacuum, the corpus data, rich as it is, is not enough to allow lexicographers to describe adequately the meaning of each of these words, far less to distinguish the tiny shifts of meaning that occur from one to the other. The sheer weight of undifferentiated data carries the lexicographer to the seabed. It is difficult to believe that the dictionaries would have done any better if their editors had had thousands of citations to consult for each word. Without some formal method of structuring the lexicographical evidence, corpus analysis can only be impressionistic. Richer data may give us better impressions, but cannot give us much more. I shall now try to describe how a frame semantics approach to corpus analysis, as described in Fillmore & Atkins (1992 and in press), appears to offer a useful environment for lexicographical work on this group of near-synonyms.

3. A frame semantics approach to corpus analysis

The "perception frame"⁵, within which operate the verbs of seeing as well as those of feeling, hearing, tasting and smelling, is peopled with various categories, or elements; they are all necessary to account for the various usages of the word, and each of them may or may not be expressed in any sentence in which a verb of seeing is found. The names Experiencer (the animate being that sees) and Percept (what is seen) are given to two of the major frame elements in this visual event. Thus *Bill* in *Bill looked at Marie* and *Joe* in *Joe saw the sparrow* are expressions of the Experiencer, while *Marie* and *the sparrow* express the Percept in each case. When the meaning of the verb (*look*, for instance) includes an element of volition, there is an Active Experiencer (*Bill*); otherwise (*see*, for instance) the Experiencer (*Joe*) is Passive. The work of scholars such as Rogers (1971), Cooper (1974, 1975) and Miller & Johnson-Laird (1976) is relevant here.

The voluntary/involuntary aspect of its nature is central to a description of the visual event, but neither of the dictionaries examined distinguishes this clearly. The AHD defines *behold* (which has a Passive Experiencer) as *To gaze at; look upon*, yet both *gaze* and *look* are verbs in which the Experiencer is Active; moreover, the AHD lists as synonyms of *see* (where the Experiencer is Passive) the verbs *contemplate*, *survey*, *view*, *scan* and *skim*, which have Active Experiencers.

In a frame semantics analysis, a distinction is also made in the case of the Percept: the name Stimulus is given to the type of Percept found when an object appearing in the field of vision produces in the Experiencer the experience of seeing something, but there are verbs of visual perception where this is not always the case. One of these is *look*. In *Bill looked at Marie*, the noun *Marie* clearly represents the same type of Stimulus Percept as is found in *Joe saw the sparrow*, but in *I'm looking for my car*, the car in question has not yet been seen, and cannot therefore constitute a Stimulus, although the verb and particle unit *look for* are described as belonging to the visual modality of the perception frame. We would want to call this type of Percept a Target. Other modalities within the perception frame call for other subtypes of Percept, but these are not relevant to this discussion.

To complete the brief overview of the principal categories required to describe verbs of visual perception, mention must be made of the other major frame element, Judgment⁶. This refers to the opinion which the Experiencer forms about the Percept as a result of the visual experience. There are various subtypes of Judgment, and the names they are given are self-explanatory, and are indicated in brackets in the following examples, where the words expressing the Judgment are italicized:

- 3a. He looked to me *like a yellow budgerigar*. (Judgment-Simile)
- 3b. Diana looks *relaxed*. (Judgment-Inference)
- 3c. Polished tools look *better*. (Judgment-Evaluative)
- 3d. The lens makes things look *eight times bigger*. (Judgment-Domain-Specific-Quality)

As these examples show, the same frame element may be expressed in various grammatical ways. The Experiencer, the subject of the perception verb in *Joe saw the sparrow*, is expressed by the prepositional phrase *to me* in *He looked to me like a yellow budgerigar*, while the Percept is the object of the verb (*the sparrow*) in the first sentence and the subject of the verb (*he*) in the second.

In an attempt to record systematic information about the ways in which the verbs of seeing are used, a database was built in which about one hundred sentences for each verb were analyzed (as described in Heid & Krueger 1994). More than forty different types of data were recorded about the verb and its context in each sentence: some of this was detailed morphosyntactic information about the keyword itself, but the main focus of interest was the interface between semantics and syntax. The semantic information was of two types: first, each frame element overtly expressed in the sentence was named and recorded, and, second, a small number of semantic features (+human, +concrete, +event, +definite etc.) were noted about the nouns used in the expression of frame elements. A profile was also drawn up of the grammatical expression of each frame element: this consisted of a code describing the type of phrase used to express the element, and its grammatical function in the clause containing the key verb. The verbs so far analyzed in this way are: *see*, *watch*, *look*, *sight*, *glimpse*, *spot*, *spy*, *espy*, *behold* and *descry*.

4. What can the corpus offer?

This coding made it possible to produce tabulations of frame elements and their lexical and grammatical expressions, and to contrast the set of data relating to one word with those relating to its neighbours in the same frame. Figure 3 gives an example of the difference in patterning between the verbs *look* and *sight*. The percentages in the extreme left column indicate the proportion of the citations in which each pattern is found. It must be emphasized that the subcorpus of sentences for the verbs⁷ studied in this research is of course not large enough to allow any reliable statements about the way any of the words is used in the language generally; it is the methodology, rather than the results, that is of interest here.

LOOK					
31.7%	exp-active	perc-stimulus	judg-infer	direction	
14.6%				direction	
12.2%		perc-stimulus	judg-simile		
7.3%	exp-active	perc-stimulus			
7.3%		perc-stimulus	judg-evaluat		
4.9%	exp-active			direction	manner
4.9%		perc-stimulus	judg-dom-spec		
4.7%	exp-active	perc-target		direction	
2.5%	exp-active				manner
2.5%	exp-active	perc-stimulus			manner
2.5%	exp-active				manner
2.5%		perc-stimulus			manner
2.4%	exp-active	perc-stimulus			manner
SIGHT					
22.2%	exp-passive	perc-target			
18.5%		perc-target		place	
18.5%		perc-target		place	time
13.0%	exp-passive	perc-target			time
9.3%		perc-target			
7.4%	exp-passive	perc-target			
3.7%	exp-passive	perc-target		place	
3.7%		perc-target		place	time
		perc-target			time

Figure 3 Frequency of frame element patterns
% refers to percentage of corpus citations in which the pattern is found

From the table in Figure 3, it is clear that the most frequent cooccurrence of frame elements for the verb *look* is the pattern Active Experiencer + Direction, as exemplified in *He looked away* and *He looked uninterestedly over the crowd*. The next most frequent, Stimulus Percept + Inference Judgment, is found in sentences like *Now it was Burden's turn to shrug and look baffled*. The Passive Experiencer + Target Percept configuration which dominates the data for the verb *sight* is exemplified by *As soon as they sight a predator approaching, they swiftly dart round to the far side of a tree-trunk*; the Target Percept + Place is found in sentences such as *The cliffs of Dunnose were sighted about two miles off*. The information from the hundreds of sentences thus coded was tabulated in many different ways, offering a flexible tool for studying the many different aspects of meaning and grammar that underlie word usage. One instance of the kind of

reasoning that this allowed is the description of the contrast between frame elements and patternings found for the two verbs shown in Figure 3. The most salient difference between the verb *look* and the verb *sight* is perhaps that the former allows the expression of the frame element Judgment, while the latter does not. Also very prominent is the contrast between the Active and the Passive Experiencers, and the Stimulus and Target Percepts.

Another important contrast between the usages of *look* and those of *sight* lies in the presence of so many time and place adjuncts in the context of the latter verb. This was perhaps the feature which distinguished *sight* most clearly from the other verbs in the group. When a speaker selects *sight* rather than *see* or *spy* or *glimpse*, it is, apparently, because there is something important and interesting about the time at which the visual event took place, and the location of the Percept at that time. Also apparent from the data in Figure 3 is the fact that the manner in which people direct their visual attention to someone or something else is an important factor in the choice of verb. When this aspect of the visual event is to be highlighted, *look* or another Active Experiencer verb is chosen (as shown by the presence of manner adjuncts in the verb's contexts); when it is not, then *sight* may be selected. This is not to say, of course, that these factors are consciously weighed by speakers before a verb is selected; rather that the unconscious choice is influenced by some perceived relative importance of the various aspects of the visual event, or elements in the frame of visual perception. These more peripheral aspects of meaning (place and time in particular) proved useful in exploring the difference between quasi-synonyms: the contrast here highlights differences of usage in the data for *glimpse*, *spot* and *sight*, as may be seen from the percentages in Figure 4, where only some examples of each frame element are given.

The distinction made within the frame element Place between the two subtypes, Place-Percept and Place-Experiencer, needs no commentary, except to note that occurrences of the former are fairly evenly represented across the three verbs (the percentage figures indicate the number of corpus citations in which the frame element is overtly expressed), indicating that *glimpse*, *spot* and *sight* are all used when the speaker or writer intends to mention the location of the Percept at the moment of the visual event, although it may be noted that the types of Place-Percept differ from verb to verb. *Spot* and *sight* are used with adjuncts indicating exact locations in terms of measurements such as *feet*, *yards*, *miles* and *degrees*, while vaguer expressions like *beyond*, *far off*, *above the clouds* and *across the valley* tend to appear in the contexts of *glimpse*. Place-Experiencer, on the other hand, does not occur in the *sight* subcorpus. Where the Experiencer was located when the visual event took place seems to be of little significance when the verb *sight* is selected, as opposed to *spot* or *glimpse*, where it seems to have some relevance.

From cross-tabulations of this type it may be seen that, unlike *glimpse* and *spot*, *sight* — as noted earlier — focuses the attention on time as well as place, and here again the emphasis is on exact timing (*three years ago*, *at 8.00 a.m.*, *on Friday night*), rather than vaguer time phrases such as *recently* or *last year*. Gradually, the profile of these three verbs begins to emerge.

PLACE-PERCEPT		
GLIMPSE 43%	SPOT 39%	SIGHT 43%
beyond far off above the clouds across the valley among the pedestrians at football matches beneath his uniform by the roadside in a backstreet bar on her cheek	700 feet below a hundred yards away a mile off down below her among the dinner guests at a local auction in the Big Apple in the personal column on a piece of board on the hillside	a mile away below 14 degrees N, 18 W at a London studio in Romania in the water near a campervan on a brass plate at the aerobics class in Hundens Lane
PLACE-EXPERIENCER		
GLIMPSE 8%	SPOT 5%	SIGHT 0%
from the catwalk from the depths of the car from the library window from the ship	from a distance from a few feet away from below	
TIME		
GLIMPSE 0%	SPOT 0%	SIGHT 35%
		recently three years ago last year at 8:00 a.m. before being attacked in 1983 on Friday night
BARRIER		
GLIMPSE 15%	SPOT 0%	SIGHT 0%
between moving boughs through the alders through the studio walls through the mist and rain through the storm through the white flakes through tall trees		

Figure 4 : Distribution of some frame elements across verbs
% refers to percentage of corpus citations in which the pattern is found

The table in Figure 4 contains a reference to another frame element, to which I gave the name "Barrier": this aspect of meaning seemed important for *glimpse*, and for *glimpse* only, in the group of seven that were being contrasted, since it did not appear at all in the contexts of any of the other verbs (*behold*, *descry*, *espy*, *sight*, *spot* and *spy*). The strong representation of the Barrier element in the *glimpse* subcorpus reminds the observer that glimpsing something is catching sight of it briefly, often because there is some physical object between the Experiencer and the

Percept, partially or sporadically obscuring the Percept. It suggests that while the duration of the visual event is certainly a factor in the use of *glimpse*, the brevity of the experience is not always caused by the fact that one or other of these entities is moving (as noted in Section 2), but may be due to some intervening object or some event which makes vision difficult. A summary of the frequency of expression of the main frame elements in the contexts of these verbs is given in Figure 5.

	EXP	PER	PL-PER	PL-EXP	BAR	TIME
see	86%	95%	14%	-	-	-
catch sight of	100%	100%	7%	2%	-	-
glimpse	67%	98%	43%	8%	15%	-
sight	45%	92%	43%	-	-	35%
spot	70%	95%	39%	5%	-	-
behold	81%	100%	3%	-	-	6%
descry	100%	100%	-	-	-	-
spy	95%	100%	15%	5%	-	-
espy	100%	100%	8%	-	-	-

Figure 5 : Distribution of frame elements across verbs of seeing
 % refers to percentage of corpus citations in which the element is expressed

Finally, on the subject of contextual features, we should recall the aspects of meaning referred to in the dictionary definitions (see Appendix 1), in particular their use of words like *briefly*, *suddenly* and *easily*. A search through the corpus found little evidence to support the dictionaries' claims, but it did become obvious that the phrase *in the mirror* often occurred in the context of *catch sight of*, and none of the other verbs. This fact firms up the profiles a little more. *Catching sight of* is something that happens suddenly, and is often triggered by seeing one's own appearance in a mirror; *glimpsing* (as everyone knew already) is a brief experience; and *beholding*, like *catching sight of*, has a sudden quality about it.

5. Using the data from the frame semantics analysis

This approach to lexicographical analysis offers a more systematic differentiation of the meanings of the seven semantically close verbs of seeing, and allows the lexicographer to use the corpus data, in conjunction with his or her own intuitive understanding of the meanings of the words, in order to identify the parameters along which more clearly their similarities and differences may be distinguished. I should like briefly to introduce some of the points which emerged from this process, before attempting, in the final section, to apply the findings to practical lexicography.

The table in Figure 6 is an attempt to differentiate the seven verbs under review, together with the verb *see* itself, the verb phrase *catch sight of*, and the not wholly visual *notice*⁸. Of the seven, *espy* and *spy* appear to be almost synonymous, except in the dimension of register, where *espy* is more formal than *spy*. Otherwise, on the basis of the corpus evidence, there is little to choose between them. Human Percepts are rare: things *espied* or *spied* tend to be inanimate objects, sometimes places. There is nothing in the corpus to make us think that they are necessarily small or difficult to see (despite what the dictionaries say).

Verb	Percept				Visual Event
	Expected-Unexpected	Inherent Interest	Visual Saliency	Distance	Duration
<i>see</i>	-	-	-	-	-
<i>notice</i>	unexpected	high	-	-	-
<i>catch s. of</i>	unexpected	-	-	-	-
<i>glimpse</i>	-	-	-	-	short
<i>espy - spy</i>	-	high	-	-	-
<i>spot</i>	-	high	low	-	-
<i>behold</i>	-	high	high	far	long
<i>sight</i>	non-specific expected	high	-	far	-
<i>descry</i>	specific expected	high	low	far	-
<i>witness</i>	-	high	high	-	-

Figure 6 Aspects of the meaning of the verbs of seeing

In essence, all these words are used to refer to very similar visual events, with the possible exception of *glimpse*, where the duration is noticeably brief. Choosing one word rather than another seems to be a way of shining a light on one particular aspect of the event, or of implying the existence of certain preconditions which may not have been consciously known to the participants.

The headings in Figure 6 arise from consideration of the frame semantics analysis of the corpus citations discussed above. Sometimes, however, the frame elements proposed did not seem to account for all the shades of meaning that the verbs carry, and this rough categorization is not in a final form. Rather, it attempts to show the axes along which the words share meaning components, or are differentiated from each other. Linguistic intuition has been checked against corpus evidence, and nothing has been included if contradicted by material in the corpus. However, absence in the corpus does not prove absence in the language, and not all intuitions are amenable to support from corpus evidence.

The aspects of meaning named in the column headings are divided into two groups: the first which relates to the Percept, and the second which relates to the visual event itself. The table does not include details of the Experiencer, which is passive in all these cases. The first option in each column is "unmarked" or "marked". A dash in a column indicates that the verb is unmarked in respect of that particular aspect of meaning. The marked state has further options, and these will be discussed as we go along.

Expected/Unexpected

This is a development from the systematic recording of the Percept in several hundred sentences. The verb *sight* differs from *see* in that its Percept is a Target, while that of *see* is a Stimulus. It is however possible to *sight* things you are not looking for⁹, which means that the Target Percept in the case of *sight* differs from that of *look for*, or *descry*. You can only *descry* something that you are actually looking for, which you recognize once you have found it. The fact that you do not

know exactly what it will look like makes the describing more difficult. It seems justified, therefore, to distinguish between a **specific** Target, in the case of *descry*, and a **non-specific** Target, in the case of *sight*. That is to say that the sentence *Ned sighted Millie in the forest* implies that Ned had been looking around for something non-specific of interest and his glance fell upon Millie. *Ned descried Millie* implies that he was looking for Millie specifically, and managed to find her. To summarize: the idea that there was an expectation of something interesting is captured in the **expected** coding; if the Experiencer was expecting to see something specific, then this is coded as **specific**, otherwise it is recorded as **non-specific**; when the Experiencer was not looking around for anything and was probably slightly surprised to see whatever the Percept was (as in the case of *notice* and *catch sight of*), this is coded as **unexpected**.

When the coding is 'unmarked' in this column, it means that the verb does not imply anything at all about this aspect of meaning, and can be used in situations where the context makes it clear that the Experiencer was looking for something and in others where the contrary is true. You can, for instance, *glimpse*, *espy* or *behold* something you are expecting to see, or something that takes you completely by surprise.

Inherent Interest

Whereas the previous column related to the expectation of the Experiencer before the visual event, this column is concerned with the interest inspired by the Percept at the moment of seeing. The choice of the verbs coded **high** implies that the Experiencer found the Percept (once perceived) to be of interest; it seems unlikely that the value **low** would ever occur here, because if the Percept were of no interest to the Experiencer then the event would not be worth reporting at all.

When the coding is 'unmarked' in this column, it means that the verb does not imply anything at all about this aspect of meaning and can be used in situations where the context makes it clear that the Percept was interesting and in others where it was clearly of no interest to the Experiencer. To report, for instance, that *There was a dining area, and beyond I glimpsed a further ward* does not imply that the ward so glimpsed was of any particular interest to the Experiencer; whereas in *I glimpsed a familiar face and pushed my way through the crowd crying "William!"*, the implication is that the Experiencer found the familiar face of great interest.

Visual Salience

This relates to how visible the Percept was; **low** means it was difficult to see (in the words of the dictionaries examined, "obscure" or "difficult to catch sight of"); the use of a verb coded **high** implies that the Percept was so salient that the Experiencer could not have missed it. So, for example, the objects of *behold* in the corpus tend to be such impressive sights as *the armies of the Lord, your prince and sovereign or the execution of an unending stream of aliens and heretics*.

When the coding is 'unmarked' in this column, it means that the verb can be used in situations where the context makes it clear that it was impossible for the Experiencer not to see the Percept, and others where the Percept was clearly almost invisible. It is apparent from the corpus citations that this is the case for *see*, *notice*, *catch sight of*, *glimpse*, *espy* and *spy*.

Distance

This refers to the distance between the Experiencer and the Percept at the time of the visual event. The value *far* is meant to indicate that the Percept was out of touching range. For instance, if you are flicking through a book, you can *notice* or *catch sight of* your own name in it, but you cannot really *sight* your name in it.

When the coding is 'unmarked' in this column, it means that the verb can be used in situations where the context makes it clear that the Percept is at a considerable distance (*She caught sight of a windsurfer falling in the far distance*) and in others where it is clearly close to the Experiencer, although in general, apart from the verbs *see* and *notice*, these verbs tend to be used in circumstances where the Experiencer and the Percept are quite far apart. This is understandable, since the visual event would hardly be worth reporting otherwise.

Duration

This column owes its existence to the verb *glimpse*, which undoubtedly implies a fleeting event (it is derived from a Germanic word meaning a flash of light). It is also arguable that it is impossible to *behold* something very briefly (it has the same Germanic origins as *hold*). The other verbs appear to be unmarked for this aspect of meaning.

6. Implications for lexicography

AHD lists as synonyms of *see* the verbs *behold*, *note*, *notice*, *espy*, *descry*, *observe*, *contemplate*, *survey*, *view*, *perceive*, *discern*, *remark*, *scan*, *skim*; Webster's New Dictionary of Synonyms (1984: Merriam-Webster Inc.) offers the same list without *scan* and *skim*; the verbs examined in this paper add *glimpse*, *spot*, *spy* and *catch sight of*; Collins Dictionary and Thesaurus (1987) adds *distinguish*, *heed*, *identify*, *look*, *make out*, *mark*, *recognize*, *regard* and *witness*.

In compiling a usage note, or an entry in a dictionary of synonyms, there are certain aspects of meaning to which one would wish to give priority. The first is the modality of perception. Synonyms of *see* in its core sense should belong exclusively to the visual modality. This requirement removes from the list above the following verbs: *note*, *notice*, *perceive*, *discern*, *remark*, *distinguish*, *heed*, *identify*, *make out*, *mark* and *recognize*.

Second in priority order is the type of Experiencer, Active or Passive. In frame semantics terms, *see* has a passive Experiencer; this would exclude from the list those verbs where the Experiencer is active, namely: *contemplate*, *look*, *observe*, *regard*, *scan*, *skim*, *survey* and *view*. The survivors are the verbs considered already in this discussion (*behold*, *catch sight of*, *descry*, *espy*, *glimpse*, *spot*, *spy*) and *witness* (in the non-legal sense).

What needs to be said about these verbs in a usage note on synonymy at the entry for *see*? First, of course, that all the near-synonyms share the property of not being at the conscious disposal of the person who has the visual experience: you cannot deliberately *see* or *behold* or *catch sight of* (etc.) something. Full information about the semantic type of the Percept (or the subcategorization of the verb) would not normally be included in a collegiate dictionary, but would have to be discussed in a dictionary for learners of English.

A usage note beside the entry for *see* in a general dictionary might read:

See and its near-synonyms *behold*, *catch sight of*, *descry*, *espy*, *glimpse*, *spot*, *spy* and *witness* refer to the involuntary perceiving of something by the sense of sight. *See* implies nothing further about the event. *Catch sight of* suggests that it was unexpected; *glimpse* that it was brief; *spy* and *espy* (a literary word) stress the interest factor of what was seen, as does *spot*, which also emphasizes the location of the thing seen, often implying that it was difficult to make out; *behold* (a literary word) lays emphasis on the impressive nature of the sight, and implies that it was not close by; *witness* refers to seeing something happening, suggesting that this was easily seen and of considerable interest, and highlights the presence of the perceiver; of these, only *catch sight of* implies anything about the perceiver's expectations before the visual event. *Descry* (a rare word) implies a previous searching for the thing eventually seen with difficulty, and often in the distance; *sight* implies a previous searching of a distant area, not necessarily for the specific object eventually sighted, and the finding of something of great interest. *Glimpse*, *spot* and *sight* are often used when details are given of the perceiver's location when the thing was seen, and *sight* also frequently occurs with adverbials indicating the location of the object sighted, and the time at which this happened.

The thousands of citations in an electronic text corpus undoubtedly hold rich information about aspects of meaning not yet fully understood. I have tried in this paper to describe a method of lexicographical analysis which uses frame semantics to structure the insights derived from the data, and the data itself to control the lexicographer's intuitions, and which offers a vocabulary to describe more consistently similarities and variations in word meaning.

NOTES

1. It is only fair to say that this introverted defining technique is not exclusive to AHD and CED; the same could be said of the other major monolingual English dictionaries of similar size.
2. As well as AHD and CED: *The Chambers Dictionary*, Edinburgh: Chambers Harrap, 1993; *Concise Oxford Dictionary*, 8th Edition, Oxford, UK: Oxford University Press, 1990; *Longman Dictionary of the English Language*, London, UK: Longman, 1984; *Webster's New World Dictionary*, 3rd College Edition, New York: Simon & Schuster Inc., 1988; *Webster's Ninth New Collegiate Dictionary*, Springfield, Mass.: Merriam-Webster Inc., 1983.
3. *Webster's New World Dictionary* and *Longman Dictionary of the English Language*.
4. All the citations are drawn from the corpora used by the lexicographers of Oxford University Press; most come from a 50-million-word subset of the main Oxford Corpus of current English, but some for *espy* and *descry* were taken from the Oxford English Dictionary Reading Programme Corpus.
5. The research described here was based on the work of Charles Fillmore (Fillmore 1975, 1978, 1982, 1985; Fillmore & Atkins 1992, and in press), and was carried out as part of the DELIS project ("Descriptive Lexical Specifications and Tool for Corpus and Lexicon Building"), which is partly financed by the

Directorate General XIII of the Commission of the European Community, Luxembourg, in the framework of the Linguistic Research and Engineering Programme (LRE 61.034).

6. As well as Experiencer, Percept, and Judgment, other frame elements were identified for the perception frame, and a full description of these is given in Ostler (in preparation).

7. 100 sentences were extracted manually from the thousands of citations scanned for the verb *look*, and 70 out of the 255 available for the verb *sight*.

8. Paul Kay (personal communication) has pointed out that *spot* can also be used to denote non-visual perception. I should alas have spotted this from the corpus sentence *John had spotted the Cockney pronunciation of the word 'tea'*.

9. I owe this insight (and many others) to Charles Fillmore.

APPENDIX 1

The visual senses extracted from the verb entries in the two dictionaries.

behold

CED *vb.* *Archaic or literary.* to look (at); observe.

AHD *tr.v.* To gaze at; look upon.

descry

CED *vb.* (*tr.*) To discern or make out; catch sight of.

AHD *tr.v.* To discern (something difficult to catch sight of): "*Through the mists they could descry the long arm of the mountains*" (J.R.R.Tolkien).

espy

CED *vb.* **1.** (*tr.*) to catch sight of or perceive (something distant or previously unnoticed); detect: *to espy a ship on the horizon.*

AHD *tr.v.* To catch sight of; glimpse.

glimpse

CED *vb.* **4.** (*tr.*) to catch sight of briefly or momentarily.

AHD *v.* —*tr.* To obtain a brief, incomplete view of.

see

CED *vb.* **1.** (*intr.*) to perceive with the eyes.

AHD *v.* —*tr.* **1.** To perceive with the eye.

Synonyms: *see, behold, note, notice, espy, descry, observe, contemplate, survey, view, perceive, discern, remark, scan, skim.* These verbs refer to being visually or mentally aware of something. *See*, the most general, can mean merely to look at but more often implies recognition, understanding, or appreciation. *Behold*, usually in literary or other formal contexts, is stronger in implying real awareness of what is seen... *Espy* and *descry* both stress acuteness of sight that permits detection of something distant or obscure... *View* usually implies close attention but suggests examination in a special way or with a particular purpose in mind. *Scan* usually refers to quick visual inspection of something but can also mean to examine closely.

sight**CED** *vb.* 21. (*tr.*) to see, view, or glimpse.*n.* 5. a glimpse or view (esp. in the phrases **catch sight of**, **lose sight of**).**AHD** *v.* 1 To see or observe within one's field of vision: *sight land*.**spot****CED** *vb.* 22. (*tr.*) to observe or perceive suddenly, esp. under difficult circumstances; discern.**AHD** *v.* —*tr.* To detect; discern.**spy****CED** *vb.* 7. (*tr.*) to catch sight of; descry.**AHD** *v.* —*tr.* 2. To catch sight of; see.**REFERENCES**

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