Polysemy
A second language pedagogical concern

by
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A thesis submitted to the Victoria University of Wellington
in fulfilment of the requirements for the degree of
Doctor of Philosophy in applied linguistics

Victoria University of Wellington
2009

*In memory of Jeehee, who helped with the data
and dreamt of becoming an English teacher.*

Abstract

This thesis is an examination of polysemy and its effects on second language learners, revealing it as a greater concern than it is normally accorded in pedagogical research. Arguing against a reliance on the dictionary to determine the number of senses a given word has, it begins with a thorough exploration of the concept, both from diachronic and synchronic perspectives, by contrasting it with the related concepts of homonymy and monosemy. A monosemic stance is argued for, which does not deny the existence of polysemy but argues for a framework in which contextual variations of a word are not considered discrete meanings. The *British National Corpus* is consulted for data demonstrating that instances of a word that may appear as discrete units of meanings actually form a single, unified usage. With monosemy redistributed to account for more than it normally does, and with polysemy relegated solely to semantics (factoring out syntax, pragmatics, etc.), polysemy becomes a considerably less sloppy concept, revealing that, at a top-down level, there are essentially only two varieties. The first of these is 'lexical metaphor,' in which there is a clear literal-metaphoric divide between uses, and the second is 'vicariant polysemy' in which senses are discrete but not synchronically explainable by metaphor. Using Hoey's notion of lexical priming, the factored-out elements of syntax, collocation, etc. are returned to, but strictly as effects of the semantic process of sense generation that should not be mistaken for the cause, though they frequently are.

The second part of this thesis moves from the theoretical to the applied, reviewing the sparse literature on the subject. Techniques for raising awareness of the issue among students are discussed as are dictionary skills relevant to polysemy and homonymy. Attention is then turned toward homonymy, examining the problem it poses to word lists and providing the beginning of a solution by revealing which words on the *General Service List* are homonymic and giving the relative frequency of each meaning. A technique to assist learners in acquiring additional meanings of homonyms is examined, as is a technique for guessing new or novel meanings of polysemes in context.

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Part 1: Theoretical concerns of polysemy

Chapter one: The language learner and the polyseme

'I want to shoot somebody!' came a loud, heavily accented voice as I sat in the college's records office in Chicago's South Loop neighbourhood waiting for a transcript to be printed. The anxious looking student repeated himself to the astonished staff: 'I have to shoot someone!' Fortunately, the office was busy enough that he didn't notice one of the workers surreptitiously phone the security guards, who were quick to arrive with their guns unholstered. It was soon revealed that the student was a film major and, as part of his filmmaking assignment, needed an office scene with people talking on telephones and merely wanted to shoot some footage of people doing just that. The student's equipment was out in the hall with his classmate who was waiting for the okay.

What exactly was the root of the student's error? The quick and easy answer is that he used the wrong sense of *shoot*. But how do we know that 'to shoot someone with a gun' is actually a different sense than 'to shoot someone with a camera'? Is there not some semantic level in which shooting a gun and shooting a camera are very similar procedures? While the outcomes are undeniably different, both actions require aiming a pre-loaded, constructed apparatus at someone or something and pressing a control, after which the 'shooting' action is instantly completed. Furthermore, is it logically sound for us to change one word (*gun* to *camera*) and then say that another word (*shoot*) has changed?

Although it will be argued in the next section that the dictionary is not a reliable authority in such a matter, the *Shorter Oxford Dictionary (SOED)*, which enumerates the 'camera' usage separately from the 'gun' usage as sub-senses under a single, larger sense, informs us that the student's grammar was perfectly correct: *shoot* is the appropriate English verb, and he structured it with the proper grammatical arguments, a

subject and an object. His error was entirely pragmatic rather than syntactic or semantic, lying in the context in which he embedded the verb. A reasonable explanation is that he was using the language employed by his film professor or classmates; in the context of a film classroom, 'Go out and shoot some people in an office' is perfectly acceptable and (pragmatically) unambiguous. The professor didn't need to say, 'with a camera.' What the student failed to do was to modulate the verb's context appropriately for the new, non-film environment, which could have been done linguistically with 'I need to shoot some people answering phones for my film project' or 'I need to shoot some footage of people answering phones,' or could have been done non-linguistically: his same sentences uttered as he hauled in the camera and lighting equipment would have stood a far greater chance of being understood, even if they were still not ideally formed. The error was also partly sociolinguistic; in Gricean terms, he didn't provide enough information to be cooperative. Linguistic errors seldom fall neatly into exactly one domain.

The misuse of a single polyseme may not always culminate in the arrival of armed security guards, but it can still result in miscommunication or confusion, easily an everyday occurrence for many learners. Consider the following sentence: *Although the designer of this particular bridge had passed away, he would have been pleased to see it in its final form, connecting the false teeth with the natural ones.* In all likelihood, you encountered some difficulty toward the end and had to reread or re-analyse the earlier material because you had selected the wrong meaning of *bridge*. Another example, one even some native speakers have trouble with: *Bill practised his English every day after school until he finally had complete control over the cue ball.* Here, the polyseme is *English*, jargon in the world of billiards (and bowling) referring to striking the white ball off-centre so as to alter its path after it strikes its target. While admittedly

these garden-path sentences are constructed with the goal of throwing the reader off, they simulate the reading process of intermediate and advanced L² learners.

There are, though, a couple notable differences: first, as native or near-native language users, we were able to pinpoint very quickly which word was the source of our momentary confusion; and second, we stood a better chance of knowing the additional, intended meaning of that word. Even the native speaker unfamiliar with this sense of *English* would, I suspect, realise that that word is the source of confusion and not another.

Imagine, however, an L² learner reading the first sentence who was unfamiliar with the dental sense of *bridge*. Two outcomes are possible when learners encounter known forms with unfamiliar meanings: the learner will either misinterpret the sentence, because the meaning they know works, at least to some degree and not with the meaning intended by the author, or else meaning breaks down completely, because the meaning they know makes absolutely no sense in the context. The first type is easily demonstrated with *The volume of traffic increased during the holiday season*. In the hardly unlikely case that a learner is familiar only with the 'loudness' reading of *volume*, she would apply that meaning because, after all, it makes perfect sense—the traffic got louder; there is nothing here to clue her in that it is incorrect. Likewise, I was once addressing a class of Korean university students about what we had done the last semester that we were together. Ploughing on and believing they understood me, I eventually realized, when hearing one student translate for another, that *last semester* was being understood as 'the final semester.' Although they knew such terms as 'last night' and 'last week' where *last* has a meaning of 'previous,' they had failed to access and apply that meaning, clinging to the more familiar (to them) reading of 'final,' an interpretation which prevailed in spite of such 'evidence' as my talking about the

previous semester in the past tense and referring to events and happenings they should have remembered. A wrong—and not even unknown—reading of a single word caused a misinterpretation of the entire discourse. Just as we did with the garden-path sentences above, the students then had to re-analyse the earlier material, and I had to repeat much of it. Similarly, *sound* is a very basic word that most students know well, and this familiarity alone will prevent many of them from detecting a different sense in *The ship made its way through the sound*, resulting in a reading which makes sense, despite forcing the learner to interpret it on a more abstract level rather than apply the rarer but more concrete 'sea inlet' reading. This sentence provides the student with no reason to suspect they may misunderstand a word and reach for a dictionary (and even if she did, a learners' dictionary such as the *Collins COBUILD Advanced Learners'* (COBUILD hereafter) doesn't include this meaning anyway).

Discussing this very phenomenon, Laufer (1997:26) writes: 'It often happens that students know one meaning of a polyseme or a homonym and are reluctant to abandon it even when, in a particular context, its meaning is different. [...] The mistaken assumption of the learner [...] is that the familiar meaning [is] the only meaning.' An L2 learner encountering the sentence *Her sister teased Julia's hair* in her reading assignment may know *tease* only in its 'laugh at/be sarcastic about' sense; the learner again has no reason to assume another meaning is possible. This is technically sylleptic as the 'laugh at' reading is ungrammatical—the sister should tease Julie *about* her hair—but this is a judgement based on a level of competence that may be inaccessible to the learner. Embedding that sentence in a fuller context may offer contextual hints that a different meaning is present, but, as Laufer claims, in no way guarantees the reader would realise a second meaning would be possible and they're misinterpreting the sentence, nor is there a guarantee that the learner will be able to trace the source of

confusion back to *tease*. They may walk away with a misunderstanding that the sister is sarcastic and unsympathetic, a misreading that could potentially colour their interpretation of the character and even the story as a whole, just as my students' misunderstanding of 'last semester' affected that entire discourse. And the instructor might never know where this misinterpretation comes from.

The second outcome when a learner encounters an unknown meaning of a known word form is seemingly even more damaging to the discourse because communication breaks down completely. However, if the learner stops and tries to negotiate the meaning, it may be more productive. Of course, many learners will keep listening or reading, hoping either that the continued discourse will provide sufficient context that they can catch up or that the confusing part will prove unimportant. While these are possible outcomes, so too is the possibility that they will just get more and more lost.

These two outcomes are based on the assumption that the students know the form and one meaning. However, the student may be unfamiliar with the word form to begin with. Suppose, for example, that a learner is unfamiliar with the word *register* when she encounters it in a reading assignment. She then turns to a dictionary which provides a variety of definitions and she then has to select the appropriate one. This may sound like a simple task, but two factors need to be considered. First, the ability to select the proper sense depends on her full understanding of the context in which the word occurs, and this understanding is already undermined by her not knowing at least one word. This assumes she knows all the other words and has chosen the correct senses of any other polysemes in the immediate context. Any other unknown words or incorrectly selected senses increase the problems exponentially. Second, dictionaries, even ones designed for learners, often break words down into minute distinctions. When

the *COBUILD* contains eight definitions and phrases for *sort*, nine each for *register* and *deposit*, 26 for *point*, 46 for *head* and no less than 73 for *time*, we can see why the dictionary is a tool many choose to avoid. (The lexicographical practice of segregating words into subtly distinguished units of meaning under the guise of accuracy warrants serious examination and will be discussed in section 1.1 and frequently thereafter.) To narrow the dictionary definitions down, the learners will have to identify correctly the part-of-speech of the word, which they may not be able to do as easily as their instructors like to think, especially when comprehension is already compromised. Having to stop their main reading and then read through a multitude of often very similar sounding definitions can be quite a lengthy detour, even if it is not always as extreme as suggested here.

There is a final possibility, that the student will know that the form has multiple meanings and be familiar with them all. Even here the student may have to pause and look for contextual clues, scanning backwards and forward for them, to determine which meaning to apply. In cases like *the volume of the traffic*, there may not be any clear evidence to promote one sense over the other, though the student *may* pick up on the fact that no other evidence supporting the 'loudness' reading may tip the balance in favour of the 'amount' reading.

Polysemy is clearly a very real problem for learners, one greater than the small amount of attention it has attracted in the literature would suggest. This thesis is an examination of precisely the phenomena discussed above: how do students learn to decode and use polysemes? Does knowledge of exactly one meaning assist with understanding an instance that uses another meaning, or does it interfere with it? Can students be equipped with strategies to decode the polysemes they encounter? How can they, unlike our film student, know how to provide the proper context for evoking their

intended meaning?

The reader must be burdened with a request of patience, however, before arriving at a clear definition of what polysemy is. We may know the term to refer to words with multiple meanings, but this definition is parasitic upon definitions of *multiple* and, more slippery, *meanings*. Most readers will bring with them a vague sense of what polysemy is, but this understanding may be based on unexamined assumptions, so the remainder of this chapter will attempt to delimit the scope of the term by discussing what it is not. Specifically we will examine the dictionary paradigm of polysemy, and, in turn, two important contrasts to polysemy: homonymy and monosemy. The reader's patience will be rewarded, I hope, in chapter three when we arrive not only at an understanding of the term polysemy but also discuss the relatively few types of polysemy that exist. The polysemes and monosemes examined throughout this thesis are relegated to content words; the learning of deictic and existential *there*, the various uses of *on*, etc., will not likely be facilitated by the strategies presented herein.

1.1 The dictionary paradigm

*And be these juggling fiends no more believed,
That palter with us in a double sense;
Shakespeare,
Macbeth*

The first assumption that requires examining is not just the dictionary treatment of polysemy but also the authority with which we users empower the book. It is no great revelation that dictionaries ascribe differing numbers of senses to various words. This is not a fault since, after all, different dictionaries have different purposes. *The Oxford English Dictionary (OED)* and the *Shorter Oxford English Dictionary (SOED)* trace the etymology of a word and include senses that have long fallen out of use in English. The

COBUILD, on the other hand, not only ignores these senses but omits senses that do have some currency in the language but fall below a certain threshold level of frequency. It does not, for example, include the billiard sense of *English*, nor the 'water channel' sense of *sound* discussed above.

Lexicography and lexicology are areas where one might expect to find rules for determining the number of senses a word may have, or at least some substantial literature towards their development. Several works on meta-lexicography were consulted, including *Teaching and researching lexicography* by Hartmann (2001), *Lexicography: An introduction* by Jackson (2002), *Dictionaries: The art and craft of lexicography (2nd edition)* by Landau (2001) and *Modern Lexicography: An introduction* by Henri Béjoint (2000). In bullet-point form, Hartmann (2001:92) asks questions regarding which dictionary sense is more 'core' and which are 'derived,' in what order are they arranged and how are they marked. He does not, however, attempt to answer them. Jackson's introductory text runs over 200 pages but discusses polysemy only on two discontinuous pages, Landau's, just shy of 500, treats the subject for less than one.

For researching polysemy, this is very troubling. Language users, including not just linguists but lawyers and judges, often turn to the dictionary for evidence of a word's meanings, but the field of lexicography does not offer the scholarly authority we often attribute to it in matters of meaning. The dearth of discussion in the literature may stem from an understandable unwillingness to waste pages of introductory texts on what is perceived as an inexhaustible topic with no solid answers (as it is a Pandora's box situation), but the implication of the near silence is that not only do lexicographers rely mostly, if not solely, upon their intuitions, but, perhaps worse yet, that these are enough and require no shaping by theoretical advances. How, then, can dictionaries agree on the

number of senses a word may be said to have—let alone what they are—when the subject might not even be considered worthy of discussion?

The topic of polysemy is allotted more room in the final introductory text, Béjoint (2000), which addresses both practical applications such as the sequencing of definitions and theoretical issues. However, that it is mostly treated at the very end of the book, in a chapter entitled 'Whither lexicography?' further explicates the lack of implemented theory in current practice. Béjoint, as he does with several issues throughout the book, gives no answers but does not shy away from discussing the questions, which ultimately strikes at the nature of the dictionary itself, raising the question of what its very purpose is. The contrast of Béjoint's discussion with Jackson's and Landau's avoidance illuminates the problem: a proper study of polysemy as a lexicographical concern, and the implementation of the findings, would necessitate a significantly different breed of dictionary, probably one that the users would have to be retrained for, which would certainly result in some degree of consumer resistance since the user, trusting that lexicographers are trained in such matters, sees no problem with the current variety.¹

Ruhl (1989) reminds us that the field of lexicography pre-dates that of linguistics by centuries², and that the older discipline has taken little notice of the younger one. Béjoint fleshes this out:

Lexicography was not a recognized branch of linguistics [in the nineteenth and first three-quarters of the twentieth century]; in fact it is still not a central discipline anywhere [in the world], even if there are recognized experts in some countries[.] [...] Lexicographers and dictionary publishers did not particularly want the contribution of linguists in the compilation of dictionaries either. They failed to see what linguists could contribute to the practical task of dictionary-making[...] (Béjoint 2000: 169, 170)

1 In what is probably every Ph.D. candidate's worst nightmare, a new volume on lexicography, replete with three chapters on the practicality and impracticality of polysemy, was published shortly before this dissertation was completed. These articles are examined in appendix 1.

2 This is, of course, debatable. Linguistics dates back at least to Aristotle (Allan 2007) while lexicography can be traced back to the fifth century B.C.E. (Hartmann 2001). Ruhl, of course, refers to modern, i.e., Chomskian, linguistics.

Hartmann also discusses the 'diffuse image of lexicography,' seen in the variety of lexicographical works available, writing:

An accompanying theory has been slow in coming; there is therefore not a strong skeleton to attach disciplinary flesh to. No wonder, then, that practitioners [of lexicography] working in a university context still claim to be part of 'philology', 'languages', '(applied) linguistics', 'media studies', 'information technology', and other subject groups in order to improve their academic respectability. (2000:7)

Ruhl, however, argues that despite the rift, linguists have been very much conditioned by the 'pre-theoretical thrust' of lexicography to assume that words have multiple meanings when, according to his framework, which is presented and developed later in this chapter and the next, only one meaning is usually present. Researchers such as Rodd, Gaskell and Marslen-Wilson (2002), to give just one example, base neurolinguistic tasks on polysemy processing on how the words were divided in the dictionary they consulted.

The problem isn't merely the lack of theoretical structure guiding lexicographers, but that this gives rise to a belief that the inadequacies can be neutralised by increasing the number of senses given. An instance of the word that is not covered by one of the numbered senses is seen as a failing of the lexicographer. This has no doubt led to the inclusion of some wrongly overlooked senses, but it has certainly led to some ridiculously fussy additions. Although edited out of the eighth edition, the seventh edition of the *Concise Oxford Dictionary* included among its senses for *horse*, a separate definition for 'a representation of a horse,' an inclusion that says more about lexicography than it does about the word *horse*.

Here a distinction must be drawn between a 'theoretical framework' and a 'lexicographical practice.' An example of the latter includes the practice of substitutability. Landau (2001:164) prescribes: 'For many words, the definition should

be substitutable for the word in context,' and this has been a common practice with increasing frequency since the eighteenth century. If the word is a noun, the definition is a noun phrase, or if a verb then a verb phrase, etc. Ignoring the criticisms of this practice unrelated to polysemy, the rule of substitutability affects a sizeable increase in the number of senses presented for many words. As a result, lexicographers, Béjoint writes, 'tend to multiply the meanings of polysemous words and to see polysemy where there are only different contextual variations.' A dictionary may, for example, give different definitions of *shy* relating to 'a shy person' and 'a shy smile.' 'Such distinctions,' he continues, 'do not contribute to the effectiveness of the dictionary in the explanation of meaning' (2000:205).

Bolinger (1965:572) breathes some common sense into the issue when he writes, 'Dictionaries do not exist to define but to help people grasp meaning.' Béjoint (2000:234), however, writes of the ambiguity of a dictionary's purpose: '[W]hat is the dictionary after all? A storehouse of the language as it is actually used? A thesaurus of the potentialities of the language, or of the idiosyncrasies of words? An instrument of encoding or decoding?' thus suggesting that Bolinger's claim is an idealisation of what he believes the dictionary should be, worded as if it were the book's sole function when in fact its purpose is multifaceted. No one, I should think, would argue that its purpose would be solely to decode and never to encode, and among their other purposes, dictionaries *do* exist to define, though we might wonder who would find definitions of high-frequency words useful. Béjoint humorously points out that the chances of someone looking up the word *dog* are so slim that only a lexicographer would do it. Why then are such words included if the only people who could understand the definitions are those who already know what the words mean to begin with? Are such definitions merely

academic exercises? Is it feasible that any native speaker could gain a deeper understanding of the definite article by looking up *the* in a dictionary and reading the multitude of senses given? Meaning is a vague thing; seldom can it be both described and accurately delimited by paraphrasing, a claim we shall return to.

The fact is that it is easier to change the dictionary than its users, and the easiest way to increase the accuracy of a dictionary is to increase the number of senses provided per word. (The only other option, while still conveying meaning through the medium of words, is to compose more general definitions that fit more usages, but this would result in very vaguely written definitions, which is probably closer to the cognitive reality of lexical meanings but further from user-friendliness.) This has perhaps contributed to the ambiguity of the dictionary's purpose, or rather its range of purposes. The use of corpora has succeeded mainly in increasing the number of senses—thus, depending on one's view, making the dictionary either more accurate or more pedantic—by illuminating the usages not covered by the definitions already given.

Fillmore and Atkins (2000) exemplify the problem by consulting a corpus to show all the uses of *crawl* not covered by the four dictionaries they consulted. (That the dictionaries they use to demonstrate the inadequate number of senses are learner dictionaries borders, frankly, on straw-man logic. Comprehensiveness isn't a trait associated with this variety of dictionary.) Their stance is constructed on the popular belief, which this thesis challenges, that the meaning of a word is an entirely semantic property that can be partitioned into discrete regions and that an increase of the number of these regions yields an increase in accuracy. Such a view fails to take into account the role pragmatics plays in understanding words and sentences, something that will also be discussed before, and after, this chapter is concluded.

Another issue with polysemy as a lexicographical issue relevant to forging a

pedagogy is the sequencing. The linear or nested order in which various senses are presented reflects lexicographical convention rather than a reality of language. The sequencing of a chain of definitions does not reflect the cognitive storage of meanings nor any property of words external to the users (if such things were to exist). Furthermore, in sequencing the meanings, the lexicographer, or publisher, must make some choices, whether to do it on an historical basis or one of frequency or some other criteria such as cognitive weight, or even the lexicographers' intuitions, etc. While linguists and logophiles might be aware of the convention employed by their dictionaries, the average user would seem not to be. Writing of French students' use of monolingual English dictionaries in a study he conducted in 1980, Béjoint (2000:147) reports that 'when looking up more frequent words, which they seldom did, the students found the definitions divided up according to criteria that they did not understand.'

At one point, I also attempted an experiment involving the learner and polysemous entries in the dictionary. Having been told on several occasions by Korean learners English, of various levels of proficiency, that they generally read no further than the first entry in the dictionary, I decided to construct a test to determine the extent of the truth in this statement. Utilising low frequency words, from the 10,000 frequency band of *BNC* lemmas, words the students weren't expected to know at all, I attempted to compose sentences which used the later numbered definitions to ascertain whether students would be satisfied to interpret the sentence using the first definition. For this experiment to work, the first definition would have to be wrong—it could not, that is, also work. Ultimately, however, the experiment was aborted. Since the goal of the task would have been translation into Korean to determine whether they had chosen the correct sense, the subjects would have been allowed access to English-Korean dictionaries, but words like *circumvent*, *interrogate* or *peruse*, while all considered

polysemous in several dictionaries and offering different translation equivalents for each sense, were all unusable because in no case was the first translation equivalent given clearly at odds with a later definition—sentences, that is, composed with dictionary sense #3 in mind could still have been translated with sense #1, perhaps altering only the connotation. A few exceptions could be found with homonyms, but as such words are generally treated as different headwords, this would be testing a different, albeit related, kind of dictionary skill; furthermore, homonyms occurring at this low level of frequency would have entailed testing extremely low frequency meanings (*punt*: 'a flat-bottomed shallow boat'; *tote*: 'the handle of a carpenter's plane'), and I lacked the resources to ensure the subjects would be using dictionaries that would definitely include such meanings. This, again, undermines the existence of the self-apparent discreteness of senses.

This section has been very critical of the dictionary, but only for the sake of shaking off its influence. My criticism is less of the dictionary itself but with the vicious cycle of user expectations of its authority in meaning resulting in more specific, delimited senses. Divorcing ourselves from the dictionary paradigm of words and their meanings, we should see that words do not necessarily have discrete, mutually exclusive meanings. (Some do, and these will be distinguished in chapter three.) The dissecting of word meanings into separate, numbered units, sequenced in linear or nested fashion, is a system imposed upon them by lexicographers; the task of disambiguating word senses is necessary only because dictionaries have 'ambiguated' words. In a way, the lexicographer is like an analogue-to-digital converter, taking a whole, continuous entity and partitioning it into separate, discrete chunks, a model of the original. In this analogy, providing more numbered senses is increasing the resolution. Learning a word from a dictionary (and a word is very rarely fully learnt from a dictionary) would entail

a conversion back to analogue, from modular representation to unbroken whole. Yet a word is not an integration of these numbered definitions because that would imply that the modules were the reality and the word the composite, a reification of the model.

Thus a study of polysemy as a linguistic phenomenon must distance itself from a reliance on the dictionary as an authority on the issue. The dictionary should not be anything more than a guide (and sometimes it has indeed guided me to word usages I was overlooking). Bolinger's claim above that it should lead the user to meaning rather than define is one worthy of remembering, even if harmless drudges disagree. But the questions of what polysemy is, how (or even if) words are divided, how (if so) the senses are related to each other must seek their answers somewhere else.

1.2 Homonymy, diachrony, and synchrony

Traditionally, the terms *homonymy* and *polysemy*³ are used for the phenomenon of multiple meanings. When meanings are related, we talk of polysemy, and when meanings are unrelated and essentially coincidental we call them homonyms. For example, *cricket* the insect and *cricket* the game are homonyms while *hot*, as in food that is piping hot and food that is spicy, is a polyseme; a *ray* of light and a *ray* that swims in the ocean represent homonyms, and the kind of *dream* we have at night and the kind we have for our futures are polysemes. We can even detect more distant relationships, at least when we turn conscious attention to them, such as *chest* as in 'torso' and treasure chest, where both house important things, and *letter*, 'a single character of a writing system' and 'a missive.' Sometimes the senses are very obviously unrelated, as in *copper* the metal and *copper* as (old) slang for 'police officer.' The word *fan* is a clipped form of *fanatic* and therefore semantically unrelated to the fan we use to

³ Some linguists use the term *regular polysemy* for what is here called *polysemy*, and *irregular polysemy* to denote homonymy. I will retain the traditional mononymic terms in part because I don't find polysemy all that 'regular.'

cool ourselves off with. Most dictionaries (the learner variety often being the most notable exception) give separate entries for homonyms, grouping polysemous senses under a single entry, and this is one lexicographical practice not deemed controversial here.

As the notions of relatedness and unrelatedness will later inform strategies for learners to deal with multiple meanings, we will retain this distinction; however, we cannot pretend that it is as clear-cut as the terminology suggests. Multiple meanings can be seen either from a diachronic viewpoint, where etymology comes into play and meanings are either historically related or not, or from a synchronic one where meanings are seen to be related or not without recourse to external authorities such as dictionaries, relying on the user's intuitions or justifications.

If these viewpoints were different paths to the same results, our discussion of them could end right there. In fact, though, they can yield vastly different conclusions. We know the word *ear* to be the organ of hearing but also a head of corn, and we can see a connection between the two, a head of corn can, with some imagination, resemble the hearing organ, and many of us have grown up with that assumption (we do, after all, also talk of heads of lettuce, ribs of celery, artichoke hearts and black-eyed peas, not to mention elbow macaroni, finger food and even cauliflower ears, which tend to accompany knuckle sandwiches). However, the two are, from the viewpoint of etymology, unrelated. The word *corn* itself has unrelated meanings. In addition to the food sense, we may talk about a person having a corn on her foot, and children learning the language may assume there is some connection, that it resembles a kernel of corn in some aspect (shape, size, colour), but again, there is no historical connection. Likewise, the word *riddle* in *His body was riddled with bullets* can be seen as related to the common sense of 'a puzzling question with a clever or humorous answer,' especially to

those us who do not have *riddle* 'a large, coarse sieve' in their dialects. (Not that there is anything humorous or clever about being repeatedly shot, but it is, I suspect, a confusing and shocking experience.) We also know we can, in some dialects, pry open a door with a crowbar and since we could then pry into (as in peep into) the room behind it, we might assume that one sense branched off from the other, but again etymology reveals separate histories for these two senses.

Synchrony and diachrony can clash in the other direction as well, where meanings are felt to be unrelated but do in fact share a common history. In fact this is easily the more common occurrence. The word *volume* has at least three distinct meanings, or families of meaning, including those related to loudness, tomes and magazines, and amount (of liquids and, by extension, other things such as the aforementioned traffic). But from a diachronic view, these meanings are all connected. Or, more graphically, the meanings of *stool* in its 'footstool' and 'faeces' senses will be felt by most to be very different senses but, again, there is an historical connection in a kind of stool that once served as a commode, though this usage is now archaic. Connections through now-lost meanings are by no means rare. Dictionaries also tell us that *foil* as in 'aluminium foil' and as in the more literary sense ('Watson and Moriarty served, in different ways, as foils for Holmes.') share a common history and are therefore, from a lexicographical view at least, the same lexeme. The word *plant*, an English word since the ninth century at least, gave rise in the 18th century to the 'factory' sense, mostly in American English. I can see the metaphor but not until I gave it conscious attention. And sometimes, the connection can be even more oblique, but dictionaries such as the Oxfords still treat the disparate senses as historically related; we have, for example, the tennis sense of *love*, the billiards and bowling sense of *English* alluded to above, and the 'old joke/song/etc.' sense of *chestnut*. Sometimes there are stories that explain these

senses, but these stories, or folk etymologies, are unreliable. For example, I once heard that a group of workers in America would pour, on their breaks, vodka into their orange juice and, lacking spoons, mix them with their screwdrivers, hence the drink became known as a *screwdriver* in the U.S. There is no reason to assume the story's accuracy (it appears in no dictionary that I've consulted), nor does the story, even if true, connect the two senses of screwdriver as a polyseme in any way other than etymologically.

While both diachronic and synchronic approaches are certainly valid, the remainder of this thesis will consider polysemy primarily from the viewpoint of synchrony. There are several reasons for this, but the most important is that if we, as teachers, cannot readily see a connection, then there is little point in explicitly learning and teaching obscure relationships to our students. If we want them to develop an ability to deduce related meanings, then we should remove hazily related senses from the playing field and focus on those that show patterns that can be taught. That there is some connection between *draw* 'to sketch' and *draw* 'to pull' is unimportant to the general learner who should not be burdened with distinguishing this kind of polysemy from pure homonymy like *bridge* as a unit of infrastructure and *bridge* the card game. However, knowing the basic sense of words like *flavour* or *loud* is beneficial for their learning the more clearly 'extended' senses seen in 'a strong 70s flavour' or 'loud ties.'

A synchronic treatment naturally involves our intuitive judgements; however, it is important to define what we mean by this. Simply being able to 'see a connection' will lead us into all sorts of problems as some of us will see connections that elude others. While, for example, the three senses of *volume* seem quite distinct to me, others see it quite easily as a unified whole: volume is the amount of sound, just as it is the amount of liquid, and tomes are writings of a voluminous amount. Likewise, an *appendix* can be part of a book following the main text or an internal human organ, a distinction that

doesn't allow for much connection, except that some people will see them both as essentially optional or removable elements of the systems they are found in, systems that fully function without them. Here the connection is to an aspect of meaning (the 'optionalness') peripheral to either meaning.

Furthermore, words, or rather their meanings, can be related in different ways. We have, for example, not just the linguistic sense of *morphology* but also the zoological usage. Both emerge in English within 40 years of each other according to the *OED*'s citations, but I would suspect that, rather than one sense generating the other, both were formed by independent recourse to Greek. And while we are talking of homophonic words, we can also talk of homophonic music. These uses of *homophonic* are related through their etymologies and thus should be considered polysemes, but the relationship between them is ultimately meaningless; the senses themselves are not related. A somewhat similar case is found in Lyons' (1977) account of *port*, which is traditionally cited as a homonym ('harbour' and 'fortified wine') though he demonstrates that, if you go back far enough, the two do share a common etymology, raising the question of where the line should be drawn.

The problem is not that intuitions are faulty and unreliable—there would be little point in forging a synchronic approach in that case—but rather, that we're asking ourselves the wrong questions. 'Do I see a connection between these two meanings?' yields a judgement too vague to be useful. Furthermore, the presence of a connection does not prove that we are dealing with two senses. I can intuit a connection between a robin and a chicken, but this is poor evidence that we have two senses of *bird* here. The problem is that the word *polysemy*, hinging on the concept of relatedness, is too vague. We have already seen that 'just being related' is an empty claim. If intuitions are to be of any value to us, they need to be addressed by very specific questions in the form of

diagnostic tests which will be presented in chapter three.

Semantics has, understandably, paid little attention to the related concepts of words that differ in one aspect of form (either written or oral) but not the other. Words that have the same written form but differ in their pronunciation are called *homographs* and include such instances as the noun *record* and the verb *record*, the present tense form *read* and the past tense form *read*, the word form *bass* as a register of music or *bass* as a kind of fish. Along the other axis, words with the same pronunciation but different spelling are *homophones*. Examples of these include *gate* and *gait*, *mist* and *missed*, *slow* and *sloe*, *compliment* and *complement*, *discrete* and *discreet*, and *base* and *bass*. It also includes *flower* and *flour*, which are etymologically related. Since these terms are often used indiscriminately to mean *homonym*, and since *homonym* is sometimes used to refer to either one of these subclasses, they are presented here mainly to sort out any confusion. The term *homonym* will be used in this thesis to refer to instances in which both the oral and written forms are identical⁴. A full treatment of homographs and homophones is beyond the scope of this thesis, but their effects on L2 learners are not to be slighted and so will not be completely ignored here. Laufer (1988) has written extensively on what she calls 'synforms,' which include not only polysemes, homonyms, homographs and homophones but even words that just look or sound similar (*industrious* and *industrial*; *deduce*, *reduce* and *induce* etc.).

For years, and largely still, homonymy has been the main contrast for polysemy. It has the benefit of being a synchronic judgement that can (usually) be diachronically validated and is thus mostly a mechanical distinction: either a word form clearly represents two unrelated lexemes or it does not, and this is perhaps the most telling, if

4 The words *heteronym*, *heterophone* and *heterograph* are sometimes used to denote these same distinctions. In this paradigm, a homograph is any word with the same spelling, even if the pronunciation is the same, while homophones are any words that sound identically. While certainly more accurate, I find this distinction unrewardingly fussy.

undiscussed, contrast between homonymy and polysemy. Homonymy is a quick fix for the problem of defining *polysemy* since it is an easier concept to define, relegating polysemy to whatever remains once homonymy has been factored out, and thus bypassing an actual definition of polysemy. However, another contrast for polysemy, one richer in its potential to unveil the properties of polysemy, is monosemy.

1.3 Monosemy

*The intolerable wrestle
With words and meanings.*
T. S. Elliot

It is Charles Ruhl whose name is most strongly associated with monosemy, arguing that what lexicographers and linguists alike consider polysemy may in fact be monosemy, that what we attribute entirely to semantics is in fact largely a matter of pragmatics. The solution for many of the problems raised so far is to decrease the number of senses rather than increase them, not to make the numerous senses more specific but rather to make the few senses more general, and therefore more capable of applying to more situations. (I dismiss this above as making dictionaries less user friendly, but Ruhl is talking of monosemy as a linguistic reality rather than suggesting a lexicographical practice.) This position is outlined in his 'monosemic bias' (1989), which argues that words should be considered monosemic until proven polysemic. Ruhl's paradigm is founded on the belief that linguistics, at least in its treatment of polysemy, has been conditioned by lexicography which has never been a particularly scientific field and, as noted above, significantly pre-dates it. That is, dictionaries divide word senses primarily by the intuitions of their lexicographers, and linguistics, coming along centuries later, has inherited this model, with linguists relying either on their own

beliefs of word meaning or else lexicographers'. The monosemic bias, then, is an airing out of years of unquestioned, deeply rooted assumptions and re-establish the field on a new, solid foundation, a foundation where it should have been all along. Rather than summarizing Ruhl's argument here, his methodology will be repeated and demonstrated. A full discussion of this necessitates a lengthy treatment in order to highlight a fraction of the points Ruhl raises in his book-length treatment.

To demonstrate his techniques, we will examine a single verb which is generally considered polysemous. The word, chosen at random from West's (1953) *General Service List (GSL)*, is *believe*. Ruhl's approach was essentially a corpus-based one although he seldom consulted an actual computer corpus. Despite that fact that he had access to the *Brown Corpus*, which he does draw a few of his examples from, the vast majority of the example sentences he uses were found in the field, presumably culled from the books he was reading. The methodology employed here will, however, draw upon the *British National Corpus (BNC)*. The treatment of monosemy here is intended only as an overview, while a more thorough examination of it comprises the following chapter.

The *BNC* search query was for all instances of *believe*, *believes*, *believed* and *believing*, but as this unsurprisingly yielded more hits than the *SARA* program could handle, 2000 random selections, one per text, were drawn. The examples cited here are chosen from this large selection based on their brevity and, more importantly, their self-contained clarity rather than sentences whose meanings are unclear without recourse to the larger context. Some minor, unobtrusive editing was performed on these sentences, generally to trim off independent clauses in which the token does not appear or to remove quotation marks when both do not appear in the same sentence, etc.

Ruhl's method is to 'question each proposed distinction' (1989:28) and begins by

dividing a word into syntactic categories such as intransitives, transitives, etc., examining each as separate entities. The unstated assumption is that such categories contrast on one level, syntax, so a semantic contrast cannot be isolated. We will retain this practice here just as we will begin with basing our examination on the *OED*'s, to recreate Ruhl's methodology and therefore to retain its syntactic distinctions. Archaic and obsolete usages will be ignored since Ruhl's approach is largely a synchronic one and because such usages wouldn't be expected to turn up in the *BNC*.

Intransitives

The first use of intransitive *believe* listed in the *OED* is to 'to have confidence or faith *in*, and consequently to rely upon...' Sentences 1-10 illustrate this.

- [1] I don't know if I believe in God.
- [2] If she believed in the Prime Mover she would be praying.
- [3] That she still believed in Allah and prayed regularly at the nearby mosque.
- [4] We believe in child conversion.
- [5] Not unless you believe in miracles, I won't.
- [6] Marketing will only work for those who really believe in listening and responding, it starts and ends with caring for people.
- [7] I think the first thing you're going to need from any candidate is that they're going to have to believe in Europe.
- [8] But do you believe?
- [9] No, I don't think I believe at all.
- [10] We have been written off all season, but we must keep believing.

Sentences [1]-[3] correspond to sense I.1.a., which specifically refers to a belief in a person, while I.1.b is exemplified with [4]-[6], 'to believe in a thing.' The question then is what to do with [7]. Is *Europe* used metonymically to refer to the people of Europe or the concept? Or if it doesn't matter, then why make the distinction? The remaining three sentences illustrate the use of *believe* with no prepositional support, I.1.d. (I.1.c. reflects a former usage using *of*).

The next relevant definition ('to believe in (a person or thing), i.e. in its actual existence or occurrence') can be illustrated with the following:

[11] On such a night as this, he told himself, one could believe in ghosts and phantoms, and yet this small, fragile old lady climbs up into the whistling darkness unafraid.

[12] Children who are young enough to believe in Santa Claus are not old enough to carry the action on their own without the help of an adult to keep things moving.

[13] I Believe in Doubt

The question is why are beliefs in God and in Santa Claus encoded as different senses? Syntactically, these are identical constructions: the subject 'believes in' the object, a person of some kind or a thing. On what basis can we say they contrast semantically? The point argued by Ruhl is that we can't. The perceived difference stems not from different readings of *believe* but from pragmatic knowledge regarding the difference between God and Santa Claus. Belief in the latter is an either/or distinction; either one believes that Santa exists or one doesn't. However, belief in God is more involved, entailing not just a belief that God exists but a belief that God is capable of certain feats. Stating a belief in God leads to assumptions about other beliefs the speaker may have, while Santa, according to the stories, does not visit only the children who believe in him; he places no demands on the faith of those he visits. The important thing to note is that the distinction we attribute to *believe* (whether we are theist, atheist or agnostic) is based on our knowledge of the words *God* and *Santa Claus*, and thus not from knowledge of the word *believe*. It is these nouns that lead us to consider *believe* is polysemous for these usages even though its semantic and syntactic behaviour is consistent in both situation. Hence, the alleged senses of the intransitive use of *believe* are really a single sense.

Transitives

The first transitive use of *believe* defined by the *OED* is to 'give credence to (a person in making statements, etc.),' which can be exemplified as follows:

- [14] You see even when they tell the truth, if they've been telling lies for a long time, even if they, when they tell the truth you don't believe them
- [15] He claims the battery ran out before he got to his presentation on the course but I don't necessarily believe him.
- [16] And you believe her.
- [17] But you didn't believe him?
- [18] 'Will they believe you, Mum?' repeated Jack.
- [19] Well, I believe you, for some reason.
- [20] You might be able to influence my friend, but I won't believe you and I will stand up to you.

The next sense is very similar, 'To give credence to, to accept (a statement) as true, ' the two differing mainly in their objects being either people or statements:

- [21] You can't but peek at them just to be titillated, not really believing what they are saying, since they are concocted by charlatans.
- [22] We find things out, not simply by believing what someone else tells us, but by considering the evidence, reflecting upon it, and accepting what can 'prove itself at the bar of reason.'
- [23] You can't believe words that just drop out of the sky!
- [24] But Valerie refused to believe their message.

Again, however, this is a distinction external to the word in question, resting in the metonymy of the object slot, the message vs. the messenger. Rather than showing contrasting behaviour, as we are to believe, it could be argued it merely shows that the same meaning shines through in at least two different contexts, that we have contextual variations rather than two different semantic propositions. The following sense stipulated by the *OED* is, again, another variation in the argument, which now includes phrases:

- [25] My father once had me believing that the earth was a Mobius strip, not a sphere.
- [26] You believe you are unique?
- [27] I believe it can be done.
- [28] She couldn't believe he was actually here, standing on her doorstep.

The only difference between this definition (#7) and the previous two (#5 and #6a) is in syntax; no contrast in meaning is present. Here we simply have clauses rather than people or statements. Again, the distinction is external to the word *believe* or, rather, a result of the compositionality of all the words, not the semantic contribution of one in

isolation. (If, however, the *OED* catalogues not just a word's meanings but also its syntactic behaviour, then it is interesting to note the omission of [object + object complement] constructions such as 'I believe her to be upright' or 'I believe him to have been unfaithful,' a pattern that would be not be permissible based on the information given.)

It should be noted that sentences [21] and [22] could be given as evidence of this sense as the object of their verbs are *wh*- clauses. But the argument proposed here is that there is no meaning difference between any alleged sense presented by the *OED*, that it is all one sense to begin with, that [14] and [28] are the same sense anyway. That they could be assigned to either definition only strengthens the argument for monosemy. The point could also be made that the dictionary, the *OED* in this case, does not intend these to be separate meanings and that it is merely denoting various syntactic properties of the word. But to claim this is to claim that the purpose of the dictionary is as a grammar rather than a semantic-based lexicon, and it has already been demonstrated in the previous section that the purpose of the dictionary is multifaceted. This could be better addressed by including all the syntactic information under each sense rather than according them separate status. The question remains (and I'll make no attempt to answer it) of why the *OED* decided to separate them. Why should cases in which transitive *believe* takes people, words or grammatical phrases as its objects denote three separate usages?

According to this analysis, *believe* is very clearly monosemic, yet lexicographers treat it otherwise. Seven definitions can be found in the *COBUILD* (not including three phrases, such as 'cannot believe your eyes,' which we haven't examined here). This is perhaps the broadest overview of Ruhl's monosemic bias imaginable, so broad that it fails to raise many points central to his position, points which have influenced the work

presented in this thesis. Thus an expanded treatment of monosemy follows in chapter two.

Before concluding, the relationship between polysemy and idioms needs discussion. An idiom is considered here as a multi-word unit whose meaning is not predictable by the compositionality of its individual words. Thus, the afore-mentioned 'cannot believe your eyes' would not be an idiom because the meaning is clear from the individual words, despite the economical use of metonymy (*eyes* for *what the eyes see*). In cases of actual idioms, such as *make no bones about it*, it is sometimes tempting to consider some of these individual words (here, *bones*) as polysemes though this stance is not espoused here. A polyseme or homonym must have a degree of independence from any construction it finds itself in. Thus any alleged, alternate readings of the words that comprise an idiom are restricted to that particular idiom; if, after all, the meaning of a word could be found in different constructions containing that word, then the meaning of the idiom would be predictable by it.

Let's back up and explain why the phrase *make no bones about it* is an idiom. Certainly, it defies any kind of literal translation and therefore has the possibility of being either an idiom or simply a phrase which happens to contain a polyseme (of which the only real candidate is *bones*). In the interest of retaining focus and avoiding a lengthy exploration of idiomaticity that would take us far afield, it is preferable to simplify the results to: (a) polysemy/homonymy or (b) something else. This latter category might include idioms, metaphoric constructions (nonce or established), fossilised forms, etc. Because it is impossible to use *bones* in any other context that evokes the meaning it appears to have here, it has to be relegated to (b). Failing the recontextualisation test, it is therefore not the word but the full construction in which it is embedded that seems to charge the word with this particular meaning.

Productivity, then, is a trait of any polysemic sense or homonymic meaning. When the meaning is restricted to a very specific context, unable to occur anywhere else, then it belongs to the non-polysemy category. Similarly, *water* in a context like 'This explanation holds no water,' can be paraphrased variously as 'sense,' 'validity,' etc., a reading that can only be evoked when this noun is the direct object of *hold*, although there is more variability here (*holds no water, holds little water, does not hold much water*, etc.). Despite familiarity with *make no bones about it*, we would normally not conceive of 'validity' as one of the meaning of *bones* if considering the isolated word.

Conversely, although the 'old joke' meaning of *chestnut* has an idiomatic feeling to it in that it cannot be predicted from its food sense, it can only belong to the polyseme/homonym category. Context is necessary to override its default sense, the one that jumps out when the word is discussed outside of any particular sentence, but there is no one specific context that is required for this. Being a single lexeme, *chestnut* naturally has to occur in various environments. If it were restricted to any, then it wouldn't be a single-word unit; a mononym, by its very nature, has to be productive.

This leads us to the phrase *flavour of the month* which I do not consider an idiom. The meaning of each word predicts the meaning of the phrase: it may not be a calendar month nor a 30-day period, nor may it be a literal flavour, but it is the larger phrase that, as a whole, is conflated with a metaphoric meaning. There are clubs which send to its members a new variety of wine, cheese, etc. each month, and a popular conception of these clubs is that its members rave about each new variety as if it were the best, supplanting the previous month's praise, so when we talk of, for example, teenage angst being the flavour of the month, it is not a metaphoric flavour nor a metaphoric month but a metaphoric flavour-of-the-month. The polysemy here is neither *flavour* nor *month* but the entire phrase because there are both literal and metaphoric

flavours of the month.

Conclusion

We have examined why polysemy can be a very real problem for learners. Although we have not yet defined what is meant by polysemy, we have examined some related basic concepts. Without having yet defined it, we have established by elimination that polysemy regards related senses, as opposed to homonymy, which are naturally unrelated, as opposed to monosemy, and that it should be mostly the domain of semantics, as opposed to pragmatics. Contextual variation, including differences in arguments a word may take, have no influence on its claim to monosemy. We have dissociated ourselves from the lexicographical authority in this matter and, with pedagogy as our ultimate goal, have argued for a synchronic view.

Chapter two: Monosemy expanded

entia non sunt multiplicanda praeter necessitatem.
(‘Entities should not be multiplied beyond necessity’)
(attributed to) William of Ockham

Synchronically, the contrast of homonymy and polysemy is generally an either/or distinction, with only a little overlap in which some related senses have become so distinct that the user may not be sure if they are related or not. Synchronic intuitions can be compared to, and sometimes informed by, diachronic data. The monosemy-polysemy contrast, conversely, is a theoretical viewpoint, one that stems from the very way we conceptualise the world around us, with conceptual thinkers being (to generalise) ‘lumpers’ and more analytic thinkers being ‘splitters.’ (As a conceptual thinker, Ruhl does not always spell things out and can be hard to follow at times. In his critique of Ruhl, Cruse (1992) wrestles with understanding Ruhl at several places. I hope to avoid this error here.) It is for this reason, and because of the potential but damning criticism that *believe* was too easy a target, that I present a more developed case for monosemy. The goal here is less to argue for monosemy than to present it as a theoretical framework, discussing points that the treatment of *believe* wouldn’t raise. While this remains an encapsulation of Ruhl’s (1989) book-length argument, I cannot deny that some of myself has leaked in, and perhaps at times even taken over.

In the first chapter, mention was made of Fillmore and Atkins’ (2000) article which argued that learner dictionaries failed to enumerate enough senses for *crawl*. Using the same word, this chapter will take the opposite view, that the verb is in fact monosemous. While their theoretical stance is markedly different, Fillmore and Atkins’ methodology does not differ radically from Ruhl’s; both begin by consulting dictionaries, and both then basically examine a corpus of data to support their claims. Where they diverge, though, is in Ruhl requiring a large amount of data to demonstrate

that the real meaning patterns out over the course of its presentation (a chapter devoted to proving the monosemy of the verb *bear* contains 391 example sentences containing the word, which he warns is probably insufficient), while Fillmore and Atkins make no such demands, relying on a single sentence as evidence. Rather than consulting the *OED*, Fillmore and Atkins reference four other dictionaries: *The Cambridge International Dictionary of English (CIDE)*, *The Collins-COBUILD Dictionary of English (CCDE)*, *the Longman Dictionary of Contemporary English* and *the Oxford Advanced Learner's Dictionary*. I have already stated my distrust of their use of learner dictionaries for illustrating a lack of comprehensiveness, but since Fillmore and Atkins' findings are based on their extrapolation of various definitions of *crawl* from these dictionaries, we will use their definitions as well, rather than the *OED*.

From the learner dictionaries they consulted, Fillmore and Atkins extract nine definitions, not all of which are found in any one dictionary, or, rephrased, the senses are not divided along the same lines in each dictionary. The *CIDE*, for example, begins with a definition 'to move slowly or with difficulty...' with example sentences which includes caterpillars, children and lorries, while these three examples account for three different sentences in the *CCDE* (which, in turn, does not included a dedicated sense for snake movement, as is included in the *CIDE*, etc.). In table format, Fillmore and Atkins note which senses are covered by which dictionaries but do not explicitly discuss the fact that some instances are covered by one definition in one dictionary and three in another.

As summarized by Fillmore and Atkins, these nine senses are presented in table

1:

1.	of person: dragging body
2.	of person: on hands and knees
3.	of baby: manner of motion
4.	of traffic: move slowly
5.	of insects, crabs, etc.
6.	of snakes, worms, etc.
7.	of person: grovel, fawn
8.	of place: be crawling with
9.	of skin etc.: creeping sensation

Table 1: Fillmore and Atkins' extrapolation of senses for crawl

First, I have to confess confusion over the distinction between 1 and 2 since no one dictionary includes both senses; it seems merely to reflect the different wording employed by the lexicographers who are otherwise encoding the same sense. For our purposes, then, these two will be collapsed into a single sense. The following examples are again drawn from the *BNC*, the same corpus Fillmore and Atkins used, to illustrate this sense. I should point out that instances without prepositional support were particularly hard to pin to one particular sense (The sentence *I can't stand crawling* probably corresponds to Fillmore and Atkins' sense #7, but there is no reason, without consulting the larger context, that it couldn't be the first sense.)

[1] He now has severe cerebral palsy, is unable to roll over, sit or crawl.

[2] I would have to go as fast as I could while I could still see the way, and then rest for longer, and then probably crawl.

[3] I can crawl when I have to.

While I don't want to argue that the 'true meaning' is one of these nine specific senses—ideally, the monosemic bias argues that all of them are contextual variations of the true meaning, unless polysemy is present—I must argue that movement on one's hands and knees is not the true sense even if it is the prototype for many users of the word. Consider the following sentences, not from the corpus:

[4] He buttered his bread.

- [5] * He buttered his bread with butter.
- [6] He kicked the ball.
- [7] * He kicked the ball with his foot.

The second sentence of each pair is a pleonasm because the added clause repeats information lexically encoded into (in these cases) the verb. However, this is not the case with *crawl*, where the second sentence below is completely acceptable:

- [8] He crawled to the door.
- [9] He crawled to the door on this hands and knees.

This must be because the use of hands and knees is not lexically encoded into the verb *crawl* in the same way that the noun *butter* is encoded into the corresponding verb or that a foot is automatically assumed as an agent in the act of kicking. This is supported by the following *BNC* sentence which show that there are various ways in which a person may crawl:

- [10] Desperate with fear, he forced himself forward, crawling on knees and elbows under the low canopy.
- [11] He crawled on toes and elbows round the Land-Rover.
- [12] A tall thin guy I had seen in the house before crawled on all fours in front of the television to get at Nicola's joint.
- [13] From a spy to a slimy toad and from this to a serpent Satan moves, crawling on his belly in the dust rather than standing upright in a pool of fire.

Examples [10]-[13] are not pleonastic for the same reason that *He kicked the ball with his right foot* isn't: the information in the *on* PPs that accompanies *crawl* is additional information not already encoded by the verb and thus not part of its inherent meaning, which makes no demands on what parts of the body contact the ground.

We turn now to sense three, that referring to babies. The following sentences are every instance in the *BNC* in which the lemma occurs in the same sentence as *baby* or *babies*. This is not meant as an exhaustive account of this sense since there are also examples in which the verb occurs with the baby's name rather than the word *baby*, or else the baby is referred to anaphorically, but it will provide enough data to make a few

observations.

- [14] Now yoked to her bib, a baby crawls.
- [15] Until that time a baby won't hurt its feet in a walking position, they'll be fairly mobile won't they if you think about it, and how does a baby hold its feet when it's crawling?
- [16] When a baby's crawling how does it hold its feet?
- [17] Fit them before your baby starts crawling.
- [18] So, a baby that can crawl, and lives in a house full of cats, may imitate the cats and smooch up against its mother's legs—a form of communication not usual with people!
- [19] He was a quiet baby, watchful, with a stillness about him which, if he had not been able to crawl and stand and almost walk, would have been a cause for concern.
- [20] It was funny to see it when the babies started to crawl and the boys watched over them.
- [21] Venturing out with a small baby is actually easier than with toddlers, who want to crawl, explore and get up to mischief.
- [22] The baby is shrinking fast, and can't really crawl now though its struggles are something to see.
- [23] I spent a month at home with the children and I suddenly realized all the things that I was missing out on—watching the baby grow up, start to crawl, the first few words, things like that.
- [24] The baby is crawling, only one or two panting inches at a time—but crawling forwards .
- [25] There were several families under the trees now, with little children running around and babies crawling about in the grass.
- [26] She could put the baby into this miniature prison and it crawled there in the trap.
- [27] A small baby crawled out on its hands and knees, its face covered in grime.

Sentences [14] – [23] show the verb without any locative, goal or source elements, [25]-[27] show it with such components while [24] contains one instance of each. This demonstrates a tendency for usages of the verb when discussing babies to contain no spatial information though they are clearly permissible, which is significant because, by my count, the verb *crawl* is, in total, accompanied by a spatial argument over 80% of the time. We should also note that, as [27] demonstrates, even in sentences regarding babies, the verb *crawl* does not lexically encode the use of hands and knees.

These uses raise an interesting question: should the crawling of babies be seen as a different sense than the crawling of adults? And if so, why? To be sure, their purposes

for crawling are different. For babies it may be the only way to move while adults usually have other methods and thus it is a canonical trait. For Cruse (1986), whom I cite despite his vocal criticism of Ruhl, a canonical trait is one which is normally present but which does not alter the entity (as a lexical concept) if not—that is, a dog with three legs is still a dog, a kiwi is still a bird though it cannot fly, and a person who never crawls is no less a person. However, there is no lexical difference in the manner a baby crawls and the way an adult crawls. The only contrast is in reason, but I see no reason why this should be a defining trait. A child may believe in God because he was raised to, while an older individual may do so because of an adult conversion process, but we don't encode these as different senses of *believe*. Furthermore, babies who have learned to walk still continue to crawl for some time. Is this sense one of *crawl* or is it the third? As with *believe* as it relates to *God* and *Santa Claus*, the perceived difference is external to the word, here the subject: adults or babies. It is pragmatic knowledge of the subjects, not semantic behaviour of the verb, that provides the contrast, and since the contrast is not contained in the word itself, *crawl* cannot be considered polysemous for these two uses. The contrast in arguments only demonstrates the wide range of contexts which this sense can occur.

Another point is that in consulting the *BNC* to find sentences that illustrate the contrast between the adult and baby senses, I had to pass over a good many examples in which it was unclear which 'sense' was employed (even in [1] the possibility that the subject is a baby is still present). Although Fillmore and Atkins' presentation of the nine senses above are not actual 'definitions,' it is only their wording (based on the dictionaries they used) that segregates this usage. I rejected the use of *Rex crawled away* as an example because without the fuller context, I don't know if Rex is a baby or adult, and this is the criterion made explicit by Fillmore and Atkins; that is, it is the

wording of the definition that makes an otherwise unambiguous sentence ambiguous.

The nine senses will be resequenced here to discuss animate subjects first followed by non-living entities; this is primarily for logical flow, so as not to bounce back and forth between ideas. The next sense, then, regards insects and crabs.

- [28] Casually he remarked, 'There's a spider crawling up your leg.'
- [29] She scratched and pulled, but could never find the leeches under her blouse or the spiders crawling inside her tights.
- [30] There was no movement except for the tiny spider that was crawling up Nicky's arm.
- [31] Children crowded round us; ants crawled in the dust.
- [32] Then ants would crawl through the cracks in the floor and build a big nest in the middle of the bedroom.
- [33] At three o'clock, when I had scanned every crack in the ridge, every curve of every dune, every patch of colour on the plain, I looked down and saw an ant, crawling into the wind.
- [34] Clouds of flies were crawling over the faces of the dead Germans.
- [35] Thomas turned and pointed to a fly crawling on the end of the table.

No sentence involving the crawling of crabs was found in the *BNC* (nor lobster, shrimp or crayfish). One common criticism against the use of corpora in linguistics is that they cannot demonstrate potential uses. The *BNC* data is not presented here as a replacement of native speaker intuitions, which we have already accessed in [4] – [9], but to exemplify them when available. I certainly do not maintain that *crab* cannot occur with *crawl* just because no evidence of it exists in this corpus. This would be a problem of relying solely on a corpus for dictionary making however.

Crabs are, of course, not insects (nor technically are spiders), but grouping them together makes explicit the semantic trait the lexicographers wish to highlight: a body parallel to the ground and propelled by a multitude (more than two) of legs. It is important to note that this does not include dogs and cats and many other four-legged animals, despite a similar physical construction. Why, then, are insects said to crawl but not dogs? Presumably because dogs can, in fact, crawl, in a method of moving that is distinct from their normal walking gait; they can lower their bodies to crawl under a

stick or under a bed. Ants and spiders seem to lack this contrast. A physical resemblance between the movement of insects and the crawling method of humans is easily grasped. The fact that it is but one mode of movement for humans and the sole means of movement for many insects is immaterial here just as it was for babies, especially as flies can be said to crawl. (It may well be that the subjects of this sense of *crawl* have more than four legs, but the wording of the definition does not mention the number of legs.)

The next sense takes snakes and worms as its subject.

[36] Snakes that crawl out from under the stone of history

[37] This is an improved model, because when the snake is crawling along with its tail on the ground the red colour is concealed.

[38] The worms crawl onto the sticks, which can then be picked up and dipped directly into the fry tank.

[39] The root gives off a chemical which incites the worms to hatch and crawl into it.

[40] CHARLES DARWIN opened a can of worms which have been crawling their way up the evolutionary ladder of history ever since.

[41] A thousand-legged worm crawls out of the severed wrist.

This presents a new type of movement, one without appendages though still with the 'torso' parallel to the ground. But why should having or not having legs account for different senses of *crawl*, especially as we've already seen that the use of arms and legs are not encoded into the verb? To say it should is to make having legs a criterion for sense disambiguation, a criterion that should be seriously undermined by the fact that animals with legs and animals without legs do both crawl. To break out of the circle of this argument, the movement of ants, babies and worms is covered by the single word *crawl*; that we should decide to make the use of appendages a criterion for splitting it is motivated, or mis-motivated, by a desire to press our vast, nebulous pragmatic knowledge into neat little semantic traits. This is the crux of Ruhl's monosemic bias, that much of what has traditionally been assigned to semantics is in fact pragmatic. It is only the act of defining the term, or rather the difficulty of doing so in one neat

definition, that forces us to split the differences into separate definitions. A perhaps unlikely analogy can be found in Daoism, which sees reality is a continuous, undivided whole, but once the mind conceptualises something as distinct, 10,000 more divisions will follow.

My inclusion of [40], regarding the can of worms, may require some justification because it may appear to some to be a metaphoric sense of *crawl*. Metaphor is, undeniably, present but *crawl* here does not fall under its scope. The metaphor involves the can and worms—that is, it is a case of metaphoric worms literally crawling out of a metaphoric can and *not* an instance of worms metaphorically crawling. The fact that the worms are not physically present is no more relevant than the fact that Darwin isn't either.

We should recall that not all of the dictionaries divided the word in this manner. Fillmore and Atkins, for reasons unaddressed, took each alleged sense from each dictionary as fact and unquestioningly accorded its own individual status, assuming that the larger number of senses more accurately represented the word; the fact that some dictionaries covered several of these usages into a single sense seems to have been given no consideration. This is perhaps not surprising since their survey is motivated by a belief that dictionaries don't include enough senses as it is.

We arrive now at sense 7, the 'grovelling' sense which is clearly a different breed than the usage(s) discussed so far. The *BNC* provides the following examples of this sense:

[42] It meant she'd have to apologise to Lucenzo, to go crawling to him.

[43] He still felt sullied by what he'd had to do – to crawl to someone like Bernard Walton.

[44] Then he came crawling back...

[45] I bet he ached to crawl back to Hilda, but Ma had him neatly encircled.

When a person crawls in this sense, they can do so without actually physically crawling.

However, the position argued here is that the notion of 'grovelling' is not an inherent semantic trait of *crawl* but a pragmatic conflation. A person may crawl literally or metaphorically, but, if metaphorically, the meaning of *crawl* doesn't actually change. That is, within the context of the metaphor, *crawl* still refers to the same action in the usages described above; the image is still of the person manoeuvring in such a way, just as the metaphoric literally crawled out of the metaphoric can. The illusion of polysemy in this case stems partly from what we read into it, what we mentally add to that image. The instances of *crawling* in [42] – [45] represents humbleness, apology, acquiescence, etc. The larger construction *to crawl back to* ties into a larger context, that of failing to make it on one's own and swallowing one's pride to come back to someone, a former partner, producer, etc., someone with whom the person had previously enjoyed a great deal of success. In domestic spats, it may also tie into the notion of crawling out of the doghouse. In other words, there is more going on here than the words themselves convey. Making *crawl* carry the entire meaning of 'to grovel' and all the overtones that entails—that is, making it completely a semantic concept and rejecting the role of pragmatics—betrays a very rigid belief that meaning is exclusively compositional, that the meaning of a sentence is nothing more than the meaning of its semantic constituent parts. This may also reflect a bias that the majority of literature on polysemy in the last decade stems from the field of computational linguistics (and generative linguistics, which is only a step removed). When dealing with computers, programming semantic properties is probably an easier solution than programming pragmatic knowledge. I don't criticise this practice, but its influence on the study of language as part of the human experience should be kept in check.

Another part of the illusion that *crawl* is polysemous for the 'grovel' sense may arise from a belief that paraphrasing denotes a change in meaning. In the usages

discussed so far, *crawl* was the only word that could carry the intended meaning. (Words like *inch* and *creep* can work in some cases but not all, but they do add or subtract information from *crawl*. *Slither* may work for snakes but I don't believe it's appropriate for every instance involving worms, and even less for maggots, which are presumably covered by the *etc.* in the definition.) With sense #7, we now have an option to replace it with a word (*grovel*) that cannot replace the other usages and thus distinguishes it from them. This is similar to the notion that the act of defining creates more senses but it warrants its own discussion. Of course, 'He crawled back to her' can be rephrased as 'He grovelled back to her,' but 'He crawled back to the door' cannot be glossed with *grovel*. Ruhl warns on the danger of paraphrasing, or glossing, a word:

Although glosses are presented as evidence, faithfully and accurately representing meaning that form obscures, they are rather akin to propaganda, serving external judgments that have been made in advance. We have a typical process of conscious distortion. First, an expression appears puzzling to the conscious mind. Then, instead of researchers admitting they are puzzled, and thus suspending judgment while they gather a wider range of data, they rush to a conclusion, based on paraphrase and compositionality. The conclusion is disguised because it is formulated as a gloss. The researchers then proceed to analyze, not the expression, but the gloss. There are no established guidelines for glosses, and so they can be slanted or subtly rephrased to support any prior theoretical claim. While it is assumed that the glossed expression is misleading, the gloss is taken as accurate, at least to the degree that it makes no difference in the analysis. The researchers then draw the conclusions that are inherent in the gloss. Whatever results is an irrelevancy, because the original data have been eliminated from the proceedings. (1989: 156)

By way of metaphor, it is akin to performing a literary analysis of a summary of *Hamlet* without recourse to the text itself. That we can remove *crawl* in some sentences and replace it with *grovel* while in others we can't (without changing the meaning anyway) is not evidence of polysemy, partly because we have removed the word from the equation and partly because there are no guidelines in our choice of *grovel*. Why not *fawn*, as also given in table 1, or *humble oneself*, *creep*, or *toady*, all of which are equivalents from the COBUILD's thesaurus? Note that each of these introduces

semantic and sometimes pragmatic changes. Humbling oneself is an admirable action in many cultures and is thus not compatible with grovelling. *Creeping* introduces stealth and sneakiness into the picture and obscures the intent of the person, who perhaps is seeking revenge rather than reconciliation or compromise. *To fawn* and *toady* are compatible with only a few usages of this alleged meaning of *crawl*.

Of course, *crawl* actually *can* be paraphrased by *grovel* in the *door* example: *He grovelled back to the door* is perfectly acceptable if we treat *door* metonymically. She kicked him out, slammed the door in his face, and he eventually felt sorry and came grovelling back to that door. In the process of contextualising this, we've completely forgotten that the grovelling sense was never a part of the original sentence: In *He crawled back to the door*, this is certainly a literal usage without a hint of grovelling. We removed the original from the data and jumped to the wrong conclusion.

We leave the usages dealing with animate (or at least animal) subjects and turn to the traffic usages (sense #4), which can be exemplified with the following:

- [46] And they walked on, slowly, very close, knowing the car crawled behind.
- [47] The street lamps were already lit, and a few cars crawled through the rough-mirror streets with their lights on and their wipers flapping to and fro.
- [48] the team was hoisted onto open trucks which took five hours to crawl the three mile distance from Lahore Airport to the Fortress Stadium with thousands and thousands of fans running alongside the procession.
- [49] Behind it crawled a hoverbus of MivvyCorp employees having a party.
- [50] The convoy crawls on.
- [51] All the traffic on the road was also crawling along.
- [52] Time crawled past.
- [53] They stretched and strained in the darkness, and the hours crawled by like years.

As glossing is unreliable proof for the existence of a new sense, we need to distance ourselves from the temptation of saying this sense simply means 'to move slowly' and leaving it at that. If we have an extended or metaphoric sense (the two will be distinguished in chapter three), then we have to account for why—in what ways is it

different from the previous usages? It is easy to say that sentences [46] – [51] demonstrate a metaphoric sense because cars can't literally crawl, and any resemblance we may note of a car to, say, an insect (chassis = torso, wheels=legs), fails to explain instances like [51] where it is *traffic* rather than a type of vehicle that is crawling, and much less [52] and [53], which I will take to demonstrate a unified sense.

What's interesting about this usage is that it highlights the semantic trait of 'slowness'—interesting because slowness is not lexically encoded into the previous usages. A crawling adult may well be moving slower than one walking, but the verb does not *mean* 'to move slowly.' If it did, then the word *slowly* would be pleonastic in [54] -[56], which it isn't, and the adverbs conveying the opposite would be paradoxical in [57] - [59].

[54] Dawn crawled slowly

[55] A cloud of steam crawled slowly upwards from the chimney of Wellshot Baths.

[56] The creature now crawling slowly from my bed of Bibles was.....none other than...Tomas, the cat.

[57] Charlie ignored the order and crawled quickly forward until he came to the prostrate body of his friend.

[58] She began to crawl hastily away from that wall, head turned back over her shoulder to look at it, apparently unaware of their presence.

[59] When he's crawling fast, direct him towards a noisy beanbag.

As these sentences are perfectly intelligible, we can conclude that *crawl* is not lexically encoded for 'slowness' and that this trait has been pragmatically abstracted from the previous usages to allow [46] – [53] to convey 'slowness' without adverbial support. (And it should be noted that an adverb denoting 'slowness' is not redundant here either, as [60] shows.)

[60] The train crawled slowly along until, eventually, our destination came in sight.

What we may be dealing with here is *crawl*'s Axiomatic Lexical Shape. Every word, Ruhl argues, has such a shape, consisting of a core, called the 'ground' and a

periphery or 'figure.' The ground is arbitrary in that it (the form and meaning) must be learnt outright, while the figure is partially motivated or predictable. In many cases, especially primary words such as *do*, the ground is so expansive that there is no room for the figure; there is no extended meaning of the verb *do* because the 'literal' is so all-encompassing. The extended meaning is not a new sense; extending implies a widening, not a detaching. This, I suspect (and I have no doubt Ruhl would agree), is the case here with *crawl*.

Historically, there may be a lexical gap that facilitated this usage of *crawl*. At least according to my intuitions, there is no word that means 'to move slowly' (I acknowledge the convenience of the paraphrase) that isn't dependent on an already established use of the word: *crawl*, *inch* and *slow (down)*. The *OED* has its earliest citations of both words in the 1600s. (I must confess, however, and this is a criticism I might have brought up in chapter one, that I can see no difference between the *OED*'s second sense of *crawl* and its third. If they are the same, then the earliest citation for this sense may be 200 years earlier.) Any other words that may occur in a thesaurus cast distinctly negative overtones upon the agent: *creep*, *slither*, etc. *Creep* can be substituted with *crawl* in [46] – [53] but not without triggering a change of meaning, *slither* less successfully.

However, 'slowness' is not the only trait of *crawl* that can be foregrounded. There are, by my count, at least five reasons why an adult may crawl. We'll cite 'slowness' as one possible reason, though crawling isn't really a method I would choose if I merely wanted to move slowly. Another is to constrict one's body height so as to move into or out of something that is significantly smaller than one's normal, erect height, such as a tent or a small tunnel. This would also include instances of hiding, for crawling under a window to avoid being seen, etc. (seen already in [10]). The third

reason (presented in no particular order) an adult may crawl is because of injury. A person's legs may be injured and thus crawling is the only option, but if he had been shot in the stomach, he still may have to crawl even though his legs would be undamaged. We will include fatigue with injury (the body is not operating at full capacity), as the following examples illustrate:

- [61] He crawled to a local hospital and was transferred to Ankara for treatment;
- [62] Mr Barrett, father of two, of High Mickley, Northumberland, had to crawl for help after being hit in the leg and stomach injured.
- [63] Adventurers who suffer these effects will feel a sensation of almost unbearable weakness and will see visions of exhausted people — dressed as adventurers like themselves — crawling to the doors of the Castle, but lacking the strength to escape.

The fourth reason, and one I would have overlooked without the use of a corpora, is to bring one's self close to the ground so as to investigate it, such as Sherlock Holmes examining the ground for footprints or more minute details, or for looking for something specific.

- [64] They crawled across their chosen ground like detectives armed with magnifying glasses.
- [65] Much later, when she was sure that Rose was asleep, she crawled the length and breadth of the room with fingers outstretched, feeling in every crevice, until she had the ring safe again.

A further reason for crawling is because the subject has, probably recently, been blinded or lost her glasses. This is not necessarily a type of injury because it could include being in a cave with no source of light. The subject is trying to feel her way because she can no longer rely on her eyes, or else she is feeling for her glasses. There are no corpus examples that clearly demonstrate this reason at the exclusion of one of the others, so we will lump this with the 'investigating' reason.

I bring up these five reasons because the *reason* for crawling is not inherent in the verb yet each can be foregrounded in extended usages just as they are in non-extended instances. We have already seen how slowness is extended above. An

extending of the 'wounded' facet can be seen in [66] and the 'investigating' one in [67]:

[66] Her burst of temper had left her empty, drained of feeling, and all she wanted now was to crawl away somewhere to lick her wounds in private.

[67] Thus, 'Congress has come to dominate the national politics of federalism, and its members have gained that dominance by crawling inside the details of federal grant programmes and examining the effects of the distribution of federal money', instead of the states deciding it themselves.

Crawl isn't so much polysemous as it is multifaceted. Each facet is merely a direction in which the word can be pulled, a reason that may be highlighted, but the meaning itself remains constant.

The next alleged sense we'll examine is #8, 'of place: be crawling with,' and I will warn the reader now that the final sense (of skin crawling) will have to be discussed before conclusions about this usage can be reached. This 'crawling with' sense differs from the previous usages in that its subcategorisation frame requires a *with* PP, the object of which must be plural (or at least non-singular: ?*The corpse was crawling with Anthropoda* but not **The corpse was crawling with an ant*). So far we have been dealing with syntactically identical realisations of *crawl* and looking for a semantic contrast. Here, an additional variable is thrown in, and for that reason alone a semantic contrast cannot be isolated. However, *crawl*'s monosemy is not threatened if it can be shown that the syntactic difference is the only variation and that semantically the word's meaning as established is still carried through. If *crawl* is monosemic, and this usage therefore not a separate sense, then the PP cannot be considered a required complement. This usage as proposed by the four learner dictionaries consulted by Fillmore and Atkins can be exemplified with the following *BNC* data:

[68] As she walked, it seemed to Jane that the stars looked down, calmly and mockingly, at this speck in the universe, crawling with ants fighting each other.

[69] The area was crawling with caterpillars, upon which vast flocks of birds – including the beautiful straw-necked ibises – descended, and, in their wake, hundreds of hawks of three or four different species hovered,

- attracted by the sudden abundance of prey.
- [70] Half buried in the dirty straw, beside a bone crawling with flies, lay the phrenology book, undisturbed since the Collector's last visit.
- [71] The tub is kept in a warm place and within a few days is crawling with worms.
- [72] His front left paw was broken and crawling with maggots.
- [73] It's crawling with cops.
- [74] Mrs Thatcher's car is armour-plated, the platform party leaves in a tank-like bus, the town crawls with policemen, and all this vigilance costs ?
- [75] No wonder Deptford was crawling with patrol cars.
- [76] Lisbon was crawling with spies, and information changed hands for vast amounts of money.
- [77] It's crawling with pretentious wankers.

In [68] – [72], the object of the *with* PP is things we have already discussed, things well associated with crawling. In [73] it shifts to people, particularly police in [73] – [74] and, metonymically, in [75], then by extension to spies. It's worth noting that the verb of [74] is not progressive, though the wording of the definition, 'be crawling with' (at least if encountered in an actual dictionary rather than Fillmore and Atkins' summary) suggests that it should be. So why the jump from maggots to police officers? The *prima facie* explanation is that they are deemed just as undesirable by the speaker, that they are another form of pests, and that might be a reasonable explanation if we hadn't already mentioned the 'investigating' facet described above, that these police and spies are crawling (even if not physically) over an area because they are investigating, as opposed to the worms and flies who are crawling over their areas because that is how they move. The pretentious wankers, therefore, would group with the worms (the speaker using metaphor to express disapproval) rather than the police. It might be tempting to note this and say we have two senses here since some group together with one instance while others with another, but—ironically—the more divisions we make, the more unified the word is. In other words, a word with two related senses, which we will encounter in the following chapter, may be polysemous; when we get a word with 20, it's time to consider monosemy. The more usages we have, the less discrete and the more

connected they are.

Huddleston and Pullum (2002) group this use of *crawl* with other verbs whose subject slot can be filled with either the theme or locative with no change of meaning, as in *Vermin were crawling over him* and *He was crawling with vermin*. They list 24 such verbs, including *swarm*, *resonate* and *flicker*. I see this as a syntactic property of these words because, with *crawl*, the ants are still crawling, and the image of police and spies is still one of physical, just not necessarily actual, crawling.

We now add to this the final sense, 'of skin etc.: creeping sensation,' illustrated with the following:

[78] His lethal smile made her skin crawl.

[79] She could see by his self-satisfied expression that he intended to make himself a fixture, and somehow, despite her friendship with Elaine, the thought of having to work closely with James on a day-to-day basis made Christina's flesh crawl.

[80] But it was Gerry Conlon's account of being interrogated after the Guildford bombings that made the scalp crawl.

The notion that skin can crawl is an odd one, as this is clearly distinct from the movement of snakes and maggots. Of the total 16 instances of this usage in the *BNC*, two are followed by a *with* PP, presented below and supplemented with a quotation found in the *OED*:

[81] His scalp crawled with tension.

[82] Despite the heat of the sun, her skin was crawling with goosepimples.

[83] All my skin crawled with lyce. [OED]

It is here, particularly in [83] that we see where the meaning of this use comes from, that it is likely (based on synchronic judgements of the diachronic data—the *OED* quote dating from 1576) the same as the previous sense ('crawling with') but which has formed a cluster involving skin as a subject and dropping the *with* PP.

Interestingly, the *OED* quotation is from the 'to be all alive with' sense and not from the 'skin crawling' sense. In choosing the numerous sentences in this chapter, I

have made an effort to show instances in which only one sense of *crawl* was active. The fact is that many uses of the word do not snap to one particular 'sense,' as the remaining sentences attest.

[84] Fifty years ago, British prisoners of war who dared speak their mind were forced to crawl on their bellies to say sorry to the Japanese.

[85] Evening turned into night with considerable speed in the tropics, and by the time Howard's smouldering car crawled back into the university grounds, it was almost fully dark.

In [84], we have both the physical and the grovelling facet, while [85] has both the 'move slowly' facet associated with cars but also the injured one just as the *OED* quotation straddles two alleged sense. Furthermore, are the many instances of 'crawling into/out of bed' examples of the fatigue facet or the physical movement? Instances such as these show the unity of these 'senses' rather than their alleged discreteness. If these particular senses were discrete, then these sentences would be zeugmatic, yet they are perfectly understandable and well-formed.

We have now examined the nine senses which Fillmore and Atkins extracted from the four learner dictionaries, and which they deemed an insufficient number and examine several *BNC* sentences not covered by them. Having demonstrated that, at the very least, there is a theoretical framework for considering the first nine senses to be one unified sense, and having done so in a lengthy discourse, I feel no need to burden the reader further with a discussion of their proposed additions. They can be left with the claim that that none of them represent anything more than contextual variations and none exhibit discrete semantic properties.

Throughout, I have made a few diachronic references (the development of the 'skin crawling' usage and the lexical gap facilitating the 'move slowly' use) despite my previous claim that Ruhl's outlook was 'largely synchronic.' It is not without reason that I qualified it with 'largely.' Ruhl's notion of synchrony and diachrony may deviate from

the accepted understanding of these terms. His linguistic view is not a simple choice between the two. He defines synchrony as relatively fast time and diachrony as relatively slow. Synchrony, as Ruhl interprets its usual understanding, is an idealisation, ignoring not only past changes but present variation, a view Ruhl does not subscribe to any more than he believes in idealised senses. To him, synchrony idealises away any variation. My implementation of diachrony here has been in line with Ruhl's: language users do, after all, have intuitions about how certain words have developed the way they have (i.e., that calling a unit of corn 'an ear' branches off from the 'organ of hearing' usage), and these intuitions colour their understanding of the words as synchronic entities.

Conclusion

If this chapter has proved one thing, it's that monosemy is not an easy thing to represent. The goal of this chapter has been to demonstrate Ruhl's argument and therefore to argue that monosemy accounts for more words than we generally assume it to, but how it should be represented—how, that is, that dictionaries should incorporate Ruhl's theories—has not been presented here, nor is it by Ruhl himself.

But the overall goal of this chapter has been to show that monosemy, hard though it may be to represent, offers a logically sound starting point, that it is better to start with the assumption that a word has one meaning until we've proven it has two or more rather than to assume it has many and start numbering them as we think of them, with no guidelines for when one sense becomes another. Again, it is the very act of defining—of moulding one semantic aspect into a paraphrase—that delimits it, thus propagating the need for further definitions, and it is this recursion that this thesis, by observing the monosemic bias, hopes to avoid.

It can be argued that the multi-numbered senses that dictionaries do present were never meant to be discrete, mutually exclusive chunks of meaning, and that the 'facets' I propose are no different in intent to these senses. Ruhl believes, and I agree, that the notion of multiple meanings is deeply embedded in our understanding of words, both the linguist's understanding and the popular understanding. Some criteria are needed, and not different criteria for each word. We cannot group usages together because they somehow look similar and then decide *post facto* what the senses are. The monosemic bias does not argue against the existence of polysemy—it is, after all, only a *bias*—only that polysemy is too readily assumed. Multiple—and related—meanings that do exist within words is the subject of the following chapter.

Chapter three: Polysemy and types of polysemes

If, as Ruhl asserts, the true, monosemic meaning of a word is unconscious knowledge, then we have a pedagogical problem: how can it be taught? The answer is that it probably can't. From a purely semantic point of view, Ruhl's monosemic bias is a fascinating airing out of unchallenged notions that proposes a significantly different theory of meaning, but it fails to inform a second language pedagogy. If, as he claims, monosemy is a property of words that native speakers do not have direct access to, then there is little point in native speaking teachers learning it so that they convey this arcane knowledge to their students. The monosemic bias is a move from discrete (if arbitrary) points to unteachably vague concepts.

Another problem with Ruhl is that in his impressive explication of monosemy and his efforts to debunk the notion that verbs like *bear*, *hit* and *kick* are polysemous, he routinely fails to demonstrate what he *does* consider polysemous. A careful reading will reveal that he considers *orange* ('fruit' and 'colour') polysemous and *light* ('non-dark' and 'non-heavy') homonymous, but these two examples are mentioned separately and very much in passing, and the difference between them is never explained.

The following occurrences of polysemy therefore do not attempt to be cases of what Ruhl would consider polysemy but rather polysemes whose senses are delimited in ways teachable to L2 learners. Far from being a rejection of the monosemic bias, this thesis is an attempt to make it practical. Ruhl's claim that senses cannot be ascribed arbitrarily on a word-by-word basis retains a nuclear position here. The goal here is not to find as many kinds of polysemic variations as possible but as few; these are presented as top-down categories rather than the various subtypes. These subtypes account for the overly-numerous senses we find in dictionaries, processes rendered unteachable both by their sheer number and by their minute, hair-splitting differences. Hence, the section

below on lexical metaphor does not attempt to inventory all the various kinds of metaphor we could employ by examining their tenor and vehicle, to use terms from the classical literature on the subject. Such accounts have been avoided not just because the goal here is to provide an overview but also because the relevance of such details to the learner is questionable. For further accounts of metaphor, see Lakoff and Johnson (1980) Kövecses (2002), and Croft and Cruse (2004).

It is now time that we attempt a definition of *polysemy*. I engage here in the trite but necessary practice of breaking the word into its morphological structure not, I stress, to arrive at the definition, as the meaning of any word can drift from its root and affixes over time, but to highlight the direction the definition will take. Specifically, it is the root, *-sem-*, derived from the Greek *sēma* 'sign' and *sēmainein* 'signify,' that I want to draw attention to, and to the fact that the same root is found in *semantic*, *semaphore*, *semiology* and other words. I do this to propose that *polysemy* be defined as a semantic entity and not by indirect recourse to non-semantic traits, the reasons for which, along with several of these traits, will be discussed in chapter four. This is not a conservative effort to enforce the word's original root; rather, it is well within the framework established so far: our observance of the monosemic bias has been to factor out the non-semantic. Polysemy, then, must be a semantic entity.

The remainder of this thesis, then, will consider a word polysemous if it has senses that are discrete, and if synchronic intuitions can account for a reasonable theory in which one sense generated the other. Both of these factors are developed below. Discreteness, that the senses are very clearly demarcated, assures that we are dealing with semantic entities and not contextual variations that are the domain of pragmatics. That a path can be seen for generation is to remove most cases of homonymy as well as instances of vague relatedness. This may lead to diachronically 'incorrect' judgements,

but this is fine. Such theories have at least as legitimate a claim to 'linguistic reality' as do etymologies as they are fashioned by the users of a language rather than the specialists. If we can see a connection between the ear of corn and the ear with which we hear, we can teach it, and if we are not aware of the 'lost sense' bridging the 'footstool' and 'faeces' senses of *stool*, then teachers should not be expected to learn it (and similar cases for many other words) nor should students necessarily be burdened with such knowledge. (I do, however, have no problem with teachers using such senses to explain and perhaps provide a mnemonic when the knowledge is available. I do so myself.)

Within this framework, this chapter will reveal that there are only two types of semantically-defined polysemy. These will be thoroughly discussed with diagnostic tests to help identify them. Although argued at length above that pragmatics merely creates a false illusion of polysemy, some of these pragmatic operations are sufficiently discrete that they are demonstrable and teachable, and these will be discussed as well. These pragmatic effects are not considered pure polysemy here but are discussed because of their relevance to the L2 learner who lacks the pragmatic knowledge to see them as unified senses. The goal of this chapter, then, is re-evaluate polysemy as a strictly semantic entity and re-distribute it among the appropriate linguistic spheres, semantics being just one part of the picture.

3.1 Lexical metaphor

The first type of polysemy we will examine is the kind that relies heavily on metaphor and has a clear-cut literal/metaphoric divide. The order in which the various types of polysemy are presented is determined by the application of the diagnostic tests employed to reveal them, which need to be executed in this order.

An example of lexical metaphor, one I will use time and again throughout this thesis, is *flavour* with its literal meaning of that which is perceived via the sense of taste (aided by smell) and a metaphoric sense referring to vague qualities perceived by other senses, usually orally or aurally, as in a painting or melody having a Spanish flavour. A lexical metaphor must be a single lexical unit—in other words, generally one word. Saying an explanation 'holds water' certainly employs metaphor but is not mononymic and therefore not a matter of polysemy, which is why I have chosen to call the first type 'lexical metaphors' rather than just 'metaphors.' Lexical metaphors are words that have both a literal and a metaphoric meaning, both of which have synchronic currency in the language. This means that, on one hand, *deflower* whose literal meaning is, at best, very rare would not qualify and neither, on the other hand, would a nonce metaphoric usage. A further distinction must be drawn between metaphoric meanings and 'extended meanings.' As the previous chapter proposed, extending a meaning does not entail a new, detached sense; metaphor does.

Lexical metaphors can usually be unveiled by the word *literally*. If this seems simple, it isn't. Care must be taken that *literally* is bound to the word in question, that its scope is restricted to that one word, and that the proper meaning of *literally* (itself arguably polysemous) is activated. For example, in *She sells seashells by the seashore...literally*, the word *literally* does not select one word. It is not clear if it's intended to mark the literal meaning of *seashore*, *seashells*, *sells*, or the sentence as a whole. An easy way to restrict the scope of *literally* is to add it just before the word in question, although this approach is frequently ineffective when the word isn't a verb: *She literally sells seashells by the seashore* is fine if we're testing *sells*, but it does not work well if we wished to test one of the nouns: **She sells seashells by the literally seashore*. The best technique is to reiterate the word we seek to test, either right away or

at the end of the sentence, adding *literally* to the reiteration, thus: *She sells seashells—literally seashells—by the seashore* or *She sells seashells by the seashore, literally seashells*. This technique is a catch-all and can be used with any part-of-speech, including verbs. (Incidentally, if the meaning of these sentences sounds odd with *literally* added, it's because lexical metaphor is not present in any of these words. This is part of the test as we shall see.)

It is also important to ensure that *literally* is being used with the desired meaning. Frequently it is used not to highlight a literal meaning but as an intensifier. I once heard a friend say, to express his shock, 'I died. I literally died.' Obviously, this is not the usage we wish to apply in our test. This does not influence how tests are constructed; the task of selecting the right meaning comes when we access our intuitions.

Test #1: Lexical metaphor

Action: Add the word *literally* to a sentence, ensuring that it is bound to exactly one word and that it is not acting as an intensifier.

Results:

- A. Uninterpretability or a bizarre change of meaning: lexical metaphor is present.
- B. No change of meaning and the word *literally* is distracting: either no lexical metaphor is present or the literal meaning is being employed. Try the same word in other sentences.
- C. Uncertain change of meaning: metaphor may be present elsewhere in the sentence.
- D. Other meanings activated but not selected: not lexical metaphor but probably 'vicariant polysemy,' the next type discussed, or even homonymy.

Examples and discussion:

Result A is the kind this test seeks to illuminate. It is, in fact, quite rare in its purist form. Consider the following sentences testing *flavour*:

- [1] Christchurch has a British flavour.
- [2] This cake has a chocolate flavour.
- [1a] Christchurch has a British flavour, literally.
- [2a] This cake has a chocolate flavour, literally.

In this case, I've avoided the catch-all method of reiterating the target word in favour of succinct and more natural sound sentences, but the scope of *literally* is bound just the

same. The meaning of [1] is quite normal, but in [1a] it is drastically changed. I imagine someone tasting the ground and perhaps buildings of Christchurch. It is this kind of bizarre meaning that demonstrates the existence of lexical metaphor. Examples [2] and [2a] illustrate the literal sense of this polyseme for the sake of contrast.

Result B, no change of meaning, can be seen (in addition to [2a] and the seashells sentences) with:

[3] This is a happy song, literally.

Whether *literally* is bound to *happy* or *song* doesn't really matter because neither is a lexical metaphor.

Result C is an uncertain change of meaning. It again shows why I have been careful to call this type 'lexical metaphor' and not just 'metaphor,' and also takes us to one of the senses of *crawl* that Fillmore and Atkins (2000) proposed which we skipped over in chapter two.

[4] The clouds literally crawled across the sky.

It's not entirely clear if *literally* is changing the meaning of *crawl* (which we have already deemed monosemous) or not even though we know clouds cannot literally crawl. Does the literal meaning of *crawl* mean to move on hands and knees like a baby? or does it mean to move with the torso close to the ground, like an ant? or does it mean to move slowly? The problem of interpreting [4] is not in the verb at all. What has happened is that we have personified *clouds*, and once we've entered into this metaphor (clouds = people), then we may freely attribute any human or animal characteristic we see fit, including not just crawling but flying, standing still, and crying. To make *crawl* carry the entire burden of the metaphor is to misattribute it. Lexical metaphor is a metaphor restricted to one single lexeme, as with *flavour* in [1] and [2], which is not the case with the crawling clouds.

Another possibility is that the word is part of a larger construction, such as the *flavour of the month/day/moment*, phrases. Here, the metaphor stems not just from *flavour* but from the larger constituent. It is not a metaphoric 'flavour' of the month; it is a metaphoric 'flavour of the month.'

An example of result D, when other meanings present themselves but none of them are actually selected, is:

[5] This soup is hot, literally.

Two senses of *hot* rise to the surface, that the soup is either piping hot or spicy, but *literally* does not select either of these. One is not more literal than other nor is the difference between the two attributable to metaphor. It is either vicariant polysemy, discussed in 3.2, or else homonymy.

Before moving on to the next section, an alternate test will be pointed out. Sometimes when the resulting sentence is awkward and yields uncertain results, there is a cross-check at our disposal, which is to replace *literally* with *metaphorically speaking*. The truth value of *Christchurch has a British flavour, metaphorically speaking* reinforces it as a lexical metaphor, as does the redundancy of the final two words. But *This is a happy song, metaphorically speaking* is just as odd as it was with *literally*, further suggesting that lexical metaphor is not present. This is useful in events where the sentence with *literally* ends up creating a new metaphor; for example forcing a literal reading of *rich* in *This cake is awfully rich (literally rich)* would result in a new metaphor (food = people, which is not the metaphor that my mind normally construes for this use of *rich*). The 'metaphorically speaking' cross-check helps us sort through the confusion.

3.1.1 Traits of lexical metaphor

One trait of our definition of metaphor is the mutual exclusiveness of each sense. Hence we can say they are discrete despite the metaphoric being dependent on the literal. Generally, a lexical metaphor cannot be used to evoke both senses simultaneously. The literal use of *flavour* covers the culinary domain, and the metaphoric covers everything but the culinary. The only time they can overlap is in humorous or 'clever' usages such as puns, as seen in 'Our menu has a local flavour.' (I would argue this is still the metaphoric sense, unless *flavour* specifically means 'flavouring' or 'spice,' but I acknowledge there is still some punning going on.) Outside the cartoon world, a neck tie can only be *loud* in one sense. Contrast this with *hot*, which is polysemous but not a lexical metaphor, in 'My soup is hot.' We mean either it is 'spicy' *hot* or 'temperature' *hot* but this sentence cannot mean both, even though the soup may well be both. It is possible to activate both senses simultaneously, and the means for doing so form the diagnostic test for the second type of polysemy, discussed below.

We can also see how the literal sense might have generated the metaphoric. There is a lexical gap in which no dedicated word refers to a 'vague quality,' so certain traits—but not all—of an existing word, *flavour*, were imported along with the word form.

Another trait of lexical metaphor is that the two senses of lexical metaphor polysemes frequently entail a change of subcategorisation. The examples of *flavour* above fit the same syntactic frame (A *has a B flavour*), and there are other instances where the patterns are identical (A *has a B flavour*, A *gives B a C flavour*), but there are syntactic patterns that are unique to each. For example, the literal use can be used 'bare' as in [6], but the metaphoric cannot be used in this manner. (A few rare exceptions are discussed in chapter four, which more closely examines traits of lexical metaphor.)

[6] In addition hops provide bitterness as well as flavour. (BNC)

This provides a problem. Since literal and metaphoric senses occur in different environments, both cannot always fit into the same test pattern. Sometimes a different subcategorisation is required to override the literal meaning:

[7] He peppered his steak.

[8] *He peppered his speech.

[9] He peppered his speech with snide comments.

But note that it is not pleonastic to say:

[10] He peppered his steak with a solid gold pepper shaker/pepper pot.

because the *with* PP in [10] is an adjunct that adds more information while it is a required complement in [9], as demonstrated by the ungrammaticality of [8].

A third trait regards collocations. That collocations will differ for each sense is perhaps obvious since we've already seen that the literal and metaphoric senses occur in different semantic domains, but it's worth noting that the literal sense, being bound to a specific domain, will frequently have strong collocates while the metaphoric, free of this constraint, has few or none. According to *BNC* data, the literal use of *flavour* collocates with *full*, *strong*, *distinctive*, *slightly* and *texture*, among many others, but very few content words collocate only to the metaphoric sense, of which *international* is one. A complete list of both is presented in chapter four. Likewise, the metaphoric verb *pepper* has no strong content-word collocation (based on frequency); 'four-letter' is the only lexical item that occurs more than once, and only two instances of it can be found. (This is ignoring instances like *peppered catfish*, which is the name of a species and not a dish made with pepper.)

The collocations for metaphoric senses are not without patterns, however, but the human observer, and not the computer, is required to determine them. For example, the words *Scottish*, *Grecian*, *Brazilian*, *British* and *German* occur only once or twice

each with *flavour* and are therefore not strong enough to be collocates, but we can see the pattern that the computer misses, that adjectives formed from the names of countries (or other socially defined groups like *Californian*) do occur with the metaphoric sense of *flavour*.

Also, some collocates of the literal sense can be found in the metaphoric sense as well, as with *distinctive* here:

[11] but still one might hope that the writer would succeed in suggesting the highly distinctive flavour of his talk, his inimitable way of retailing a diverting anecdote leisurely and with a modicum of circumlocution, from which in due time the point of the story is sure to emerge.

[12] No sooner had this year's tournament finished, than work began on the £10m octagonal shaped 14,000 seater stadium, which will have giant palm trees growing through the stairways to help maintain the distinctive flavour of South Florida. (BNC)

This also happens with *rich* and *bitter-sweet* and could potentially happen with many other words. What this shows is an awareness of the metaphor by users, who then extend it. The lemma *give*, on the other hand, acts more as a function word in this case and is therefore considered part of the subcategorisation, but in both cases the metaphoric extension is importing something from the literal base.

3.1.2 Special cases of lexical metaphor

A few instances can be found that resist the 'literally' test. As we've seen, metaphoric senses have a well-defined dividing line between their literal senses, as *flavour* has a culinary/non-culinary border. The subtype discussed here delineates the metaphor and the literal along the lines of the concreteness and abstractness of the arguments they take. Take, for example, the word *regurgitate*. Essentially meaning 'to vomit,' the word has taken on a metaphoric reading, that students can regurgitate information their teacher has just given them means they have taken in the information but it has not been fully digested (another word reinforcing the same conceptual

metaphor). However, the literal sense is restricted to concrete direct objects ('pellets' is a common one in the *BNC*) while the metaphoric sense covers only abstract nouns ('information' or 'theories').

Because the two uses of *regurgitate* are so neatly divided by their arguments, the 'literally' test fails to be applicable: we cannot compose a successful sentence frame for our test. One cannot regurgitate information literally, nor pellets metaphorically (unless the pellets themselves metaphorical, which is a different case). This problem was circumvented above by talking about the flavour of Christchurch, which has both concrete and abstract aspects, and by avoiding instances like the 'flavour of the speech' which cannot be construed literally. However, *regurgitate* leaves us no option. For this subtype, no test is offered, only a word of caution: metaphors that hinge on the abstract/concrete distinction of the word's arguments will fall through the cracks of the 'literally' test. These senses will, however, still be considered metaphors because a concept from one domain—bodily functions in the case of *regurgitate*—is applied to another. Similarly, we can *stretch* a piece of rubber and we can *stretch* theories, we can *cultivate* crops and we can *cultivate* friendships, and we can *orchestrate* symphonies and we can *orchestrate* campaigns. (The word *symphony* is considered a concrete noun here because orchestrating one canonically involves writing down the physical notes and its aural realisation is still a physical event.) However, words that take either concrete or abstract arguments are not necessarily metaphoric, as is the case with *pinpoint*, except when we're talking about literally sticking pins in a map, but *pinpointing* a location and *pinpointing* a problem are not metaphorically distinct. This word is discussed more below.

The following sentences illustrate another special case.

[13] He carted his parents around when they came to visit him.

[13a] He literally carted his parents around when they came to visit him.

It could be argued that [13a] (when read to indicate he put his parents in some kind of cart) is not sufficiently ludicrous to signify a change of meaning, but the degree of bizarreness is not a testable quality. However, the low level of bizarreness is a red flag that always needs investigating. In this case, we can delve deeper and theorise that the metaphor refers to the noun cart and therefore the verbal usage does not, strictly speaking, contain a metaphor, other than that which it imported from the noun.

3.2 Vicariant polysemy

This second type of polysemy is the afore-mentioned variety of which *hot* is an example. Readers may have already begun objecting to 'spicy' *hot* not being considered a metaphoric extension of 'temperature' *hot*. In fact, I've no doubt that traditional rhetoric could explain it as a metaphor, but that it fails the 'literally' test reveals it as a different kind of polyseme. Whatever its etymology, the 'spicy' sense is not as parasitic upon the 'temperature' sense as the metaphoric reading of *flavour* is upon its literal counterpart. The 'spicy' sense is more autonomous, and the two senses are more balanced.

The notion of vicariance is borrowed from biology. Vicariant species are those that have developed as separate entities but which are considered to have developed from a common ancestor. Applying this to our semantic scenario, vicariant polysemes are those that are clearly related but which have developed as separate entities (and not explainable by metaphor).

We've already noted the lack of zeugma in *hot*. Food can be simultaneously hot in more than one way, even though the word itself will only denote one sense. It is thus ambiguous. Although language use in real life (as opposed to semantic texts) is seldom ambiguous, this is one of the few examples that frequently is. Many of us have had the

experience of dining at, say, an Indian or Mexican restaurant, and when we take the first bite of our newly-arrived food, our dinner mate asks if it's hot, and we're not really sure which sense of *hot* they are using. It is this ambiguity that allows us to test these instances.

Our test is to add the phrase 'and in more ways than one' to the sentence frame. The same care we exercised with 'literally' needs to be applied here as well to ensure the scope of this phrase is bound to the word we seek to test. Reiterating the word with the phrase added will usually work.

Test #2: Vicariant polysemy

Action: After performing the 'literally' test, add 'and in more ways than one' to the original sentence containing the test word and ensure its scope is bound to the candidate polyseme.

Results:

- A. Two or more full meanings are activated: vicariant polysemy.
- B. Nonsense because only one meaning is present; the added phrase is distracting: monoseme.
- C. One meaning is pragmatically suppressed.
- D. Two or more readings may be possible but the distinction raised is unimportant: facets (Cruse 2000).
- E. Multiple but compatible interpretations possible: microsenses (Cruse 2000).
- F. Two or more readings possible but more information is needed to understand the sentence—embedding in full discourse would probably make it clear: underspecification (Copestake 1995).
- G. Multiple but incompatible meanings are present; the word form is homonymic.

Examples and discussion:

This test has more results than the previous one, the distinctions between which are often quite small, so we need to be careful. First, though, we examine the results that reveal vicariant polysemy.

[14] I found the soup hot, which it was in more ways than one.

Sentence 14 clearly activates both senses of *hot*, and both senses are compatible. As already noted, soup can be both spicy hot and piping hot and while *hot* would usually mean one or the other, this sentence frame shows that the two are not mutually

exclusive as is the case with lexical metaphor. Note that this test activates a second sense not intended by the original sentence.

Some other examples that demonstrate vicariant polysemy follow.

[15] She's acting funny, and in more ways than one.

[16] Yesterday, I had a dream, and in more ways than one.

[17] For some time now, he's had the odd fantasy about his assistant—*odd* in more ways than one.

[18] The doctor joked that his wife had a good heart, and in more ways than one.

[19] Her heart is weak, and I mean *heart* in more ways than one.

The words *funny*, *dream*, *odd* and *heart* each have meanings that are on somewhat equal footing. There is *funny* 'ha ha' and there is *funny* 'crazy.' There are the dreams we have when we sleep and those we have for our future. *Odd* can mean 'weird' or it could mean 'occasional' (not to mention another meaning, that relating to numeric parity, that is suppressed by the context here), and *heart* can refer to the organ that pumps blood or to the symbol of love (not to mention 'centre,' etc.). The word *heart* is tested twice because [18] could also pass the 'literally' test. It is best to begin with the 'literally' test but also to employ both tests. (So far we've been dealing with the dangerously simplistic notion that polysemes have exactly two meanings, when in fact they could have three or more, each a different kind of polysemy.)

A special case needs mentioning.

[20] She listens primarily to romantic music, *romantic* in more ways than one.

The two meanings of 'romantic' here include Romantic music, or music of the Romantic era as opposed to the Baroque, Classical or Modern eras, and romantic music in the sense of Jackie Gleason's *Music for Lovers* or the latest pop ballad. This raises two points. First, for many, the word *romantic* is, strictly speaking, not polysemous because its written form is different, one being capitalised. However, this distinction is not rigidly adhered to, and moreover, it is certainly not a different form in the same way that *ground* (as in 'touch the ground') and *ground* (as in 'ground beef') is. We'll allow some

leniency here. The second point that is raised is the sloppiness of the test frame we composed. Saying that someone listens to one kind of music in more ways than one borders on the paradoxical. Rather:

[21] She listens to romantic music, *romantic* in more ways than one.

This kind of care is a constant issue.

A final example of this kind of polysemy is given here:

[22] She ate the pepper, and I mean *pepper* in more ways than one.

While the awkwardness of this sentence is acknowledged, it nonetheless highlights the lexemes of *pepper* the vegetable and *pepper* the condiment. ('She ate both kinds of pepper' sounds less awkward, but this construction is unreliable as a polysemy test as it could mean she ate a jalapeño and a chilli, or some black pepper and some cayenne pepper, while 'in more ways than one' implies more discrete differences.) The awkwardness stems largely from the two uses of *pepper* being different syntactic entities—one is a countable noun and the other non-countable. Allan (1980) points out that most nouns can be either count or non-count

The condiment use fits neatly into

Instances such as these are often hard to write convincing test frames for because the different syntactic qualities of each sense restrict the form from operating zeugmatically, which is what the test frame tries to accomplish. I would argue that these are not actual polysemes for this very reason, that they are different parts-of-speech (both nouns, but different kinds of nouns), but of course, the learner of English as a second language may lack knowledge of this distinction and see *pepper* as polysemous.

Moving on to result B, monosemy, we can use the same sentence as in the previous test.

[23] This is a happy song, and in more ways than one.

Again, no matter which word we chose to attach the phrase to, there is no other meaning evoked. Every word here is a monoseme.

Result C regards pragmatically suppressed readings.

[24] I wrote a letter this morning, and in more ways than one.

This is technically ambiguous but one of the readings, that I spent the morning writing, say, the letter *t*, is suppressed because, I would hope, my interlocutors do not find me so boring as to engage in such an activity. It's best to try more sentence frames, although there may not always be natural sounding ones. 'I just wrote a letter' is slightly preferable, but one reading still makes for a pretty boring achievement.

The remaining results will be dealt with fairly quickly here for two reasons: first because they are not considered polysemy but unified senses, and second because they are developed elsewhere by other authors. Result D types exemplifies what Cruse (Croft and Cruse, 2004) calls 'facets.'

[25] Dr Johnson plans to buy a new knife—a new knife in more ways than one.

Knife seems to have only one meaning, but there are a variety of knives used for different purposes. Dr Johnson could require both a kitchen knife and a surgical knife. This is considered monosemic and is discussed here only for completeness as the test can produce this kind of result.

Likewise, result E, Cruse's notion of microsenses (Croft and Cruse, 2001), can be revealed as well:

[26] This is a good book, and in more ways than one.

The two aspects that are raised here are *book* as a product of literature (the story, prose, poetry, etc.) and *book* as a product of publishing (the paper quality, the binding, the cover, etc.). This is considered a single sense even though both aspects can be

distinguished and selected separately; unless the new e-books provide an exception, the two aspects are married and generally cannot be divorced from each other. Again: a single sense in which the test produces results that require discussion here. Recalling our L2 learners, they are hardly likely to be stumped by *This is a good book*, no matter which facet is highlighted. The test presented here should not be considered a means of distinguishing between facets and microsenses.

Next is result F, this time a kind of word discussed by Ann Copestake (1995) regarding underspecification.

[27] He plans to buy some new keyboards, and in more ways than one. (or: He plans to buy more than one kind of keyboard.)

This could mean he plans to buy a computer keyboard and a musical keyboard. That it's not clear which of these two disparate types is intended by the speaker is not evidence of polysemy but the result of keyboard being underspecified. Likewise, *reel* (reel-to-reel tapes, fishing reel, etc.) and *card* (playing ~, business ~, credit ~, etc.) are underspecified without the attributive modifiers. These are instances in which the abstract 'underlying meaning' (Nation 1990) is clearly the real meaning. Certain readings can also be pragmatically suppressed here: When someone says 'I gave him my card,' it generally does not mean the ace of spades, although certain contexts would allow that reading.

Finally, there is result G, which determines that the word is a homonym of some sort, either a pure or a cognitive homonym. The distinction between these two is discussed below. An example of this is the previously discussed case of *The ship made its way through the sound*. Adding *and in more ways than one* would indeed invoke two different meanings, meanings that have no clear relationship to each other and which can only be simultaneously present under the guise of wordplay. This is a clear indication of homonymy. As chapter four will explore, such contrasting meanings will

usually avoid each other's contexts, so test sentences will often be difficult to compose; try, for example, to compose a sentence that is ambiguous for the two homonymic meanings of *bridge* without being unhelpfully vague—even *I like bridge* or *It's a bridge* clearly selects exactly one meaning due to the contrast in countability between the two noun phrases. The difficulty of composing a suitable test frame attests to the semantic discreteness of the two identical word forms.

3.3 Pragmatics and word meaning

Although I've argued at length that pragmatics alone fails to account for polysemy but rather for contextual variations, the illusion of polysemy is strong enough that these 'senses' are teachable. Unlike the above two types of pure polysemy, these pseudo-polysemes do not have discrete sense boundaries. The noun *seed*, for example, is either a literal sense or a metaphoric sense, and *modern* either means 'contemporary' or else it refers to a movement or era in art history (if you'll pardon this morphological atrocity, *pre-post-modern*), but with pseudo-polysemes, the clear-cut distinctions are lost. Here, senses may blend into each other with no clear boundary or, a more preferable way to view it, there is but the one sense and a variety of contexts.

The first type of pseudo-polysemy is context-dependent polysemy. Of course, all polysemes—and all words—depend on their context for meaning, but here the effects are especially robust. The word *foot*, for example, cannot mean 'foot of the mountain' unless either *of the mountain* is linguistically present, or in anaphoric proximity, or else the referent—an actual mountain—is physically present either with the speaker or listener or both. The sentence 'It won't be long until we reach the foot' is comprehensible (with the 'foot of the mountain' reading) only when spoken by someone either approaching or descending a mountain. Of course, another meaning of *foot* may have been intended, but that is exactly the point: the mountain must be linguistically or

physically present to convey the intended meaning, otherwise the Gricean maxim of cooperation is flouted and another meaning is evoked. Other instances of this type (very frequently body parts) include *head of the family/household*, *leg of the journey*, *bowels of the earth*, *butt of one's jokes*⁵, etc. Abstract nouns such as *journey* cannot, of course, be physically present but are still present in their own way when they are included in the phrase. You cannot use *leg* alone in this sense unless you were already talking about a journey or actually on one.

Another pseudo-polyseme is the 'expanded context lexeme.' The adjective *lay* is an example of this. Originally, and still, used to mark someone or something as separate from the clergy (as in 'lay brothers,' 'lay Catholics,' etc.) its use has been expanded to include any non-speciality area, for example 'lay psychological theory,' 'lay press' and 'lay judges.' There are also many instances in which context is needed to determine which use is intended; by themselves, it is not clear if the phrases 'lay administration,' 'lay students' and 'lay intellectuals' are meant as non-religious or the more general non-speciality. It is this lack of clear boundaries that strongly suggests they are not separate lexemes. Furthermore, words with allegedly discrete meanings that hinge upon connotation, such as *academic* or *discriminating*, are also expanded context lexemes.

If contexts can be expanded, then so, too, can they be narrowed or focused. Focused context lexemes are words which 'pop up' in different but not directly related domains. To illustrate this, we return to Nation's concept of 'underlying meaning.' Imagine, for the sake of illustration, that the underlying meaning is something that exists underground. Now imagine some gopher holes that lead from this underground entity to the surface. Let's take the word *denomination*. The main meaning of the word is below ground, and there are two gopher holes here, one leading to the religious use

⁵ This use of *butt* stems homonymically from archery, but language users for whom *butt* has an anatomical meaning will likely interpret this phrase accordingly.

(*the Anglican denomination*) and another to the monetary use (*five dollar denomination*). These meanings are connected underground, but up on the surface they are very distinct; the religious usage does not lead to or generate the currency usage. There is, of course a more general meaning, as in 'Thus it was that in March 1983, IBM launched the IBM XT, a denomination that still stands today' (*BNC*). This use is tuned to the underlying meaning and not to either of the gopher holes. (According to the *BNC*, the combined religious and monetary uses account for 98% of the instances of the token.) Another example of this is *solution* with its mathematics and chemistry-related gopher holes. The paradigm can be used to explain underspecification as detailed above with *card* and *reel*.

This contrasts, however, with instances like *compose*, which can take as its object such words as *symphony*, *sonata*, *poem* and *essay*. Although there is a small leap from the first two music-related words to the second two language-related ones, they are not as distinct as the religion/currency divide of *denomination*. This is true in spite of *compose* defaulting to music (as in 'He composes for a living.' and 'He is a composer.'). However, gopher holing may explain how these usages differ from 'to compose oneself/one's face,' etc.

When we begin to consider just how many words are polysemous, we start to see polysemy everywhere, including places where it doesn't really exist. A good example of this is *liquidate*. No doubt there is metaphor present. We liquidate assets, stocks, etc., and we can even liquidate problems and such things as feudalism. However, nothing we liquidate actually becomes a liquid; we don't liquidate ice to make water, or fruit to make jelly (these are melted or liquefied). But it's not a polyseme because there is only one sense present, albeit a metaphoric one. The word is formed by adding *-ate* to a theoretical *liquid-*, a base that doesn't actually exist in the language with this particular

sense. This is not the case with *passionate*, *affectionate* or *pollinate* (despite a spelling change in the base *pollen*). This is similar to referring to a movie as 'cheesy' but probably not as 'cheese,' although this is a full polyseme as food can also be described as 'cheesy.'

Another variety of 'pragmatic polysemy' involves forms clipped from larger lexical items. How, after all, do we know that the speaker of *I like rock* is talking about a kind of music, a kind of candy, or geological formations? Of course, in naturally-occurring contexts, this sentence could almost never be ambiguous for these meanings for a variety of reasons. For ambiguity to be present here, there would have to be a rather peculiar and very sudden topic shift, and stones are not something that people frequently profess their admiration of. Rock, in the musical sense, is a clipped form of rock 'n' roll. Sometimes words are clipped to shorter forms that also happen to be already established words, albeit it generally unrelated meanings. Other examples of this include:

[28] I need some gas. (North American dialects)

[29] He wants to be an anchor.

[30] She is their biggest fan.

[31] He dropped the case.

Most of the time, though, these words would never be confused with their twins. It's hard to make a sentence in which rock is ambiguous for the music and for 'stone,' largely because of the semantic gulf between the two meanings and that the musical sense is always uncountable. Likewise, *anchor* and *fan* refer to people in one sense and inanimate objects in another and are therefore also unlikely to cause confusion. Although 'He dropped the case.' could be ambiguous (with *case* referring to suitcase or some other kind of casing, or to a lawsuit), it's not very likely to be so, to native speakers at least, in context. As we'll see later, the 'luggage' meaning of *case* avoids the primings (collocations) of the other meaning.

Instances such as these are very obvious to native speakers. We know we say *anchor* to avoid pinning a gender to the term, which many of us learned originally as *anchorman*. But students learning the language today will lack this insight. To them, *anchor* in the news sense would simply be another meaning for the word. And that, in fact, is assuming they learn the meanings in order of the word's diachronic development, which I would think unlikely in this case; I suspect that most learners would encounter the journalistic sense long before the nautical one, which many may never chance upon. This reverse sequence would, again I suspect, obscure the metaphorical relationship between the two senses, at least until both senses are fully internalised.

Frequently, words substitute for others, as in:

[32] A small company will probably focus its attention on each artist's project more than a major label (= recording company).

However, it is not sufficient to say that *label* is (semantically) polysemous, containing the meaning of 'recording company' when the process is easily explained by a pragmatic operation, namely metonymy. Metonymy is somewhat similar to metaphor, except that where metaphor involves words from a different semantic domain substituting for one from another, a metonym is sourced from the same domain; that is, one aspect of the a word's referent can substitute for the word itself, as in *mill* to refer to a steel-producing factory. We could—and dictionaries do—attribute this to semantics if we wanted, but this involves expanding the number of senses of a great many words, which we have been arguing against at length. As language teachers, surely it would be much easier to teach students the few processes of substitutability, such as metonymy, meronymy, hypernymy, hyperonymy, etc., rather than burden a student's vocabulary acquisition with all the various meanings of all these words.

This raises a point that needs addressing. If operations such as metonymy and meronymy are pragmatic, then why is metaphor accorded the status of a semantic

procedure above? In fact, lexical metaphor probably could be argued to be entirely pragmatic. Pragmatics is never out of the picture; the ability to use a sense and know your listener or reader will understand you is a pragmatic issue no matter what is happening semantically. But here we are attributing semantics only to those uses in which the metaphoric sense has (to use a lexical metaphor) some established currency in the language, as in the case of *plant* to refer to a factory. Nonce metaphors would certainly be pragmatic, whether lexical (where the scope of the metaphor is restricted to a single lexeme) or extended (as in the literary device which is beyond the scope of this paper). Established lexical metaphors differ in their familiarity, allowing the speaker or writer to use them without necessarily including the linguistic scaffolding to ensure the metaphor is conveyed—a concept explored in the following chapter.

There are instances where substitutability may well involve semantics (though such cases will always involve pragmatics as well). There can always be cases where one sense of word A is synonymous with one sense of word B, as is probably the case where *volume* is interchangeable with *amount*, whether in the 'volume of liquid' or 'volume of sales' instances.

The various pragmatic procedures that we employ in language use would probably be impossible to catalogue; Ruhl (1989:36) writes: 'Listing pragmatic rules may be an infinite task: all knowledge of the world can be included. In dealing with language, we are used to expecting only a few possibilities; but pragmatic rules can be much more various, since our full knowledge is much more various.' For the same reason, a few examples of pragmatics, as contrasting to semantics, are presented here. Sometimes we need reminding of the extent of the role pragmatics plays. We all know what a book is, but every book is different; even different copies of the same publication are discrete referents. Yet the word *book* covers all these instances very neatly and we

generally don't get bogged down trying to determine just what the word means. Such logomachy is reserved, I'm afraid, for theses such as mine. Yet with some words we do. Levenston (1990) makes the assumption that *pinpoint* is polysemous because it takes both concrete and abstract objects (pinpoint a location, pinpoint a problem), but I consider this a pragmatic distinction rather than a semantic one; rather than showing the different senses of *pinpoint*, it actually does just the opposite and demonstrates just how variable the contexts are that this monoseme can be present in. (Contrast this with the earlier discussion of *regurgitate*, which was deemed a polyseme for having abstract and concrete arguments.)

3.4 Syntax and word meaning

Here I can be brief because the topic lends itself to brevity and would not necessarily benefit from the same full treatment accorded to semantics and pragmatics. My wish here is only to demonstrate that what may appear to be polysemy may in fact be an entirely syntactic operation, the seeming semantic contrast being a by-product. The words I address here are those such as *expect*, *touch*, *promise*, *reveal* and *tell* but when used in the following examples:

[33] She declined the job offer because she was expecting.

[34] It was a very touching movie.

[35] He is a promising young actor.

[36] She wore a revealing dress.

[37] This is perhaps the most telling, if undiscussed, contrast between homonymy and polysemy.

Note that the apparent polysemy is present only in the *-ing* form. *Expecting* in [33] can be paraphrased as 'pregnant' but not if conjugated differently; any other form requires a direct object to convey pregnancy. This is true of the other words as well: the movie is one that touches the speaker's heart, the actor promises to do well, *contrast* (my own

sentence from above) tells us something important, and I'll leave to the reader's imagination what the dress reveals. While these words may appear to be polysemes, the difference in their uses is explainable by syntax (and, as always, pragmatics—the reader knows what has been deleted and is capable of supplying it). These are all verbs in which, when being converted to adjectives, a right-position argument (usually the direct object) has been deleted but pragmatically still present. Once syntax is factored in, semantic change is no longer isolable.

Conclusion

Although a brief list, the semantic portion of our taxonomy can probably be considered comprehensive if two points are remembered. First, the list is guided by Ruhl's monosemic bias and therefore attempts to find as few types of polysemy as possible rather than as many. What some people see as two senses may be claimed to be contextual variation of a single sense here and therefore not a threat to this list's exhaustiveness. For example some researchers, particularly in the generative domain, see *chicken* as being polysemous for the animal and its meat, with proof being that if we have two words *cow* and *beef* (or *pig*: *pork*, *deer*: *venison*, etc.) but not for *chicken* (or *turkey*, *crab*, etc.), then *chicken* must be polysemous by way of analogy (*cow*→*beef*; therefore *chicken*¹→*chicken*²). However, the validity of applying a pattern found in one instance to another fails to persuade me. A person eating the meat of a chicken is still eating the bird; the fact that it's been killed, cut up and cooked doesn't change that. The split of *cow* and *beef* and other similar cases (*pork*, *venison*) may be the oddity, not the non-partitioned *chicken*. The second point that needs to be remembered regarding the list's comprehensiveness is that we're only examining the kinds of polysemy relevant to second language learners. A learner's familiarity with *chicken* as a bird but not as a meat

(if that's even possible) would certainly not impede their understanding of *She likes chicken soup*. In other words, any attempt to argue that these are two different senses would hopefully be accompanied by why the distinction is important. As stated earlier, sense enumeration is often done willy-nilly with no clear motivation. It's a bit like asking how many word senses can dance on the head of a needle and then proceeding to expound them all.

The discussion of pragmatic polysemy, however, does not pretend to be exhaustive. As noted above, pragmatics involves world knowledge which may be inexhaustible. Words are discrete and countable; their real-world referents are not. The idea of a word as simple as *book* including every book ever written in any language as well as every edition of them, not to mention books not yet written, always rewards a moment's pause; the staggering scope of even the most basic words speaks volumes to the economy of language. (And polysemy is part of the machinery that maintains the economy of words.)

Linguists often compose sentences to demonstrate ambiguity, but we know that very few sentences are actually ambiguous in real discourse. (The word *mean* in *Clark Terry blows a mean trumpet* certainly does not carry the meaning of 'average' here.) It is therefore easy to forget just how ambiguous sentences can be to L2 learners, including not just the garden-path sentences that began the first chapter but sentences that might not strike native speakers as ambiguous at all. Much work remains to be done. As teachers we need to make learners aware of the extent polysemy plays in the language so that they look for it in instances where they understand all the words but not the overall meaning. Once they look for it, there still must be instances in which the polyseme is more salient as the source of confusion than others. I would suspect, for example, that a learner failing to understand 'She was upset about the general flavour of

the meeting' could pinpoint *flavour* as a contender for polysemy, especially when assuming a meeting has already been referred to. (Whether they can accurately guess the meaning is another matter, but pinpointing it is the first step.) I would also think that the polysemy of *CD* ('compact disc' or 'certificate of deposit') in 'The CD market in London started in 1967 with the issue of the first US dollar CD[.]' is easily identifiable because of the context, at least for learners who know we didn't listen to CDs in 1967, but it's easy to imagine situations in which the context is not so clear-cut, such as the verb of 'His expression registered disillusionment.' I'm not so convinced that the polyseme can be so easily identified in the final word of 'I want to buy her that ring, but I'm a little shy.' (Divorced from context, that's ambiguous even to native speakers. The intended meaning of *shy* here was 'not having enough money.') Would a learner encountering the sentence 'She didn't accept the job offer because she was expecting' realize that the woman was pregnant, or would they make some assumption that she was expecting another job offer to come through? And of course, sentences may have more than one unknown polyseme: *He finally made his way to the battery and, in a fit of anger, discharged his magazine in one go.* This raises another question. Are very well-known words (like *battery* and *magazine*) harder to suspect of polysemy than those of known but rarer words?

Chapter four: The flavour of polysemy and the polysemy of *flavour*

[Environment is] a big, booming, buzzing confusion.
William James

The previous chapter examined the different types of polysemy, recognising, from a semantic point-of-view only two: lexical metaphor and vicariant polysemy. This chapter examines how the senses of polysemes contrast beyond the semantic realm. This sequencing is significant. A polyseme—that is, a word of 'many meanings'—must be distinguished *by* these meanings. However slippery the notion of 'meaning' may be, something I believe the second chapter has demonstrated, the temptation to analyse polysemy by observing non-semantic differences must be avoided. Data on the collocations of a word can be generated with precious little human involvement and syntactic behaviours can be easily formalised; a word's semantic properties, however, are not subject to precise, formal delineations. It is the shifts in meaning that trigger shifts beyond the meaning, in collocation for example, not the other way around, and these effects are not so discrete that they can be used to pinpoint the causes. This cart-before-the-horse approach, that polysemous meanings can be determined by their syntactic properties and collocational behaviours, has influenced much of corpus-based lexicography. The problem is that it becomes a self-fulfilling prophecy; it is easy to demonstrate with a few examples that polysemic senses have differing contexts, but this can be taken as criterion without recourse to meaning, taking the *-sem-* out of *polysemy* yet continuing to call it such when something like *polysyntax* or *polycontext* might more accurately describe the results. It is with that caveat in mind, that effect not be mistaken for cause, that we now turn our attention to effects of polysemy beyond the semantic.

Hoey's (2005) theory of lexical priming provides a useful heuristic for us to

examine the extra-semantic properties of a polyseme although I will freely deviate from his framework to make other observations regarding the ways different senses contrast. The claim Hoey makes is that words are primed to behave in certain ways, or more accurately, that language users are primed to use and expect words to behave in certain ways. The word *consequence*, for example, is primed to associate with the concept of underlying logic and so consequences tend to be denoted as *logical*, *inevitable*, *probable*, etc. Another priming is of negative evaluation, providing consequences that are *disastrous*, *awful*, *regrettable*, etc. A third priming of *consequence* reflects importance: *a serious consequence*, *a significant consequence*, *an important consequence*, etc. A final priming entails unexpectedness as consequences can be *surprising*, *unforeseen*, *curious*, etc.

Words prime in various ways, including not just semantic associations, collocations and colligations, but position in a sentence and even within a text. Hoey's chapter on lexical priming and polysemy is fuelled by a hypothesis that I summarise here, taking liberties for the sake of brevity, as: polysemic senses avoid each other's primings, and when one sense is found with the primings of the other sense, the result is either ambiguity (momentarily or permanent) or humour. Hoey identifies two meanings of *consequence*, one regarding outcomes and the other regarding importance (i.e., to be of little consequence) and uses corpus data to demonstrate their contextual differences. For example, the 'importance' meaning nearly always occurs within a PP, as in the example I just gave, though it can occur elsewhere, as an object (for example of *have*), which is a position which the 'outcome' usage of *consequence* avoids. On the other hand, it is only the 'outcome' sense that has the semantic associations with LOGIC and NEGATIVE EVALUATION, while the 'importance' sense, but not the 'outcome' one, has a semantic association with DENIAL (i.e., of little consequence, of no consequence,

of no great consequence, etc.)

In our exploration of Hoey's claim, the word *flavour* will serve us once again although at times I will draw support from additional words. Where the second chapter reproduces Ruhl's methodology to convey his theory using new data, the word *crawl*, this chapter emulates Hoey to convey his, this time returning to the word *flavour*. At some turns I will make points that conflict with those of Hoey, but this is in the interest of developing his theory and certainly not to reject it.

4.1 Methodology

Using the *BNC*, all instances of uninflected *flavour* were examined with non-noun uses deleted by hand, resulting in 1,495 concordance lines. The program used was *Wordsmith Concord* to employ its tagging feature. Each instance of the word was tagged for whether it showed the literal meaning or the metaphoric. This accounted for 94% of the data, with 946 literal noun uses and 412 metaphoric nouns, a ratio of 1:2.3. The remaining 6% were either deleted or accounted for. The largest of these, at 4%, is the special case noted in the previous chapter: *flavour of the month*. Within the phrase, it is the literal meaning being used, but it is the phrase itself that is being used metaphorically. (There were no references to flavour-of-the-month clubs or their offerings, which would be the literal use of the phrase.) These instances, and variations including *flavour of the moment/year/etc.*, were removed from consideration on the grounds that the multi-word construction comprises a single lexical unit.

Of the remaining 2%, only one case introduces a dedicated sense; it is of recent vintage and regards computers as can be seen in [1].

[1] SGI's Irix flavour of Unix is only available to strategic partners.

Thirteen such cases, accounting for just under 1%, are found in the data. The other

instances that were not deleted but saved for further analysis include a 'special' category, something of a catch-all for instances that didn't fit comfortably under the other headings. An example of this is given.

[2] Variety's the very spice of life That gives it all its flavour

While metaphoric, it is not the same metaphoric reading that the 'literally' test unveils but rather an extension of the metaphor introduced earlier in the sentence. Similar is [3]:

[3] But the flavour of the month was no flavour at all.

As *flavour* appears twice, this sentence appears twice in the data. The first instance presents no problem and was relegated to the 'phrase' category, but the second one is, like the instance in [2], a play on words not easily accommodated by the other categories. The remaining category of data that needs to be considered is that of zeugma, examples that clearly employ, or at least evoke, more than one sense (also a type of wordplay). This is seen below:

[4] Capture the flavour and atmosphere of Italy with grilled chicken and herbs on a bed of rice.

[5] We've used both Danish Blue and Lurpak in our recipes to show you a few ways of bringing a flavour of the Continent to your cooking.

[6] Cooking in the classical French style, something spiced with the flavour of the Orient, an evocation of the Arabian nights or India, national dishes from the Balkans, Greece or the Mediterranean, the Italian pizza, the Spanish paella, the Hungarian goulash or a genuine American hamburger, are always within easy reach.

In each case, the metaphoric meaning is used in the context generally reserved for the literal. I would argue that each use is actually the metaphoric (again, for the literal use to work, *flavour* would have to have the meaning of 'flavouring'), but there are confusing contextual clues. This will be developed more fully below.

There remain, then, three types of data to discuss. These were rejected as unimportant and I don't believe doing so will be remotely controversial. The first of

these are cases in which *Flavour* was a proper noun, as in [7] and [8]

[7] TRIED and Tested, Giant Arc, Flowers of Sacrifice and Flavour are among the bands taking part in the second local music extravaganza

[8] Flavour looks at her oddly.

The next type of data that was removed were those instances which did not occur in a complete sentence or utterance. Sentence [9] makes a pretty convincing case why these are difficult to disambiguate.

[9] Need a turn up. Absolutely nothing sir. Yes Stew Look for that bit. that'll do, for the only one that'll do me any good. See what ay? flavour. Twenty. Twenty nine. Twenty one for two. Twenty one. Four. Four. Ten Noisy! Oh dear! Eighteen. God I do ! Eighteen.

Also included in this category were titles and headers. Although it seems to be zeugmatic and may offer some insights on those grounds, what can be done with a title that is simply 'Oriental flavour'? Finally, one instance is, I believe, a typo where the writer intended *favour*:

[10] Still, scam or no scam, there's no denying, especially not from Galliano themselves, that the tag is currently working full steam ahead in their flavour.

Once the tagging was completed, each sense was moved to its own concordance file so that the patterns of each meaning could be examined separately rather than all lumped together. There are a few ways in which the two main senses of *flavour* contrast which I find especially revealing of the process of metaphorisation and even the way language encodes our conceptual system. These aspects include the word's co-hyponyms and its tendency to coordinate with other NPs, its use in comparative constructions, its modification and its ability to modify. From here, we shall briefly examine the computer variety seen in [1] and then the zeugmatic and special instances removed from the main analysis and the larger issues they raise. Finally, a development

of Hoey's view to accommodate specific data is made.

4.2 Results

The goal here is to use a different word to test Hoey's claim that the different senses of polysemes avoid each other's collocations, colligations and semantic associations. The term *collocation* is well known these days but Hoey restricts its use to content words while *colligation* covers function words. The usefulness of this distinction cannot easily be denied though the terminology in effect makes *collocation* polysemous for lexical collates and the larger, umbrella term that includes both lexical and functional words. I prefer, then, to use the term *lexical collocation* for clarity. For the purposes of the current project, a collocation (of either type) is a word that occurs a minimum of five times in a 4:4 window—that is, within four words to the left of the word or four words to the right.

Semantic associations are patterns of collocations, meta-collocations if you will. While computers are undeniably useful for highlighting collocations, semantic associations require the human eye. The word *flavour*, for example, collocates with words like *salty*, *fishy*, *malty* and *nutty*. If the computer has the last word, it will be left at this stage, but the researcher should be able to see a pattern that these words form: they are all adjectives formed from nouns denoting food. Although I have conflated them with syntactic information, these are semantic associations.

4.2.1 Co-hyponymy and co-ordination

Table 1 shows all the nouns that collocate with the literal sense but not the metaphoric.

Word	Total	Word	Total
TEXTURE	30	APPEARANCE	6
COLOUR	26	HERBS	6
FOOD	15	DIFFERENCE	6
FRUIT	14	VARIETY	5
AVERSION	14	FRAGRANCE	5
AROMA	13	RECIPE	5
EXPOSURE	12	PLENTY	5
TASTE	12	COOKING	5
CHEESE	9	JUICE	5
LEAVES	9	ORANGE	5
QUALITY	9	COFFEE	5
MEAT	8	SAUCE	5
DEPTH	7	FISH	5
LEARNING	7	WHISKY	5
CREAM	6	WATER	5
FRUITS	6	TEST	5
YOGURT	6	SPICES	5
ENHANCERS	6	BEER	5
SCENT	6		

Table 2: Nominal collocates of 'flavour,' literal sense only

(In cases where these words are polysemous with other parts-of-speech, such as *leaves* and *taste*, I checked that there were at least five nominal uses.) Two categories, which account for 70% of these cases, suggest themselves. Eighteen words denote edible substances (i.e., food or drink) either generally (*food, sauce*) or specifically (*fish, cheese, whisky*) while eight words are co-hyponyms with *flavour*—that is, *flavour* is a hyponym of 'edible substance' as are these other eight words, which are: *appearance, aroma, colour, fragrance, quality, scent, taste* and *texture*. The first category may be obvious, but this second category is important for two reasons. First, the metaphoric use of *flavour* lacks any co-hyponyms. Flavour is an expected, perhaps required, trait of any edible substance; this is not true of any entity that may be said to have flavour in its metaphoric sense. There are many things about which we *may* talk of as having a metaphoric flavour, but nothing exists that *must* have a metaphoric flavour. The second reason why this is important is because of a priming it reveals. The literal sense is

primed to occur in coordination with these and other nouns. A separate search for all instances of *flavour* within a 4:4 window of these eight words reveal it to occur in coordinating patterns in 85% of these instances. A few examples are provided.

[11] To release the aroma and flavour of the coffee beans, they must be roasted, the process which also gives them their brown colouring.

[12] Light whisky is stored in seasoned charred oak casks, which impart little colour or flavour.

[13] It has an enticing scent and flavour of just pressed grapes cut with a fresh note of lemon.

[14] We were looking for a good flavour and meaty texture.

(As an aside, it is worth mentioning that the literal verb *flavour* also behaves in this matter although these instances were not factored into the tally.) The metaphoric sense is not primed to behave in this way. This is not to say that it can't—there are instances of it coordinating with *bias*, *direction*, *image*, *intent*, *outlook*, *reputation*, *accuracy*, *nuances*, *rhythm* and *tone*—but there are no words with which the metaphoric *flavour* occurs in co-ordination more than once, which brings us back to its lack of co-hyponyms. The literal sense is approximately four times as likely to occur in coordination than is the metaphoric. This demonstrates Hoey's claim that one sense avoids the primings of the other, in this case in regards to co-ordination and co-hyponymy.

4.2.2 Comparatives

Both the literal and metaphoric uses of *flavour* occur occasionally in comparative constructions, limited in my corpus searches to instances where the comparative word occurs in the same NP as *flavour*. These are either adjectives ending in *-er* ([15]) or constructions using *more* ([16] and [17]).

[15] Stemming solely from the Gascony region of France's South West, it has a smoother, richer flavour than Cognac.

[16] The latter are the hottest, the dried berries having a more subtle flavour.

[17] Orwell's political allegory *Animal Farm* and Stan Barstow's *Joby* add a more modern flavour.

The behaviour of these two differ dramatically. The literal and metaphoric uses take the *more* construction somewhat equally. These uses account for 3% of the total literal instances and 2% of the metaphoric. However, lexical comparatives such as *sweeter*, *fuller*, *lighter*, etc. occur only with the literal set.

It is important, however, to cross-check absolute claims from corpus data with native speaker intuitions. Some of these *-er* words are adjectives, such as *sweeter*, and some are intensifiers or both such as *stronger*. I don't believe *stronger flavour* is generally possible with the metaphoric sense (without sounding awkward or deliberately extending the metaphor discussed in the zeugma section) although I find the use of *stronger* as an intensifier, as in *a stronger international flavour*, quite possible. It doesn't occur in the corpus data although it could. However, it is safe to conclude that comparative adjectives modifying *flavour* are far more likely with the literal sense than the metaphoric.

A quick note: the word *than* is included only with the literal usage in the *BNC* (comprising 44% of the total uses of *flavour* in comparatives), but here, again, native speakers should be perfectly able to compose instances of the metaphoric used comparatively including the *than* PP.

I must, however, return to the claim that *more* occurs equally between the two senses because a closer look reveals divergent patterns within the distributions. Both [16] and [17] show a *more* + adjective + *flavour* construction, but the corpus account reveals another pattern:

[18] Hereford beef is more fatty which gives it more flavour, and that's what the customer wants.

It is probably not surprising that *more flavour* occurs with the literal sense only; in fact, it accounts for nearly a quarter of the instances in which *more* occurs with the literal *flavour*. However, this is an issue that extends beyond a discussion of comparatives and into the next topic, modification. (In certain respects, this chapter is guilty of the same practices I criticize of lexicography in its attempts to drive certain aspects of words into neat little divisions when they are, in fact, continuous wholes. Since the aspects examined in this chapter are not as modular as the organisation suggests, it is only at the end of the chapter that each aspect can be said to be, cumulatively, considered.)

4.2.3 Modification

We now pose the question: are the two main senses of *flavour* modified in a same or different manner? To answer this, all instances in which the literal and the metaphoric uses of *flavour* occurred were analysed for the type of modification they took. There are four possible categories: pre-modification only, post-modification only, both pre- and post-, and no modification. Pre-modification is defined as anything in the NP to the left of the head (always *flavour*) barring determiners but including pre-determiners while post-modification is anything in the NP right of the head. Only instances in which *flavour* headed the noun phrase were considered, so cases in which it was in the attributive position were removed; examples of this include *flavour enhancer*, *what flavour toothpaste*, etc., and these cases are the subject of a subsequent section. Included in the tally were instances of comparative adjective phrases such as *a more distinctive flavour than the mass-produced cheese*. Instances such as *a bit of flavour* were included, despite being the object of a prepositional phrase, on the basis that *flavour* is the actual head and *a bit of* a specifier (Aarts 1997) or a quantifying classifier. The distribution of modification for the literal sense of *flavour* is given in

Chart 1 while Chart 2 shows that of the metaphoric sense. These are followed by example sentences from the *BNC* illustrating each permutation.

Chart 1: Modification of literal flavour

Chart 2: Modification of metaphoric flavour

Literal sense, pre-modified:

[19] With its clever combination of egg and lemon, it has a pleasant, but slightly tart flavour.

[20] It has a rich nutty flavour and a full bodied bouquet.

Literal sense, post-modified:

[21] A chill sharpened the flavour of the water.

[22] Plucked straight from the brine, the flavour of the olives can be overpowered by the salt.

Literal sense, both pre- and post-modified:

[23] It's a different flavour altogether, it's lovely, isn't it!

[24] It contains all the flavour of common salt but only a third of its sodium.

Literal sense, no modification:

[25] Mozzarella cheese adds flavour and an unusual texture to any salad

[26] The flavour should be almost viscous for a white wine, rich and succulent for a supposedly dry wine.

Metaphoric sense, pre-modified:

[27] It is a handsome conversion and gives a catholic flavour to a street which used to be the exclusive preserve of contemporary Western art.

[28] Despite that, the book has a curiously impersonal flavour, which is a pity.

Metaphoric sense, post-modified:

[29] The results were stunningly successful and caught the flavour of Sixties London and the generation gap.

[30] I have tried to give a flavour of life in Bishop's Castle from the turn of the century to the 1920s.

Metaphoric sense, both pre- and post-modified:

[31] This route gives you a good flavour of the West Country.

[32] Here it is only possible to give a general flavour of this case-history

Metaphoric sense, no modification:

[33] The Irish attitude, in contrast, tends to be traditional and to regard rugby as a pastime and an international tour mainly adding to the flavour.

[34] We will see top players from the rest of world, Brazilians, Argentinians, Dutch and Germans to enhance the flavour.

It's easy to misread these charts so that the literal sense has pre-modification 50% of the time, but it needs to be remembered that the 'Both' category also includes

pre-modification, so this sense is pre-modified, in fact, 63% of the time. Table 3 makes this explicit, while Table 4 collapses the data further yet, showing the distribution of uses that are simply modified or not.

Literal sense	Pre-mod, combined	63%
	Post-mod, combined	23%
Metaphoric sense	Pre-mod, combined	63%
	Post-mod, combined	51%

Table 3: Pre- and Post-modification of flavour combined with 'Both'

Literal sense	Modified	73%
	Not modified	28%
Metaphoric sense	Modified	93%
	Not modified	6%

Table 4: Modification of flavour combined

Starting with Table 3, we can see that, at the most top-down level, the two sense are not modified equally, but as Table 3 shows an even distribution in pre-modification, the discrepancy is in the post-modification—the metaphoric sense is post-modified 28% more often than the literal—and those uses in which there is no modification (the literal sense is bare over a quarter of the time while the metaphoric sense is rarely unmodified, only about once out of 16 occurrences, returning us to the unaddressed point which ended the previous section on comparatives. All uses of *more flavour* employ the literal sense of *flavour* because the metaphoric sense is quite rarely used without a word or phrase denoting the kind of flavour. To answer why one sense is frequently used alone and the other not, it's necessary to look at how the word is modified.

To do this, we will examine the L1 collocates (that is, words that occur five times or more to the immediate left) of both senses. These were calculated separately, the colligations (function words) were removed by hand, and the remaining content

words were imported into a spreadsheet program which compiled two lists: those collocates unique to the literal sense and those unique to the metaphoric. These are presented in Tables 5 and 6.

Word	Total	WORD	Total	WORD	Total
FULL	45	FIND	9	FRAGRANT	5
TEXTURE	30	EVEN	8	TEST	5
SLIGHTLY	26	LITTLE	8	AFTER	5
COLOUR	26	ROUNDED	8	JUICE	5
RICH	22	MEAT	8	COFFEE	5
DELICATE	21	KEEP	8	VARIETY	5
GOOD	20	USED	8	DURING	5
SWEET	16	RATHER	8	FRUITY	5
FOOD	15	ADDED	8	WHISKY	5
BETTER	15	NICE	8	BLACK	5
LIKE	14	SIMILAR	8	BEER	5
FRUIT	14	DEVELOP	8	ENJOY	5
FRESH	14	TRADITIONAL	8	WATER	5
BITTER	14	EXCELLENT	7	DRY	5
AVERSION	14	DEPTH	7	SHARP	5
ADD	13	SPICY	7	ORANGE	5
AROMA	13	ADDS	7	SAUCE	5
EXPOSURE	12	LEARNING	7	ATTRACTIVE	5
MILD	12	SCENT	6	PLENTY	5
BEST	12	RELEASE	6	PUNGENT	5
TASTE	12	ENHANCERS	6	FISH	5
NUTTY	12	YOGURT	6	RECIPE	5
NEW	12	WITHOUT	6	COOKING	5
SUBTLE	11	SMOKY	6	LIGHT	5
STRONGER	11	CREAM	6	FRAGRANCE	5
EXTRA	11	TART	6	TANGY	5
FULLER	10	APPEARANCE	6	MELLOW	5
DELICIOUS	10	DIFFERENCE	6	NATURAL	5
BRING	10	HERBS	6	BLAND	5
LEAVES	9	FRUITS	6	SPICES	5
CHEESE	9	LOVELY	6	FOUND	5
QUALITY	9	PLEASANT	6		
FINE	9	HOT	5		

Table 5: Lexical collocations of literal 'flavour'

Word	Total
INTERNATIONAL	17
FRENCH	8
DISTINCTIVE	8
SPECIAL	7
AMERICAN	6
LOCAL	6
POLITICAL	6
SPANISH	5
WORK	5
GENERAL	5
COUNTRY	5
CONTEMPORARY	5

Table 6: Lexical collocations of metaphoric 'flavour'

It should be immediately obvious that the number of L1 lexical collocates of the literal sense dwarfs the corresponding set for the metaphoric. This was mentioned in 3.1.1: the literal sense of *flavour* is bound to one domain, the culinary, so it naturally is found in culinary-related contexts, garnering culinary-related collocates, while the metaphoric sense applies not to one but to a wide variety of situations. It is not so much the domains which determine the number and range of collocations but the status of being 'tightly bound' which garners them and that status of being 'loosely bound' that allows them to slip away.

Returning to the point that introduced these lists, the ways in which the two senses are pre-modified, we examine the L1 collocates. I won't pretend the rigid criterion of 'L1 collocates' gives a complete picture of pre-modification but it does provide a convenient snapshot. A close look at the two lists reveals that these words are, when adjectives, derived forms of other English words (*nutty* from *nut*, *spicy* from *spice*, *distinctive* from *distinct*, etc.) 17% of the time for the literal sense but those of the metaphoric are derived forms 57% of the time (*international*, *French*, and again *distinctive*). At this point the reader may well begin to worry about the level of detail

this analysis will go into, but I raise this point because what it reveals is rather important. To invert these numbers, the literal sense has dedicated adjectives (i.e., simplex forms (Bauer 1983), not derived from other words) 83% of the time while the metaphoric is about half this at 43%. The literal meaning of *flavour* functions within the domain it was custom made for. The notion of flavour and the larger context of eating are fundamental human experiences so it's not surprising that the words associated with it are also dedicated words. They are fundamental, rudimentary even, both semantically and morphologically. On the other hand, the metaphoric use of *flavour*, is a derived form itself, though not one formally marked (i.e., the process sometimes known as zero-derivation), and has adapted to its new environment by collocating with words that are also derived. It's not, of course, a matter of 'like attracting like' but of one adaptation (the conversion of the word form to its metaphoric meaning) mandating another (the environment) like ripples in a pond: the word is adapted, a process that triggers an adaptation of its environment. There are very few simplex adjectives which fit comfortably with the metaphoric sense and these are very general in meaning (*distinct, special*); it is the derived adjectives that impart the usage with specificity—i.e., the difference between a town having a special flavour or it having a French flavour⁶.

The Darwinistic, well, flavour of the above is a matter of convenience on my part, and my goal is not to propose a survival-of-the-fittest, adapt-or-be-killed paradigm for emerging senses, though such a case could probably be made. It is only the message and not the metaphor used to convey it that I will defend.

The question, then, of why the literal sense of *flavour* is commonly unmodified while the metaphoric sense seldom is, is not so different. The literal is the base sense, a

⁶ The distinction between derived and inflected forms is important here. The literal sense has an additional 12% of inflected adjectives (*fuller, best, added*) while the metaphoric has none in the L1 position, even when expanded to include any word that occurs twice or more. This corresponds to the ability of literal sense to be modified by *-er* adjectives but not the metaphoric.

sense therefore tightly bound to its semantic domain and, furthermore, already primed by its context (*primed* not in Hoey's sense but in the sense that, one we've read the word *hospital*, the word *doctor* may be primed or 'readied' by the brain); the metaphoric sense, on the other hand, needs additional support to override its default reading, to create a context in which it can function as intended. In the few examples of the unmodified metaphoric *flavour*, the type of *flavour* is often found elsewhere. In [35], for example, the type of flavour is found in the predicate (or theme) rather than within the NP, while the same is found in the ensuing discourse of [36] (which I've included) and [37] (which I don't believe needs to be presented a second time). In [33] and [34] above, the type of flavour is pragmatically supplied and therefore no doubt more clearly defined to the more traditional readers of the text rather than those of us pulling isolated segments out of it.

[35] The flavour is altogether more lower middle class and middle middle class, rather than middle middle and upper middle.

[36] The event is now a well-established tradition, but for the benefit of newcomers, a word about its flavour. It is very much a family event which in recent years has attracted more than 1,000 participants and at least as many spectators. It's a welcome outdoor diversion after the usual indoor festivity. Although the event attracts some serious runners, it is essentially a fun-run for mums, dads and grandparents, young children and youth.

[37] A few examples may give a flavour.

So while these uses may not be modified within the NP, the information is still presented in another manner. In fact, such uses may forbid direct modification because the information is too complex for the limits, liberal as they are, of modification and cannot be squeezed into adjectival status.

Hoey's claim that the different senses of a polyseme are primed differently is largely supported by the fact that the NPs they head are, largely, modified differently. This claim will, however, be re-examined and modified before this chapter concludes.

4.2.4 Compositionality and compounding

We turn now from how *flavour* is modified to how it modifies, to those instances of *flavour* modifying another noun that were removed from the previous section. Only two nouns fit the R1 slot five or more times and these are *aversion* (14 times) and *enhancers* (six) (with the singular *enhancer* occurring four additional times). However, this reveals a quirk both of the corpus and the *Concord* program. All 14 instances of *flavour aversion* are from the same text, and *Concord* does not allow one-per-text filtering as some other programs do. However, the full range of nouns that occur, even once, in the R1 slot (of which there are 38, all but five occurring only once so I will not produce the complete list here) reveal that only the literal sense of *flavour* can occur in the attributive position. If this data seems awkward with its 14 instances from one text and preponderance of *hapax legomana*, native-speaker intuitions bear this out: there is no noun that the metaphoric sense can comfortably combine with, and certainly not with a scope extending beyond nonce usage: the right NP in illustration 1 cannot be completed if *flavour* uses its metaphoric sense.

*Illustration 1: flavour as left element
in compound noun formation*

The claim is only that *flavour*, and not all polysemes or even lexical metaphors, is restricted in this matter. The word *seed*, introduced in 3.3, is a lexical metaphor where both the literal, in [38], and the metaphoric, [39]-[40], occur in the attributive position:

[38] The new Colour Schemes seed mixtures come in five different colour [*sic*]: yellow, orange, pink, blue and white.

[39] They're out looking for seed money and a board now with a deadline of December.

[40] HWIM and Hearsay-II focus the search by predicting the words on either side of a seed word found bottom-up

A different word here is more illuminating of the variation. Several senses of the very polysemous *battery* occur immediately before other nouns, as in *battery compartment*, *battery action* (i.e., a legal action against assault and battery), *battery guns*. However, the sense seen in *a battery of tests* does not reveal any R1 nouns nor can I come up with any (*battery testing* defaults back to the 'power cell' sense). Moreover, yet another sense, that associated with a method of raising chickens (in British English at least), occurs *only* in this position; thus we have *battery hens*, *battery cages*, *battery eggs*, etc., but no possibility to use this *battery* as a standalone noun. (The phrase *battery charges* is, incidentally, a rare example of double polysemy co-occurring without evoking humour.)

4.2.5 The computer sense of *flavour*

About the computer sense of *flavour* there is precious little to be said, and what observations are made are done so for the sake of completeness and constitute little more than a sidebar. There is a paucity of available data in the *BNC*—13 instances—partly because this would seem to be a sense of recent vintage (not included in the *SOED* though obviously old enough to be in the *BNC*) and partly because it can be considered technical vocabulary. The following instances are typical. See also [1] above.

[41] Unix is easily ported to any flavour of Unix required.

[42] Mainlan GTI now comes in a Windows flavour as well as DOS, and it's the

The only collocate is *Unix*, which occurs in just over half of the instances, seven times, and with a proper noun denoting computer software of some kind in twelve (92%, but percentages can be very inaccurate with so little data). This use of *flavour* is post-modified by an *of* PP, as in [41], in eight of the occurrences, although it may be more accurate to say that *flavour of* is the specifier and not the head of these NPs.

4.2.6 Zeugmatic uses of *flavour*

We turn now to those zeugmatic instances of *flavour* removed from the above analysis and to the larger issue of creativity and language play. There were ten such cases out of the total data pool of 1,495. All of these are, I would claim, really instances of the metaphoric use, but in the context generally dominated by the literal. Some of these feel more zeugmatic than others, and the following examples are arranged roughly from the 'less zeugmatic' to the more.

[43] (= [4]) Capture the flavour and atmosphere of Italy with grilled chicken with herbs on a bed of rice

[44] Try a taste of yesteryear, but with an oriental flavour.

[45] Sipping a Sling does not have the same flavour of nostalgia when you are not sitting in the old hotel with the arches and verandahs imagining you are Somerset Maugham.

[46] ...and afternoon coffee takes on a flavour all of its own when enjoyed with a fresh pastry cooked before your eyes.

[47] Even the regional flavour of the menu has been lost.

[48] This nutritious and hearty soup with a delicious Italian flavour is suitable for a light lunch, or as a starter for an evening meal.

The first and final of these may not even seem to be cases of zeugma at all at first glance. In [43], the metaphoric reading of *flavour* is clearly reinforced by coordination with *atmosphere*, while in [48] the metaphoric meaning can be easily missed. As noted earlier, however, for the literal sense to work in any of these cases, the meaning of *flavour* would have to be that of *flavouring*, i.e., a specific (countable) flavour, which is

never the case. (Note that example [44] is further compounded by the pragmatic polysemy of *coffee* and [47] by that of *menu*.)

This brings us to the second part of Hoey's hypothesis, to which I've not attended since its initial mention: when one sense is found with the primings of the other sense, the result is either ambiguity (momentarily or permanent) or humour. To various extents, examples [43]-[48] bear this out. Especially with the given task of disambiguation (which would be less important, certainly less explicit, if encountering such cases naturally), sometimes it is necessary to stop and think which sense is employed because all of them either occur in contexts related to food or drink ([43], [45]-[48]) or engage in language play by extending the metaphor (i.e., the co-occurrence of *taste* with *flavour* in [44]). Two similar attested instances are presented in [49] and [50].

[49] Voice over The family flavour is savoured at nearly 100 pubs in and around Swindon and the Cotswolds.

[50] (= [2]) Variety's the very spice of life. That gives it all its flavour

This language play is simply what language users do and *flavour* is far from alone in this behaviour.

[51] It may stop your dream from turning into a nightmare.

[52] I've known a lot of women in my time, and -- 'In the Biblical sense, no doubt!'

[53] He saw God as a glorified combination of boat and helicopter, not unlike Jules Verne's The Terror .

I make no claim that wordplay is always intentional. I certainly have reservations that the zeugma in [53] (the polyseme being *glorified*) was a deliberate attempt.

Humour tends to make more explicit use of the other sense's lexical primings, using lexical collocates for example, as seen in Groucho Marx's 'You haven't stopped talking since I came here. You must have been vaccinated with a phonograph needle.' The following examples of polysemy-sourced humour are my own: I take the the blame

for each.

[54] I'm an organ donor. I figure if I'm dead I won't be playing it any more.

While the noun *donor* firmly evokes the biological sense of *organ*, making it the object of the verb *play* calls up the musical related one.

[55] He communicates with spirits every night, usually tequila.

The word *communicates* and *tequila* are associated with two different meanings of *spirit*.

[56] I used to live next door to a guy who made really nice tennis rackets. But I couldn't sleep. Every night he made such an incredible racket.

The 'noise' sense of *racket* is commonly an object of the verb *make*, a reading reinforced by its modification by *incredible*.

[57] Later I heard he made money by organising illegal gambling on tennis games. That's what's known as a tennis racket.

Here, an inability to interpret the final NP literally forces a new reading to align with the earlier information.

[58] When I was teaching my wife tennis, I had to let her beat me. Sometimes I wouldn't score a single point. Now that's love.

This is a case that actually works well, if unhumorously, entirely on the literal level. The humour is perhaps triggered by the larger discourse: our topic is humour and polysemy so a humorous double meaning is expected. In another discourse mode the double meaning might go unnoticed or even be unintended or (if intended) might be followed by a more overt trigger such as 'Get it? *Love!*'

The humour can be conveyed even when the form is morphologically altered to

one not allowed by both meanings.

[59] I prefer intransitive verbs to transitive ones. They're not as argumentative.

However, lexical primings do not explain all instances of polysemy in humour.

[60] Try some goat's milk. Kids drink it every day.

[61] 'I don't believe in polysemy!' the man ejaculated.

There is nothing in [61] to trigger the sexual meaning of the final word. In these cases, the humour seems to result entirely from the contrast between a rare sense and a common one. This kind of humour cannot work with polysemes with two common senses, such as *dream*. The humour of [61] may also stem from an awareness of the existence of the 'dirty joke' genre.

We have taken a lengthy departure from our examination of the polysemy of *flavour* because no one word can show the range of effects that mixing the lexical primings of one word with the use of another can have, nor have I completely done so as I have not demonstrated ambiguity and vagueness which Hoey has written about. I have, I believe, shown just how important lexical primings are to polysemous senses, that they can be flouted but with very specific results.

4.3 Discussion: Expanding on Hoey

Our return to *flavour* is accompanied by an explanation of why this particular word was chosen. Lexical metaphor is an area which slips through the cracks of Hoey's analysis. He claims that each polysemic sense will avoid the primings of the other, illustrated with analyses of *consequence* ('result' and 'importance') and *reason* ('logic' and 'rationality'), both of which are balanced polysemes. Indeed, my own work on *battery* and *racket* bears this out. Lexical metaphor, however, shows a different behaviour. A metaphoric sense not only does share some the literal's primings but, it

seems, must do so to convey the metaphor (or at the very least needed to when the metaphoric sense was first coined and began to develop currency, if you'll pardon the wordplay).

First of all, the two senses of *flavour* share certain lexical collocates, as table 7 shows⁷.

Word	Total	Literal	Metaphoric
GIVE(S)	54	32%	69%
MORE	45	73%	27%
DISTINCTIVE	34	79%	21%
STRONG	33	52%	48%
UNIQUE	15	47%	53%
DIFFERENT	15	60%	40%

Table 7: Lexical collocates shared by the literal and metaphoric senses of 'flavour'

Another way of looking at this data is that table 7 shows what remains once we have stripped away all the lexical collocates unique to either sense. We noted earlier that the simplex, lexical collocates of the metaphoric sense were rather vague in their semantic contributions, lacking the specificity of the derived forms, but here, our list of collocates shared by both senses is composed entirely of similarly vague forms. These words have a focusing effect, telling us not the kind of flavour but how it relates to other possible flavours (i.e., there's more of it, it's stronger, more distinctive, unique or different⁸) The adjectives *distinctive* and *strong* mirror the behaviour noted above regarding *more*: they do not modify the otherwise bare metaphoric *flavour* but there is always another modifying element present, either in the pre- or post- position.

But it is the verb *give* that perhaps most clearly shows how the metaphoric sense imports certain aspects of the literal's subcategorisation. (I should note that while *give*

7 If it surprises that *more* should be a collocate for the metaphoric *flavour* after our lengthy discussion of *more flavour* always employing the literal sense, the cases here all involve *more* modifying an adjective which in turn modifies *flavour*, cf. [17] above.

8 All instances of *different* premodifying either sense of *flavour* denote contrast with another flavour, sometimes explicitly stated with a *from* PP, and do not convey the meaning of 'usual, atypical.'

and *gives* were combined in table 6, the uninflected *give* was always the most frequent shared collocate.) Both senses occur as the object of *give* ([62] – [68]), with or without a *to* PP ([64]-[65]) to denote SOURCE, and they both occur as direct objects of the ditransitive form ([66]-[68]) but neither can appear as the indirect object.

[62] Add a bit of orange peel, if you like, and a crushed dried and seeded chilli gives a nice flavour.

[63] It is a long way short of defining the format, but gives the flavour.

[64] Orange and a touch of coriander, to give an unusual flavour to the lentils.

[65] It is a handsome conversion and gives a catholic flavour to a street which used to be the exclusive preserve of contemporary Western art.

[66] It is peculiarly English and should be bought from a round loaf, covered in strings of fat which give it flavour.

[67] I am delighted to commend this booklet to you which I hope will give you a flavour of the variety and interest available to solicitors in local government.

[68] (= [18]) Hereford beef is more fatty which gives it more flavour, and that's what the customer wants.

There are, however, at least two dissimilarities within these frames. First of all, if *flavour*, as the direct object of *give*, is post-modified with an *of* PP, the meaning of *flavour* is invariably the metaphoric. It is difficult to compose a convincing sentence with *give* + *flavour of* using the literal sense, my best attempt being [69], the awkwardness of which attests more to the questionable use of this formation than to its potential.

[69] ? The cocoa gives the cake a/the flavour of chocolate⁹.

Second, when the metaphoric sense appears to the right of ditransitive *give*, the indirect object is always *you* in the *BNC*, as in [67] above, but for one example of *us*. At any rate, it seems that only a person (or people) to whom information is being conveyed can fill this slot. Literal uses of *flavour* in this construction are possible only when the speaker is a cannibal and the interlocutor his next meal.

9 Native-speaker reactions to this sentence have been mixed, some finding it awkward, some perfectly acceptable, while still others are distracted by a perceived redundancy. Some language users see *cocoa* and *chocolate* as different entities (the latter being a fermented form of the former) while others see them as identical or are not aware of exactly what the difference is.

None of this necessary threatens Hoey's claims but it calls to task the level of detail in the analysis. That both senses occur as objects of *give* might suggest that primings of two senses can be shared, jeopardising the validity of the claim, but the closer we examine, the more disparities turn up, thus reinstating it. Hoey (personal communication, 2008) writes his case may have been overstated.

Conclusion

So far, this thesis has alternated theoretical chapters with in-depth examinations of specific words, the monoseme *crawl* in chapter two and the polyseme *flavour* here. The intent of the earlier case-study was to illuminate a larger issue with the goal of making generalisable claims regarding monosemy, that many words whose status of polysemy is assumed are in fact monosemic if pragmatics are factored out. The survey that forms the current chapter, however, makes no such claim. With one exception, the behaviours noted of *flavour* are observations of this word only and not of other lexical metaphors, and certainly not of other polysemes.

That one exception regards those elements common to both the literal and metaphoric senses of lexical metaphors. It seems that metaphoric meanings are primed to import certain elements of the literal source sense, that this is a necessary step in sense formation. A meaning cannot be metaphoric (in the single-lexeme sense we have been working with) without borrowing some components from the literal sense's subcategorisation. Exactly which elements are ported over is not something I am prepared to declare, partly because lexical metaphor is a rarer category than vicariant polysemy or homonymy, and within this category, nouns are only one type, but necessary for a comparison with *flavour*. It can, however, be safely said that those elements that are common to both senses will exhibit a degree of vagueness—that is,

they cannot be bound to the specific domain of the literal sense but must be able to generalise to the wider spectrum of metaphoric uses.

Chapter five: From theory to application

With the previous sections focusing on polysemy as a theoretical issue forming a foundation for us to build upon, there are now several directions in which the remainder of this thesis could be structured. At the most rudimentary level is the issue of whether to focus on the direct teaching of polysemes or to arm learners with strategies to apply when encountering them. It is because this issue is primary and because, as we shall see, each approach complements the other, that it would be a disservice to the students this thesis seeks to help to focus on one approach at the expense of the other. Both, that is, are considered valid. The remainder of this thesis, then, will be divided into two unequal parts. The first concentrates on the explicit teaching of polyvalent¹⁰ words, addressing such subtopics as how many homonyms exist, which homonyms and polysemes are the most useful to learners at any given stage of development, whether polysemous meanings should be taught together or delayed, to what extent Lakoff's system of cognitive metaphor presents a teachable paradigm, etc. The second half focuses on whether learners can pinpoint polysemy as the source of discord when encountering known word forms using unknown meanings, assesses their ability to guess the meaning when they do so, what kinds of polysemous relations exist from the learners' point of view and which of these are teachable, and what kind of mnemonics learners can employ to retain the new meaning.

This chapter attempts to bridge what has preceded it, the theoretical, with what succeeds it, the applied. If it seems to jump around a bit, this is because a few loose ends need addressing before declaring our foundation complete. It will review the literature of polysemy as a second language pedagogical issue, then examine a model of second language vocabulary acquisition proposed by Meara (1997) and finally mould

¹⁰ The terms *polyvalent* and *polyvalency*, after Panman (1982), are used here to collect polysemy, pure (i.e., diachronic) homonymy, cognitive (synchronic) homonymy, homography and homophony.

all that has been written thus far into clear guidelines and principles regarding the teaching and learning of polysemes and homonyms.

5.1 Polysemy in teacher resource texts

In the first chapter, we briefly considered three introductory texts on lexicography for their treatment of polysemy and found it wanting. Sadly, the same approach yields much the same results when we examine polysemy as a second language pedagogy concern. Limiting our scope to books devoted entirely to the teaching of second language vocabulary, whether written to discuss theoretical matters or to present techniques (i.e., 'recipe books'), we examine those written or edited by Morgan and Rinvulcri (1986), McCarthy (1990), Hatch and Brown (1995), Schmitt and McCarthy (1997), Nation (1990, 2000) and Read (2000), all of which have the word *vocabulary* in their title.

Morgan and Rinvulcri (1986)'s text is entitled *Vocabulary* and is part of Oxford's *Resource Books for Teachers* series. It describes 101 activities, but not one is concerned with learning additional meaning. Moreover, the activities, including a whole section devoted to dictionary use, downright ignore the fact that other meanings exist. The implication here is that there is a 1:1 correlation between form and meaning, that although we are given many techniques to do so, the goal is mostly to associate a word form with that one meaning. (To be fair, this book is otherwise a very useful one; it diminishes because we view it for something it didn't intend to present.)

McCarthy (1990), also entitled simply *Vocabulary*, fares better. Not a recipe book of pre-planned classroom activities but a user-friendly text that, like others in its series, raises issues but lets the instructor form her own opinion, certainly an understandable approach for a book not devoted to polysemy. It raises the distinction

between polysemy and homonymy, suggests that etymology can sometimes resolve the issue but also confuse matters, mentions monosemy, implies that there may be a finite number of polysemous senses, and asks how we can know when a learner has learned a polysemous word—a question addressed in the following section of this chapter. Also examined are the notions of central and peripheral meanings and Kellerman's (1986) research on learners' expectations of peripheral meanings. Generally, learners do not expect that non-prototypical uses of L1 words will translate to the L2 (even when they can do so: see also Kellerman (1985), not mentioned by McCarthy).

Raising the issue of polysemy while stopping short of suggesting what to do about it is found in another teacher-training text: *Vocabulary, Semantics and Language Education* by Hatch and Brown (1995). Again, meanings are thought of as core-like or moving away from the core.

In Schmidt and McCarthy (1997), Nagy discusses Ruhl and the notion that what passes for polysemy can be attributed to reference specification, though he does so largely to counter him. He cites examples such as *dog*, *cat*, *fox* and *viper* that have meanings that depend on metaphor, that *canine* and *dog* do not share the same range of meaning, from which he draws the following conclusion: *Hence, the kind of multiplicity of meaning represented by such contextualized metaphors needs to be represented in the mental lexicon* (1997:68). If the word *mental* weren't in there, the sentence could be taken as a justification of inclusion of metaphoric senses in the dictionary. (Ruhl, remember, offers no suggestions on lexicographical practices.) However, as it is the *mental* lexicon being discussed here, I find it odd that the inclusion of such senses is being justified, almost prescribed, with the words *needs to be*. But it's no stretch, and probably not a controversial claim anyway, to extract from this that different people construct their mental lexicons differently; we've already been using the terms lumpers

and splitters to describe two contrasting ways in which we do so. That said, however, I'm not convinced the animal examples he gives are ones that Ruhl would disagree with in the first place. His case is constructed on words with highly abstract meanings, such as the verb *bear*, rather than words that are 'natural kinds.' As with *flavour*, the distinction between literal and metaphoric *dogs* is quite clear-cut and does not represent a case where the real meaning patterns out from the combined uses.

As mentioned in chapter three, Nation (1990, 2001) introduces the concept of 'underlying meaning' and reports on the work of Visser (1989), which finally presents a pedagogical procedure for teaching polysemes. Students, working in groups, are presented with two meanings of a polyseme in context and are given a simple task for each meaning. After this, they are asked to state what features are common to both senses. For example, for the word *emerge*, they are given, in the first column:

To emerge means to come out of an enclosed space such as a room or vehicle or from a position where you could not be seen.

Describe how a chicken is able to emerge from its shell.

In the second column:

If you emerge from a particular state of mind or of existence, such as sleep, you change from one state to another, for example by waking from sleep.

Describe what can happen if you emerge from a bad dream.

And in the third:

Say what the similar features/ideas are in columns 1 and 2.

While I do not necessarily see these two uses as different senses, any criticism on these grounds is negated by the result which, after all, seeks to merge them. It encourages deep processing and flouts the prevalent assumption that matching a word form with its

commonest meaning is a significant enough burden for any learner. Visser presents this technique as a way of introducing new vocabulary—the multiple meanings are learned from the beginning. The question of whether this is more effective than delayed teaching is one I address below

Finally, Read (2000) tackles L2 vocabulary acquisition from a different perspective, that of assessment. He writes of quantity (or breadth) of vocabulary knowledge, the scope or number of words known, and quality (or depth) of knowledge, including collocations, polysemic senses, etc. Tests of the former are more commonly written about because they provide a more representative snapshot of a learner's vocabulary level than an in-depth assessment of a few words. He reports an examination conducted by Dolch and Leeds on various vocabulary test batteries, they found that only the commonest meaning of each word was tested. This study was on tests given to American school children (and hence L1) and furthermore was done in 1953, though I'm not convinced that the situation for L2 learners 50+ years later is much different. Noting this criticism, it is surprising that the book does not have much further to say on the assessment of additional polysemous senses. Read (2005) has since developed a multiple-choice test in which words are presented in paragraph-length contexts with a definition/paraphrase along with distractor definitions and the students are asked to choose which sense is the appropriate one for the given context.

A survey of books written for ESL and EFL instructors with *vocabulary* in the title can hardly pretend to be a full account of the subject, but I am leery about being comprehensive when a snapshot will suffice. A more exhaustive account detailing every journal mention of the relevant terms would indeed be exhausting. Having spent some years researching the topic, I am satisfied that this snapshot provides the same conclusions: there is little written on the teaching of polysemy to L2 learners, mentions

of the concept are usually made without pedagogical suggestions, and the assumptions of the individual researcher trump theoretical foundation¹¹. Both the lack of attention the topic gets and what little mention it does garner speaks to the unspoken assumption that once the word form is matched to the commonest meaning, the learning is complete; anything further is the learner's concern, done on her own time, external to the language curriculum. This thesis attempts to challenge this assumption, though it should be obvious by now that I wish to reverse it rather than just examine it.

5.2 Meara's model of second language vocabulary acquisition

Elsewhere in the Schmitt and McCarthy book mentioned above, Meara (1997) proposes a model of vocabulary acquisition. In brief, the mental lexicon is a network; learning a word is a matter of connecting the newly encountered word to one, or more, already known. This could be a first language word or a second language one. Links may be one-way or, ideally, two-way. Words connected with one-way links are those that exist in our passive vocabulary—words we know when we hear them but not necessarily available for productive use. Both native speakers and L2 learners have such words. Further, the number of connections varies: the more connections, the more well-known the word is.

It is the remarkable simplicity of the model that deflects significant criticism. The counterargument, that the lexicon does not resemble a network, is the more untenable position. The appeal Meara's model has for polysemy is the ease in which it can be developed to accommodate it.

Applying this to the current research encompasses four permutations. One dimension entails whether one meaning is already known or not, and the other involves

¹¹ My embracing of Ruhl is less a matter of alignment, though I don't deny beginning at a concordant position, and more one of gravitating toward the most developed foundation.

polysemy and clearly-related senses or homonymy, either pure or cognitive. These combine in four ways:

- Homonym, all meanings unknown
- Homonym, one (or more) meaning known
- Polyseme, all meanings unknown
- Polyseme, one (or more) meaning known

The word *polysemy* here refers to cases where the meanings are pretty clearly related on semantic and synchronic grounds, at least to those familiar with them; *homonym* includes both pure homonymy (the meanings are completely unrelated) and cognitive homonymy (the meanings have drifted apart so that they are no longer connected in a meaningful way, resulting in idiom-like polysemes). In the first and third of these permutations, it is a matter of learning a new word form and forming multiple links, the difference between the two being a matter of how they're linked. With polysemes, the connections are to related concepts while those of homonyms run in quite different directions. In many instances (usually but not necessarily homonyms), expecting these to be learnt is placing considerable cognitive demands upon the learner, although in some cases the duplicity or multiplicity of meanings can serve to reinforce each other. A case-by-case basis is required here; young children being introduced to the word *school* for the first time are not very likely to be ready to know the polysemic sense seen in *school of thought* or the homonymic meaning in *school of fish*, but older students learning the word *nucleus* might find the molecular meaning reinforced by example like *the nucleus of a good relationship*.

In the second and fourth permutations, the word form is already known and established in the network, thus making at least half of the work already done. When

polysemic senses are introduced, the effect is perhaps not unlike our examination of *crawl* in chapter two: the real meaning patterns out. We take what is known and, by re-analysing it, open it up.

Linking known word forms to homonymic meanings is a different story. A teacher or textbook introducing the word *chest* with its meaning of 'large, heavy box for storing valuable things' is not likely to make mention of the 'upper torso' sense. These are cognitive homonyms; the metaphor connecting them is dead, and native speakers probably learn both meanings before we're cognitively advanced enough to see how they're related. The older student, however, is probably more aware of the formal identity than we are. What we have here, but fail to recognise, is, in theoretical terms, a perfect opportunity to help link a new meaning to known information, or, in practical terms, a very useful mnemonic. Even in pure homonymy where the meanings are not related, such as *ring* 'sound of a bell' and 'band (i.e., around a finger)' can be connected to each other mnemonically in a variation of the keyword method, discussed below.

None of these four permutations is more ideal than the others. All four exist in the mental lexicons of any L2 learner, from the launched beginner to the advanced, and even in native speakers as a browse of the *OED* will confirm. The question of whether it is better to teach all meanings at once or to introduce additional meanings later is somewhat trivialised by the fact that learners bring to the table this mixed bag of half-learnt and unknown words.

This thesis takes Meara's model as a starting point. The goal here is to help students link words new words or add new links to old ones. In many cases, especially when older students are involved, the word form is already known as is the concept; the only thing missing are the links between them. All learners are familiar with the concept of being hungry from not eating. Most will also know the word *fast* with its meaning of

'quick.' All we need do is help them make a new link.

5.3 Forging a pedagogical approach

Those texts above that address the issue of polysemy can, along with those discussed in previous chapters, be mediated and synthesised to show the approach outlined in this thesis. Let's return first to the question asked in McCarthy (1990:24): 'when can a learner be said to *know* a polysemous item as as “catch”?' (italics McCarthy's) Answering this question raises several points, some key to our approach. First there is the assumption that *catch* is polysemous, supported by the claim that it has 'several related but distinct senses in English' shown by the direct objects *a bus*, *a cold*, *a butterfly*, *someone's remarks* and *someone stealing money*. My readers will, by now, no doubt predict that I see this as monosemic, and I will not disappoint: at an abstract level, a meaning patterns out, one we cannot paraphrase for all uses with any other word (betraying that peculiar assumption that the lexicon should be so perfectly redundant), the differences being attributable to the direct objects, and hence, not to *catch* itself. I raise, again, the question: if word meaning is abstract knowledge to which we do have access only via the word form can it be taught?

The question may be even more complex than it appears at first sight. At the early stages of EFL and some ESL learning situations, L2 words are inevitably learned as L1 translations—or rather, one meaning of an L2 polyseme or homonym is learned by recourse to its closest L1 equivalent. Any other meanings encountered in early stages will most likely be learned as translations of different L1 words. This could conceivably interfere with the 'patterning out' of the word's related meanings though, of course, we don't have direct access to what takes place cognitively in the learners' minds.

What I propose, then, is that the learning of polysemic senses can, when

accompanied by the proper analysis, be an important tool to help learners make the step from the L1-dependency to a more autonomous L2 lexicon. New meanings could, at least in theory, be learned mechanically via their L2 translation equivalents or the new usages could be analysed in relation to the known L1 meaning. The terms I use are deliberate: one entails 'new meanings' and the other 'new usages.' New meanings of L2 polysemes being tacked on via different L1 words will always be discrete, presumably more so than they are for native speakers. In the case of *catch*, which has meanings that, for McCarthy, are 'clearly related' or uses that, for me, are really one and the same, a commonality (in which a known word is broadened to include a more expansive common ground) is ignored in favour of a complexity (in which one L2 word is linked to multiple, discrete L1 words); the learning burden is increased, not eased, by recourse to the L1 over the L2, encouraging the learner to construct the L2 lexicon in this unproductive, mechanical manner. The deep processing of polysemous senses, then, may be a push for learners to construct dedicated second language mental networks rather than ones parasitic upon their L1 lexicons. Visser's (1989) recommendation of getting learners to process the underlying meaning is, I believe, a significant step in accomplishing this as the two (or more) uses are learned in relationship to each rather than to L1 words.

I speak here of idealised (if less than ideal) cases but of course do not wish to paint these extremes as an invariable reality. At a minimum, we can assume that some learners will analyse some of the cases some of the time, and that some learners, the ones who seem to grasp language more quickly, do so more often. What needs to be done is to help learners to analyse related senses.

Timing is, I should think, crucial here—too early, and we may overload the cognitive demands of this restructuring, burdening a fledgling system still needing to be

fortified on its own terms with an untimely puberty of sorts. It is for this reason that the dedicated teaching of polysemy is something best done at the intermediate stage at least (dedicated teaching as opposed to chance encounters—most learners will probably be introduced to certain homophones like the noun *can* and the modal verb *can* at an earlier stage.)

A book for teachers not discussed above is Lewis (1997). Again, no direct mention is made of polysemy or homonymy, but there are a couple of activities I would like to extract for their relevance here. Although no theoretical predisposition is spelled out regarding polysemy or monosemy, his attempts to show the variety of collocations associated with a word is not so different from the methodology employed in chapter two here to show monosemy. A matching activity asks learners to choose from a list all the words that collocate with *pay*, *make* and *give*. The words that collocate with *make*, for example, include *money*, *deal* and *lunch*, instances which are accounted for by three separate definitions in the *COBUILD Advanced Learners' Dictionary*. A similar exercise asks students to read a word followed by several collocates and one randomly-placed distractor. They are asked to identify the false collocate by crossing it out.

1. BRIGHT idea green smell child day room

Again, we can expect most dictionaries to enumerate the adjective in *bright idea* and *bright green* separately, and indeed they may well translate differently in learners' L1. Thus what is constructed here is the monosemy of the word, or at least its root meaning, the reanalysis yielding the cognitive merging of several discrete elements into one continuous whole.

There is, at least depending on the learner's experience, a difference here between teaching different uses of one word and expecting them to be able to complete such an activity. In the former situation, the instructor teaches the uses to the learner; in

the latter, it is assumed that the student already knows the uses but hasn't connected the dots. Both cases are perhaps overly ideal; for any given word we may not know how much knowledge the learner brings already, but we can always assume that learners will have various starting points for various words, that it cannot always be exactly one of these situations.

The learning of homonymic meanings is, of course, a different matter as there is no analysable relationship that will pattern out into networks or spectra of meaning. However, the formal identity of the two words is still a commonality, and an economy of language can be an economy of learning, the beginning of a mnemonic relationship, to mangle Bogart's words. For example, a learner familiar with the 'educational institution' meaning of *school* can easily learn the homonymic 'group of fish' meaning by connecting the two, seeing a group of fish sitting in desks, perhaps headed by a mortarboard-donning teacher fish, etc. Of course, since native speakers (myself included, prior to beginning this line of research) might assume these two uses to be related, this is an overly simple example, so a few more cases will be presented. A connection between the kind of *ray* that swims the ocean and a *ray* of light that beams from the sun (or from a ray gun) can be forged by imagining a water ray being shot from a gun or streaming from the sun. Two meanings of *mint* can be connected by imagining peppermint-flavoured coins. The point is, there is a commonality here, a shared trait—the form—that provides a starting point. Learners, in these cases, do not have to learn the meaning and the form from scratch as they might with completely new words; one element is known already and can be capitalised upon.

I'm not prepared to recommend that the teaching of all polysemic senses of words like *catch* should be done at once, largely because most of the students I work with are well familiar with such words (and those that aren't certainly aren't ready for

them), but I should think that when introducing new, related senses or usages that as many be introduced for which a pattern can be seen and which is appropriate to their age level. If, for example, a student knew only the use of *catch* related to catching a ball, I would certainly show them the range of meanings that McCarthy presents above on the basis of the more examples, the clearer the pattern. I would, though, take age into account and probably not teach *catch someone's remarks* to young children. Of course there is a difference between demonstrating and teaching. Showing the range of usages so that a pattern can be deduced is quite distinct from expecting the learner to remember each and every one and demonstrate mastery of on a test.

5.3.1 What can we abstract from all this?

We stand now at a point where a summary of the entire thesis will help solidify what has been discussed so far and direct where we go from here.

- Dictionaries do not represent the mental lexicon in structure nor the property of words as they are communally determined; their division of words into discrete, countable units of meaning do not necessarily reflect the actuality of words but an externally-applied artificial overlay, not unlike transparencies placed over maps to show socially-determined boundaries within landmasses.
- The illusion of multiple meanings can frequently be explained by pragmatics or syntax rather than semantics, in which case we have monosemy.
- When the difference is one of semantics, we have either polysemy or homonymy.
- Diachrony is an unsuitable criterion for determining polysemy and homonymy; the difference is ultimately one of cognitive distance.
- Homographs are words with the same written form but contrasting oral forms;

homophones are words that sound alike but are rendered differently in writing.

- As semantic entities, established polysemic senses (that is, ignoring nonce and creative uses) are of two varieties: lexical metaphor, when the relationship between two senses is clearly of a literal/metaphoric nature, and vicariant polysemy, where senses are clearly related but have become independent.
- The establishment of new senses has effects beyond the semantic. The senses of vicariant polysemes avoid each other's patterns (collocations, etc.) while those of lexical metaphors tend to share some but not all.
- In the classroom, learners are generally taught only the word form and its commonest meaning.
- Additional meanings are left to chance encounters; there is no system in place for teaching these.
- Learners are generally not tested on anything other than the commonest meaning.
- When learners do encounter these words, they will attempt to use the known meaning.
- When that fails, they may not necessarily realise the applied meaning is wrong; they may well suspect the problem is elsewhere (another word, grammar, or that the construction is an idiom, etc.). The known meaning is, after all, a known element so there is little motivation to look up a word that is already known.
- What may happen is that the sentence/passage is left un-understood, the source of confusion never pinpointed.
- When consulting their dictionaries for encoding purposes, many learners are not well-equipped for knowing which L2 word to use (when several are given) unless the dictionary's example sentences makes this clear.

- Additional meanings could be learned by different L1 equivalents or by relation to the L2 word; for the latter, the relationship would have to be clear.
- Even when multiple meanings of words are known, students are often confused about which meaning to apply, at least momentarily.
- Homonymic meanings are generally taught with no acknowledgement of the already known word, probably because the two words are so discrete in the minds of native speakers, even where reference to the known word could serve as a foundation to which to link the new meaning.

Conclusion

To label this section 'Conclusion' is misleading because the only thing being concluded is the beginning. What I've presented so far is a summary of the literature on the subject of polysemy and related topics and an exposition of my own beliefs on the matter. Rather than providing a litany of article and book titles with a few cursory comments to demonstrate I've read them, I've instead attempted to analyse a few, most notably Ruhl and Hoey. As such, there are some names that readers may be expecting whom I have mentioned in passing if at all such as Pustejovsky, Lakoff¹² and Rosch¹³. Taken as our starting point, the literature on the subject is a spotty nebula and my goal here has been to connect a line between those that form the straightest path to our goal of second language pedagogy, stopping at a few key points along the way, as connecting

12 Of these omissions, the biggest disservice is to Lakoff. Pustejovsky's generative formalism, while at times quite interesting, does not, to me, represent a cognitive reality. That he is a professor in a computer science department, coupled with the observation that his work and that of his followers has had an impact on computational linguistics and artificial intelligence, suggests that modelling human cognition was never an intended goal, and I would therefore hope my slighting of this branch of research, which accounts for perhaps the only concentrated cluster of research into polysemy in recent years apart from the research into cognitive metaphor spearheaded by Lakoff, is less one of dispute than of congruity.

13 Prototype theory (Rosch 1975) is useful for understanding polysemy but the notion of prototypical meanings is useful only to those who know all the meanings (that is, it is COIK—Clear Only If Known); its use to the L2 learner is limited to some after-the-fact restructuring and tidying.

them all would be an aimless journey full of random turns and sudden jumps, leaving in our wake barely visited rest areas.

We turn next to what students may already know about polysemy and accounts of which words have been particularly troublesome for them.

Part 2: Pedagogical aspects of polysemy

Chapter six: Introduction to Part II: Forging a pedagogy.

Though brief, this chapter takes a close look at how a learner processes polysemy and homonymy when decoding a text. The learner's problems are cast in relief, thus lending shape to the remainder of this thesis which attempts to apply the theoretical issues discussed thus far.

6.1 The learner's dilemma

When encountering a sentence in which all the words are known but which still fails to make sense, the learner must first ask whether one of the words may have an unknown meaning, pinpoint the candidate word(s), and then decide whether the meaning might be related to a known meaning, and therefore potentially guessable, or not. It is this decision that warrants the discussion of homonymy, but the lack of guessability that allows brevity.

As a pedagogical subject, we can look at the polysemy/homonymy distinction metaphorically. Once a learner has identified a word as possibly having another, unknown meaning, polysemy represents an elastic band that could, conceivably, be stretched to include a reasonably correct meaning by guessing, but if, however, the employed meaning is homonymic to the known one, then we have a brick wall; no amount of guessing will lead the learner from, for example, the 'tool for weighing' meaning of *scale* to the 'reptile skin' meaning. Contextual clues may lead to the right answer, but there are no contextual clues whether the word is an elastic band or a brick wall; the only way to declare such a word homonymic, without consulting an external authority, is to exhaust the possibilities of polysemy—that is, to stretch the known meaning of the word form until arriving at a reading that makes sense (which,

understandably, learners never seem very confident of) and if this isn't possible, then the word is the brick wall of homonymy. In other words it is a choice based on trial-and-error guessing whether the new meaning is even going to be guessable. Thus the applied aspect of polysemy runs contrary to the theoretical: while we had earlier espoused the view of assuming a single meaning until multiplicity has been demonstrated, the learner in polysemy encounters, on the other hand, has the almost opposite stance of starting with the wide multiplicity of polysemy before whittling the choices down to the narrower plurality of homonymy.

To back up a bit and paint the full picture, the entire process is as follows. Reading is the assumed activity here. First the learner encounters a sentence that is incomprehensible despite all the words being known¹⁴. Second, she decides whether to deal with it or keep on reading. This choice can be re-evaluated and changed at any point, but we'll assume she decides to tackle the problem. Third, she rules out syntax as the source of confusion and decides the problem is lexical, this being done by rechecking the grammar and deciding there is no unknown syntactical pattern. Probably not all learners do this step. Fourth, she realises that one of the words may have an additional meaning. As reported earlier, Laufer (1997) warns that this very rarely happens; students stick to the meaning they know. This is, of course, the very phenomenon our teaching aims to improve. Furthermore, there could be other factors that render such a sentence difficult to comprehend (misreadings, faulty analyses of earlier discourse, etc.). Fifth, the learner must now decide whether the meaning is related or not, which is done by testing potential 'stretches' of the known meaning—that is, guessing how, and if, the encountered usage might be related to the known meaning. From here, three possible outcomes manifest.

¹⁴ This is, admittedly, oversimplistic. An unknown meaning of a known polyseme or homonym can, of course, occur in a sentence in which another word is completely unknown—a far messier situation.

1. One of the guessed meanings works, in which case the interaction with the text continues. The continuation is probably cautiously done: the learner doesn't *know* the choice is correct but is testing the theory. Further discourse will either prove the word inconsequential to the current text (it doesn't occur again so it's not important) or provide further opportunities to test the theory (supporting it, refuting it or perhaps neither). In other words, even the correct guess of an ambiguous word doesn't dispel the ambiguity. However if the correct guess is continually reinforced by the discourse, the new sense could conceivably be acquired.
2. One of the guesses 'kind of' works. This isn't much different than the previous scenario but is probably more common. The ambiguity is greater, as is the need to consult a dictionary or some other authority.
3. None of the proposed meanings works. Here the word form represents either homonymy or a distantly-related polysemic sense (the journalistic sense of *beat* when only the common verbal meanings are known). Of course there's always the possibility that the learner just didn't stretch the word in the right direction and didn't guess correctly but conceivably could have. In any event, the learner is returned to a previous choice: whether to stop and consult the dictionary or to continue, hoping either that the remainder of the discourse is not contingent on the unknown word or that it will become clear.

This is a bleak picture (that ignores certain aspects such as 'a-ha!' moments where the new meaning jumps out at the learner, cases where the unknown meaning has been

encountered but not learnt before thus potentially supplying additional clues, words that are similarly polysemous in the learner's L1, etc.), aimed to show the number of choices a learner has to make and the diminishment of confidence with each one.

The beginning of this thesis promised to discuss strategies learners can use for guessing unknown meanings. At this point we may begin to wonder if arming learners with such strategies is all that worthwhile. Perhaps we should merely introduce the concepts of polysemy and homonymy to increase their awareness of known-words-with-unknown-meanings so they will consult their dictionaries when they otherwise might not have. Raising their awareness of how incomplete their knowledge is, and aiming it in the right direction, is, in fact, a considerable learning accomplishment. The whole problem of polysemy and homonymy may, in fact, stem from the way words are first presented (L2 word = L1 equivalent)—that is, a lack of understanding how words 'work,'—and a lack of dictionary skills. Strategies for guessing polysemic senses are, as we shall see, a valid aid to the learner in decoding; after all, the sooner they can rule out polysemy, the better can declare homonymy.

This brief account, then, raises all the issues which the remainder of this thesis addresses. Chapter seven examines specific techniques for raising a learner's awareness of homonymy and polysemy so that the problem of unknown, additional meanings can, at the very least, be a suspected cause of confusion, and advocates not just teaching dictionary skills but suggests specific skills related to polysemy and homonymy. Two subsequent chapters tackle homonymy, first arguing that the burden of learning homonymic meanings be reapportioned to educators rather than the students and then offering practical information on how to present them. Finally we will examine the 'guessability' of polysemic senses and offer some teachable guidelines.

Chapter seven: Polysemy encounters and the dictionary

*Awareness requires a rupture with the world we take for granted;
then old categories of experience are called into question and revised.*
Shoshana Zuboff (1988)

Raising awareness of the concepts of related and unrelated meanings is the most rudimentary step in the chain of decoding polysemy encounters. Without it, learners will not suspect a known word form of having an unknown meaning, and without this, any further steps in the flowchart are not reached and the blame for not understanding the sentence is mis-allocated, perhaps onto the syntax or onto learners themselves.

7.1 Awareness raising

I am sometimes struck by the fact that learners are well aware of polysemy and homonymy in their first language but generally fail to find candidacy for it during problematic junctures in their second. To be sure, they know it exists, and even many low proficiency learners can even name a few L2 homonyms, but the ability to suspect lexical polyvalence, as Laufer has claimed, is often surprisingly unavailable.

In the various pilot studies and other work I've done with students in preparing this research, when the topic of polysemy or homonymy did not need to be masked, I occasionally needed to activate the subjects' knowledge fairly quickly, and this could be accomplished by following a simple process that can be applied to classroom treatments of the topic. The first step is to provide examples of each in their first language to activate their existing awareness and make them aware of the contrast. The next step is to supply some in English where they can safely be assumed to know both meanings. Such homonyms include *can* the modal verb and the common noun denoting a small aluminium container, *bowl* the dish and the leisure activity, and *miss* the title and the

verb (the 'I miss you' being more well-known than the 'I missed' sense in my experience). For polysemes there are *light* denoting the opposites of *heavy* and *dark* (etymologically a homonym but its meanings are cognitively related for most users), the two senses of *dream* associated with sleeping and the future, and *speaker* 'a person who speaks' and the clipped form of *loudspeaker*. The students can then be asked to supply their own if they are not already doing so, though in my experience they are volunteering some at this point. When known, some words that are similarly polysemous in both languages can be presented. (As rare as this would be expected to be, it does happen. The Korean words for *flavour* (*of the book*) and *loud* (*ties*) can both be used in the same metaphoric way as the English equivalents.)

Sentences using high frequency polyvalent words employing low frequency meanings, contextualised in such a way that the common, presumably known, meaning doesn't make sense, can then be given to alert the learners of the importance of knowing the full range of meanings. Examples of this include:

- [1] The soldier loaded the new magazine into his gun.
- [2] After a long battle, the army finally captured the battery.
- [3] They developed a new culture to make yoghurt.

This helps to activate an awareness that there are unknown aspects of known elements, that there is more to be learnt.

As with the highlighting of any learning problem, there is a slight problem here, which is that polyvalence has been primed, and thus it is not especially hard for learners to suspect it in such cases, and this may not accurately represent actual encounters where any number of reasons may be the source of confusion. But the goal here is to provide a kind of scaffolding, an increased awareness of *one* of those problems which will then be available to them.

It has been my experience that there is a blinkering effect at play here. If—but

only if—polyvalence is suspected, it is generally pretty clear which word it is likely to be. It's not a matter of every word in a sentence suggesting itself as a potential polyseme. Even in cases where multiple candidates are possible (perhaps *yoghurt* in [3] above), the learner is not overwhelmed with choices, and it's hard to imagine a naturally-occurring sentence (as opposed to one constructed to confuse) containing as many as three or even more.

This structure—raising first an awareness of what they know and then of what they don't—can be followed in the classroom to introduce the topic of polyvalence. The remainder of this chapter examines how, when learners do recognise the need to stop and consult a dictionary, they can better do so.

7.2 Polyvalence and learner use of the dictionary

The use of dictionaries by language learners is a controversial issue among their teachers. Some see it as a support that students need to be weaned off while others see it as a tool that it would be foolhardy to rob the learner of. I've been quite vocal about certain problems within the dictionary, but have only implicitly weighed in on the debate. If guessing meanings from context were an infallible, teachable skill then there would be little use for dictionaries, but, this not being the case, I believe there are times when a dictionary, replete with all its problems, is the best tool available to the learner. We've seen already that homonyms are a source of interference, that for a learner familiar only with the 'young student' meaning of *pupil* to guess the 'centre part of the eye' meaning will need a preponderance of contextual clues to uproot her belief that the word is already a known element of the sentence and further clues to lead her to the correct meaning. It is cases like this where the dictionary can aid the perplexed learner. We still need that spark, that 'Hey, I wonder if...' moment when she questions her

certainty and suspects an additional meaning, but given that, the dictionary becomes a valuable source of information, to confirm her guess or else to supply the correct answer when a guess is wrong or not forthcoming. The biggest problem lies not in *if* but in *how* the dictionary is used.

Dictionary consulting essentially takes one of two forms: it is consulted quickly for an immediate communication need or it may be more leisurely consulted. In the latter, the user can spend more time with the word and can apply some of the techniques detailed below. But for many learners, the former in-a-pinch and on-the-fly use, summarises the sole function of the dictionary. This chapter argues not against such uses but for expanding the user's repertoire.

I argued earlier that the purpose of dictionaries is ambiguous or at least multifaceted. At an ideal, perhaps prototypical, level they exist to help users learn the meanings of unknown words, but there is more to them than this. Dictionaries, some more than others, record and catalogue language at the word level. But this diversity of function has resulted in a book, the learner variety somewhat excepted, marketed for no one particular audience; any dictionary will contain information not needed by every user. (Who, besides linguists and logophiles, uses etymologies or even knows how to decipher them?) This isn't meant as a criticism—in no way am I implying that dictionaries should remove all information not relevant to a specific target audience—but is intended simply to point out that the dictionary is a complex tool that many users are not trained to mine the full benefits of.

This problem is more serious than just ignoring a word's etymology or frequency rating. In a case study reported on in the next chapter, one subject, when presented with a list of familiar words with rare, homonymic meanings that she didn't know, was surprised that so many words she thought she knew well were only half-learnt. After

looking them up in the dictionary as part of the task, she replied, 'I only knew the first meaning. I always read the first meaning, then stop.' This is probably an oversimplification of the situation (most of the words presented were high frequency word forms learnt, I strongly suspect, quite early on, via her teachers and early textbooks rather than from a dictionary), but her assessment is one I've heard repeatedly over the past several years of conducting this research, done primarily in Korea.

My recollection of my own dictionary training in school is like this. We were presented with a list of unrelated words and had to write *F*, *M* or *B* to indicate whether we would initially turn to the front, middle or back of the dictionary to hone in on the word. Finding words was facilitated with guide words, the words in the upper margin indicating the first and last entry on a page. We were also taught that the dictionary gave us the spelling, syllabification¹⁵, meaning, and pronunciation of any word and that there would usually be an example sentence. We were, I believe, made aware of run-on words (the *-ly* form, for example, being tacked on to root headword rather than being presented as a separate entry). We were not taught to read etymologies which is, of course, understandable, not least because our dictionaries didn't include them, nor was there training in regard to dialectal uses, archaic meanings, etc. We were not instructed in how polysemic senses were sequenced, nor could we have been when there is no uniform method employed. Again, this is all justifiable, but perhaps we can conclude that what schoolchildren are taught to use are, in fact, schoolchildren's dictionaries. We were trained, mostly by hands-on practice, to use the dictionary but only to extract the knowledge required. The dictionary is a resource, something momentarily, and infrequently, consulted.

It can be argued that that is enough. The average native speaker doesn't need the

¹⁵ Landau (2001) argues against the continued presentation of syllabification in modern dictionaries, it being a holdover from days of typeset documents. He also questions why any dictionary would show the syllabification of words such as **an.y** which should never be divided in the first place.

more advanced features of a dictionary, nor need to spend 'quality time' with the book, any more than most computer users need to know each and every feature of a word processor or spreadsheet program. But the L2 learner frequently gets lost in the shuffle. Some are taught bilingual dictionary skills in foreign language environments, particularly when the L1 and L2 are completely different scripts, but this training seldom extends beyond the children's dictionary set of skills. It is the L2 learner, not the L1-speaking adult, who is more severely constrained by having only the most rudimentary working knowledge of the dictionary. Frankenberg-Garcia (2005), in a study involving fourth-year translation majors consulting various translation resources (having at their disposal monolingual and bilingual dictionaries, monolingual and bilingual corpora, a collocation dictionary, internet search engines and still other tools), observes that only rarely did they notice that 'a look-up hadn't worked, and when they did, [the subjects] were not very persistent at moving back and forth between different resources to find answers to the problems that remained unsolved. More often than not, they simply gave up searching.'

To be clear, there are two different things here: one is advanced dictionary features and the other is advanced dictionary skills. The former entails elements of the dictionary that learners may ignore because they weren't taught about them, such as a word's frequency rating, while the latter involves knowledge of how to use the dictionary, including not just the advanced features but any aspect of use beyond the rudimentary skills discussed above. The lesser-used features are a rather small set while dictionary skills are far more encompassing.

In *Dictionaries* (1998), in Oxford's *Resource Books for Teachers* series, Wright offers 98 activities plus variations involving L2 students using dictionaries in various ways including increasing familiarity with syntactic, register and dialectal information

as well as phonetic symbols, working with affixes and improving spelling skills, etc. A few activities involve polysemes and homonyms.

One such activity entails a worksheet that is divided in two. In the first half, students are presented with eight sentences, each of which contains an underlined word that they are instructed to look up. Instructions ask them which meaning fits the given uses. In the second part, they are presented with eight new sentences, each with a blank which they are asked to fill using one of the underlined words from the section above. The correct word, of course, uses a different meaning than used previously. For example, the first part has a sentence 'I was in bed with a cold for two days' while the second part has, not in the same sequence, 'The coffee has gone _____. Could I have another?' No distinction is made between polysemes and homonyms. (Or rather, Wright considers any word with multiple meanings a homonym. Generally only theoretical linguists or lexicologists distinguish polysemy and homonymy.)

Another activity, called the 'Multi-meaning bluff,' asks students, put into groups of four, to look up four given polyvalent words (*arm*, *bank*, *deal* and *leave* in one example) and look them up, finding at least two different meanings for each and then make up one 'wholly wrong' definition for each. Two people in the group do this while the other two do the same with four other words. When this is finished, the two students read the definitions for each word, one at a time, while the other two are to guess which word is the invented one.

A third activity is called 'Body Language,' but this is a pun as it entails language about the body rather than gestures. Students, on a worksheet, are asked how many body parts they can name in five minutes. This seems to be to prime knowledge solicited by the remainder of the worksheet, which asks students to choose the right word in sentences such as 'She put her coffee down on the *arm/hand* of the chair.' A variant

for more advanced options uses the same sentences but with blanks, the list of words given at the foot of the worksheet. By way of wrap-up, learners are asked to discuss what the connections are between the physical body part and the use given in the sentences, and then asked for similar expressions in their own language.

A fourth activity involves a short text, such as newspaper article, which is divided into half. In the first part, all the polysemes and homonyms are underlined while in the second part they are not. The students are told to look up each word and write down the number of the definition that fits. (In this scenario, the class is using a set of identical dictionaries.) They are told that the first definition might not be the right one and that they should read through all of them quickly. For the second half, they are asked to underline the words which words they expect might have multiple meanings.

The following activity involves bilingual dictionaries and takes a couple of class sessions. In the first session, half the class are given bilingual dictionaries and the other half monolingual. They are all given a short text of about 300 words containing several homonyms (or polysemes) and are told to consult the dictionaries whenever they want but should read as much information as they can, noting for example syntactic patterns, pronunciation, other meanings, usage restrictions, etc. Then pairs who used the same dictionary discuss which words they looked up and what they noticed. Following this, the students are re-paired with those who used the other kind of dictionary and discuss the same issues. In the following session, the activity is repeated but with students given the opposite kind of dictionary than what they had used before, which is followed by a class discussion of what dictionary they prefer. This activity is not directly related to polysemy or homonymy, despite being tagged as such, but the discussion of dictionary preference and the raising of learners' awareness of the dictionary's limitations makes it worthwhile.

(By way of anecdote, I would like to add that the book's index entry for 'sense associations' looked like a promising venue for more polysemy-related activities. I read, with increasing confusion, the first activity and part of the second before finally realising that *sense* here referred not to polysemic senses of words but to the five human senses of perception—evidence that even native speakers can be thrown by polysemy at times. Even monkeys fall from trees.)

Restricting this only to dictionary skills related, however tangentially, to polyvalence, the following are the skills that I believe every advanced user should possess. Some of the skills assume an adult level of cognition. These skills apply to both monolingual and bilingual learner dictionaries. Along the way, I will also suggest how dictionaries could be improved to facilitate these skills.

7.2.1 Reading entire entries

The first skill is simply reading all the definitions. This may seem obvious to us by now but a critical examination reveals why this is frequently impractical. Of course, it takes longer, enough for learners to lose the flow of the passage they're reading, but it's not simply a matter of time but of cognitive involvement: the learner has to audition each proposed sense. This is not a straightforward process as it's possible that the learner has to read further in the passage to be certain which proposed sense is at work here; the word in question may refer to a concept not otherwise introduced yet in the text. It is a much different matter for a native speaker, knowing all the senses of a given word, to declare which sense is at work in the sentence than it is for the learner, who has incomplete knowledge of both the word and the text, to do so.

Moreover, if the sentence they have encountered employs, say, the third polysemic definition of the dictionary they consult, it could be closely enough related to

the first that they can comprehend the sentence without actually having to read that far. In many dictionaries and especially the learners' variety, the first definition is either the most frequent or the most 'central,' and therefore the chances of it being the 'correct' choice are greater than for later definitions. And given, as we have seen, how dictionary-defined senses have a habit of splitting hairs, the difference between the first and later definitions may be so negligible that the meaning can be understood from the first definition even when a later one technically covers it better as worded by the lexicographer. As stated earlier, an experiment which attempted to recreate such situations in a controlled setting was aborted due an inability to compose an adequate number of sentences in which a later definition of an unknown polyseme was employed and the first was clearly wrong. We should, at this time, recall Béjoint's (2000) claim that his subjects (French learners of English using monolingual dictionaries) couldn't understand how the dictionary divided up the definitions. Our own experience should bear this out: the differences between two enumerated senses in a dictionary are frequently subtle, sometimes contrasting only in which preposition is associated with that 'sense.' Consider the following excerpt for *look* in the CC. The first definition, given here briefly, is: *If you look in a particular direction, you direct your eyes in that direction, especially so that you can see what is there or see what something is like.* Reading on, should he actually do so, the user would soon encounter the following:

- 3 look looks looking looked
 If someone, especially an expert, looks at something, they examine it, and then deal with it or say how it should be dealt with.
 Can you look at my back? I think something's wrong.
 VB
- + look
 Also a noun.
 The car has not been running very well and a

mechanic had to come over to have a look at it.

N-SING: usu N at n

Having read two definitions and one sub-definition for this word, the learner gains nothing by reading to the third. Although definition 3 is worded in such a way that it adds additional information (i.e., expertise), the wording of definition 1 does not exclude the cases covered by the third. Therefore if 1 was read in isolation and fully understood, there is no need to read 3. Definition 3 carves its own niche, but there is no niche until it does so. There may be a need for such information for encoding purposes, but such fastidious segregations add nothing but burden for the learner using the dictionary for decoding: treated homonymically in the *COBUILD* for active and stative uses, there are 18 numbered definitions for *look*¹ and seven more for *look*². Dictionaries, then, give their users a mass of senses and then very little reason to sift through them all.

My goal here is not to say that learners need to read entries and then champion the cause for not doing so, nor is it to continue taking swipes at lexicographical practice, but it is merely to show the challenges faced by a desire get students to read a complete entry. When they fail to do so, we should not think learners lazy or inattentive but, rather, overwhelmed with minutiae. We need to realise that in asking learners to read entire entries that they frequently have good reason not to. Not all words are as 'polysemic' as *look*, which I don't even consider an extreme case with a mere 25 definitions, but the learner has no idea how many definitions there will be until the word is looked up.

And yet, the learner still has to read through the entire entry to rule out better candidate senses. We still have the issue of discrete polysemic senses (*suit* relating to clothing or legal cases, or the noun *defect* and the verb *defect*) and homonyms (*cape*). The subtle distinctions of alleged senses potentially blind the learners to the major

spheres of meanings, giving them trees (or branches!) when forests are more vital.

7.2.2 Knowing how—or if—polysemy and homonymy are distinguished in dictionaries

Fortunately, the burden of reading of the entire entry can be lessened by knowledge of how the dictionary distinguishes polysemy from homonymy. Again, this is not unproblematic. Although the commonest practice is to provide separate headwords for homonyms while containing polysemic senses in just one, there has been a trend in learner dictionaries to collapse homonymy into single entries, resulting in less obvious presentations of later homonymic meanings. Furthermore, dictionaries can be internally inconsistent, probably contingent upon the views of the individual lexicographers. In the *COBUILD*, for example, the homonymic *bridge* (regarding infrastructure and the card game) are treated together as are those of *ball* ('round object,' 'social event') and *date* (the nut and the calendar-related meanings), and yet *bank* is given three. The word *look*, as we have seen, has two, one branch denoting the action verb and related nouns ('Look at me') and the other the stative verb ('It looks to me...'), despite that these uses are clearly related. *Sound* has two entries, neither of which includes the 'sea inlet' meaning. Even the *SOED*, where we might expect a stricter stance, makes unclear distinctions. *Aspiration*, with meanings regarding future dreams and a phonological trait, is treated as single headword even though shown to stem from two different verbs (*aspire* and *aspirate*, respectively). *Kudo* and *kudos* are given separate status although the former is marked as a back formation of the latter.

In case studies I have done, albeit ones aiming to examine other variables, I have observed that use of the dictionary for homonyms, when they are distinguished by different headwords, has resulted in students being oblivious to the second homonymic entry. This is in spite of the number appended to the entry word (as in *look*¹).

Homonyms are so rare, or so rarely looked up, that learners may not have developed an awareness of how they are separated, or at least have not developed the habit of looking for separate entries. This requires further examination but, if true, lends validity to the case for collapsing homonymy.

Ideally, however, the distinction is made, and the users, aware of how homonymic meanings are differentiated in their dictionaries, can scan the entries for the major spheres of meaning and then fine-tune their search. If they fail to do so, then what happens is they end up reading all the minor distinctions of meaning for the first homonymic entry and only then encounter the second one, and that's assuming they happen to see the second entry...and *that's* assuming they didn't stumble upon the second entry first, a situation I have observed. I therefore believe quite firmly that homonymic meanings need to be distinguished in a way that will allow users to hone in on the major, discrete differences first, but this discernment is meaningless if the users are not aware of it or its importance. Instructors, for our part, need to make sure students are. It's reasonable to argue that learners should be taught how to look for homonymic entries in their dictionaries, but not reasonable to assume that they have been. I'm yet to see a dictionary that doesn't provide a warning to users that there is an adjacent homonymic entry; *look*¹ clues the user to look for *look*² while *look* does not, but this is a detail apparently overlooked by many users, or else its significance is unknown. It is another number signifying different meanings in a book already using numbers to signify different meanings. The knowledge of how a given dictionary classifies homonyms as opposed to polysemes coupled with the skill of looking for their indicators will help the learner in both decoding and encoding and lessen the burden of reading entire entries.

7.2.3 Relating new information to old

Recalling Meara's (1997) network model, the more links a word has in a learner's mental lexicon, the better it is known. A new word linked to its L1 equivalent is not poorly learnt because of its L1 dependency, but it will be weak if that is its sole connection to the network. There are a few ways in which words can be linked to previously established material, all again entailing improvements either to lexicographical conventions or to the users' skills.

In an article suggesting simple changes to dictionaries to facilitate learning, Nation (1989) writes:

Where it is helpful, dictionaries should include simple etymological information. Such information is helpful where the meanings of the word parts can be related to the meaning of the word. Thus, providing etymological information for *despicable* is useful. But providing it for *destine* is not useful as it is difficult to see how the meanings of the parts relate to the present meaning of the whole word. A useful addition to this kind of information is the indication of related words. So the entry for *rank* should indicate its relationship to *arrange*. This type of information allows learners to connect previous learning to the learning of the new items.

Thus the learning of words such as *rank* can be linked to the network not just via its L1 equivalent but reinforced via a link to *arrange* (which is, in turn, also reinforced).

Since these are both very high frequency words (*arrange* from the first 1000 band and *rank* from the third), let's consider the learning of less frequent words via recourse to a high frequency ones—examples, that is, of incorporating new vocabulary items into a more advanced network. The verb *fabricate*, situated in the 9000 frequency band of English words, would likely be learned well after the word *fabric*, from the 4000 frequency band, has been acquired. The meanings of the two are different enough that they can be considered two separate words—the object of *fabricate* is rarely something made of fabric—so the new lexical item can be linked to the older. Dictionaries, Nation writes, should provide etymological information pointing this out. Likewise, the word *vacation* is in the 6000 frequency band (and no doubt noticeably

higher in American English due to its polysemy there) so a learner would generally learn the verb *vacate*, from the 8000 band, later. The connection between the two words may not be completely obvious at first. There is, again, a contrast of meaning between *vacate* and *vacation* that differs from the contrast of, for example, *vaccinate* and *vaccination*; vacating a building can hardly be referred to as a *vacation* (in either America or England!). But differences aside, the learner may benefit from having the relatedness pointed out.

In cases such as these where the meaning of an affixed form is not entirely predictable from its root (*vacate* yielding *vacation*), the relationship is not a matter of historical trivia but is important for a full understanding of the word. An advanced learner familiar with the word *lofty* but not knowing what a *loft* is has a markedly different understanding of the word than I do. This shouldn't impede her ability to understand or use the word (ultimately the most important aspect), but I would suspect it to be a different cognitive entity than my own. I suspect few languages, especially those not close or directly related to English, would translate these words accordingly, in which the translation equivalent of *lofty* is also an affixed form of the translation equivalent of *loft*—meaning that the words are very likely to be completely different in the first language and connected only in the target language. Thus providing this information links the words in a way they otherwise wouldn't be—an L2 network is being forged independently of the L1.

It's worth noting that, as semantic entities, the difference between *loft/lofty* (and *vacate/vacation* and *fabric/fabricate*) and the two meanings of *flavour* is minimal at best. *Lofty* denotes a metaphoric extension of *loft* that is formally marked by the terminating *-y* (triggering and/or triggered by a syntactic change, from noun to adjective) while *flavour* is not. The literal/metaphoric divide is the same, but different

processes of word formation have come into play, resulting in one form being (or appearing) polysemous and the other, merely 'related,' a distinction that would seem entirely based on the formal distinction. We have, then, further insight into the nature of polysemy: it is, in some cases, essentially a by-product of the morphological option called conversion.

Although learner dictionaries are stripped of such information, the learner is not without options. The skill to be fostered here is to examine adjacent and nearby words. Even in a dictionary as large as the two-volume *SOED*, *vacation* is adjacent to *vacate*, and *lofty* and *fabricate* are near their roots, with only other related words intervening. This is a hit-or-miss technique but one in which the hits would be of great assistance. The fact that this skill would fail to show the relevance of *rank* to *arrange* shows why the cooperation of lexicographers in making such links explicit would be beneficial.

The connecting of new words to previously learnt material is developed further in chapter nine.

7.2.4 Marking in dictionaries

One technique I used to like to instruct my students in has become virtually impossible, at least in Korea, as technological advances have recast dictionaries into hand-held calculator-like items and even as features of cell-phones. The technique is to star, with a pen or pencil, each visited word, including those you have already starred. This keeps track of words you have already encountered so that when you encounter a word that already has two stars, you know the word is important enough to warrant dedicated attention. This technique can be modified to include the marking of which sense (or cluster of senses) is relevant, thus providing the user with information regarding the relative frequency of each meaning or sense cluster. Many everyday

words are jargon in some fields (*glide* and *liquid* to phoneticians, *round* to musicians, *love* to tennis players and fans, etc.) and aren't even known to all native speakers. Despite claiming above that users should read entire entries, and even nearby ones, I'm not stating they need to memorise each one. In fact, the starring technique is especially beneficial for occasions when the dictionary is consulted quickly and time-consuming techniques are impractical since starred words can be returned to later. The best dictionary technique a learner can foster is simply to use the dictionary when they *don't* need to.

As stated, technology has not been cooperative with this technique although there is no reason (other than expense, which is a pretty good one) why electronic dictionaries cannot be annotated by their users, as some electronic book readers are, or even equipped with a simple 'star' function. With internet dictionaries, the same results can be effected by bookmarking the consulted words—I do this myself—though browsers generally don't inform you when you are bookmarking a page already bookmarked. A variation that would facilitate this is to save such pages in the same folder, where you would be warned of overwriting an existing file of the same name. In cases where the product simply offers no option, a small notebook to record which words are consulted will suffice.

Most of this chapter has assumed print dictionaries but these more modern versions deserve attention. Very little research has been published on the differences between electronic or computer-based dictionaries and the print varieties, and none of what does exist examines their treatment of polysemy. Relying then on personal observations, this is probably because there are no significant differences. Electronic dictionaries are simply versions of existing print dictionaries edited for the new media; I am unaware of any that was created from scratch for the electronic format without

recourse to print editions. Although many computer-based dictionaries are also transplanted versions of existing editions, some, especially on-line dictionaries, have more independence in this regard. Websites such as wikitionary.com, and Collins' *Living Words* (Lan 2005) have words and definitions contributed by users rather than trained, professional lexicographers.

Despite the greater volume of information that electronic dictionaries might be expected to accord, at least considering their size, some appear to be highly truncated versions, with example sentences removed¹⁶. This may be a concession to the computer memory available—especially as many are not dedicated dictionaries but one function of PDAs (personal digital assistant), cellular phone, etc.—an effort to fit entire entries onto small screens, or perhaps both.

There is however, one advantage provided by these non-print versions. When a given word form has multiple entries, generally signifying homonymy, the user may be first taken to a menu of headwords. For example, typing in *bridge* in the CD-ROM edition of the *SOED* calls up a menu showing *bridge*¹(*n*), *bridge*²(*n*) and *bridge*(*v*) The unnamed dictionary in my cellphone shows all the options available for the sequence of letters, updating the list with each letter entered. Thus *bridge* shows:

bridge
bridge
bridgeable
bridge bank
bridgeboard

plus others available by scrolling down. There is no reason available why the user should chose *bridge*² over *bridge*¹, but it does make more explicit that there are multiple options that need to be read than print editions do, where users who are not in the habit of reading adjacent entries or recognising the superscripted numbers (or aware of what

¹⁶ This is based on an observation of the unnamed Korean-English dictionary contained in my Korean cell phone. My claim that portable, electronic dictionaries are abbreviated versions of a printed source, and exactly how they differ in terms of content, will be the subject of a future project.

they mean) may easily miss them and potentially read the wrong entry.

Conclusion

The skills presented here have some relevancy to polyvalent words but a well-rounded programme in dictionary skill enhancing needs to touch on more. I have received notes from students discussing 'my one's older brother' because they are not familiar with the dictionary practice involving *one's* or how to alter it to accommodate their discourse. An awareness that some words do not translate, for example, and what to do in such cases, would be helpful as well.

Finally, it's worth noting that the 'jump' from bilingual dictionaries to monolingual entails more than just a collapsing of the languages used. A monolingual dictionary defines while a bilingual dictionary presents synonyms and is therefore more akin to a thesaurus (replete with the same caveats for L1 and L2 users regarding the potential misuse of unknown words). Such definitions use certain conventions, for example substitutability (discussed in 1.1 above, i.e., definitions of nouns being cast as noun phrases, verbs as verb phrases, etc.).

To examine a few of these conventions, the *SOED* contains the following information about *happy*:

3. Of an action, speech, etc.: pleasantly appropriate to the occasion or circumstances; felicitous. Of a person: dexterous in hitting on the action, words, etc., appropriate to the circumstances. LME.

Four of the five definitions supplied begin with a similar 'of' phrase which is intended to focus the scope of the definition. The following is an excerpt for *happiness*:

3. Deep pleasure in, or contentment with, one's circumstances; an instance of this. L16.

All three of this word's definitions terminate with this redundant 'an instance of this' (which occurs 1,154 times throughout the dictionary). It is akin to the 'HORSE: a representation of a horse' example discussed earlier, telling us nothing about the word.

But my point is not to belabour my nitpicking of dictionaries but that monolingual dictionary definitions form a linguistic genre, one that is marked by certain conventions unique to itself, and that learners, particularly second language learners used to the thesaurus-like construction of bilingual dictionaries, are frequently not taught to read them.

As teachers, we need to be mindful of this and of all the problems the dictionary user faces. The teaching of dictionary skills, it seems to me, is a buck that never stops anywhere. There's always another teacher who should be teaching it rather than us.

Chapter eight: Teaching homonyms, part 1

Compared to the shades of polysemy and the vagueness of monosemy, homonyms are refreshingly solid entities with clearly delineated parts. There are exceptions—we've seen where the homonymic meanings of *ear* are frequently construed as related—but for the most part, words like *lie* 'to be prostrate' and *lie* 'to tell a falsehood' are units of meaning so discrete that one's not likely to be confused for the other by those familiar with both meanings.

This unconnectedness of meanings facilitates a pedagogy. Unlike polysemy, which entails knowing when and how to use a certain sense appropriately, learning homonyms does not differ much from learning other words—that is, the meanings of *lie* are as unrelated as the meanings of, say, *red* and *coffee* are. There is, however, a difference—the identical word form—and this can be made an advantage because the two unrelated meanings can be connected to serve as a mnemonic. The following chapter will report on such a technique while the goal of the current chapter is to examine which homonyms are relevant to learners and addresses the question of how many words in the *General Service List* (West 1953) are homonyms.

Frequency lists have long been employed in deciding which words should be included in vocabulary curricula, Thorndike (1932) and West (1953) being two of the most famous and longest lasting, but such lists, including the plethora of publishers' in-house lists that have developed since the computer revolution, routinely ignore the issue of homonymy. That *lead* (as in 'lead singer') and *lead* (as in 'lead poisoning') are treated together in corpus-based lists when they are not semantically related, etymologically linked nor even pronounced the same reveals that the written form is the sole criterion for inclusion on such lists. It would be ridiculous to lump *hour* and *our* together as a single unit just because they are formally identical in the spoken realm, but no more so

than to indiscriminately cluster words with the same written form such as *lead* and *lead* or the Germanic *bowl* referring to the dish and the Romance *bowl* associated with the sport of bowling, yet this is the situation before us.

Since meanings are also not considered, their relative frequencies are not a factor, yet their potential impact on such lists is significant. The word *school* has a rare meaning referring to a group of fish (not etymologically related to the more common meaning), a meaning that, by my estimate of corpus data, occurs once for every 10,000 instances of the word form. Accounting for it would not pose much threat to *school*'s status on a frequency list, but the two meanings of *bowl* represent a 50/50 split of occurrences of the word form, a factor that must certainly knock the word form down in frequency if not off certain lists altogether. That words should be catalogued solely by their written forms is simply untenable and at times absurd, a convenience unworthy of academic respect. Using a computer to generate a list of word forms should be a starting point, not the final word on the matter. The human researcher still has work to do, and this work is what the current chapter attempts to start. A list of frequently occurring homonyms is presented. Separate lists of cognitive homonyms, homographs and homophones are supplied as appendices.

8.1 Methodology

To compile a list of frequent homonyms, the source of words used for this project was West's (1953) *General Service List (GSL)*. Each word was examined in the *Shorter Oxford English Dictionary (SOED)*, CD-ROM edition, which treats homonyms as separate headwords. When different headwords are used for different parts-of-speech, the etymologies were examined, with those with contrasting histories being considered homonymic. The verb *file* meaning 'to store in a filing cabinet' was not distinguished

from the related noun as their difference is more a matter of syntax and word formation than semantics. Meanings marked archaic, obsolete, rare, or dialectal were ignored while slang meanings were treated on a case-by-case basis. Homophones, homographs and cognitive homonyms were noted on separate lists.

Each homonym was then examined in a corpus to determine the relative frequency of each meaning. Because of the high frequency of each word form, a small corpus was used, both the written and spoken components of the *Wellington Corpus*, each one million words. The *British National Corpus XML Edition (BNC)* was used a few times, either when the *Wellington Corpus* had too few instances of a word form or when, in conducting previous research, I had already analysed a particular word using a much larger sample in the *BNC*.

The search token was not just the uninflected form but also all the inflectional—but not derivational—morphemic variations. This has a significant effect on certain words. Both homonymic meanings, for example, of *file* (something you put in a filing cabinet or the tool for making rough objects smooth) inflect the same: *file, files, filing, filed*. For some words, only one meaning inflects, as with *can* where the content word can be *cans, canned* or *canning* but the modal verb is fixed in one form. Finally, the meanings of some homonyms inflect differently as with *die* where one meaning is realized as *die, dying, died* and another as *die* and *dice* (instances of the verb *dice* being removed by hand). In some cases, a rare meaning was present only because its inflected form was included; the rare meaning of *down*, for example, related to *dune* (i.e., downlands) probably appeared only because *downs* was included in the search.

Using *Wordsmith Concord*, random samples of between 150-200 instances were drawn for each homonym. The Central Limit Theorem states that a random sample of 30 instances is sufficiently large to approximate the distribution of a population but a

larger sample was used here as many words have quite rare meanings. Using the program's tagging feature, each instance was assigned a category denoting which meaning was employed, the results of each recorded in a spreadsheet program.

8.2 Results

Table 8 shows the distribution of homo-types in the *GSL*.

Category	#	% of <i>homo</i> - words	% of total words in <i>GSL</i>
homonyms	74	34%	3%
homophones	133	62%	6%
homographs	9	4%	0.4%
total	216	100%	9.4%

Table 8: Distribution of homo-types in the *GSL*

A liberal approach was taken for the homophone count. A word was considered homophonic if one form, bare or inflected, phonetically corresponded to another word, bare or inflected, included in the *GSL* or not. That is, not just were *eye* and *I* counted but also *scene* and *see* because the latter inflects as *seen*. Also, some word forms are homophonic with more than one other word, such as *write* (*right*, *rite*) and, in some dialects, *metal* (*medal*, *meddle*). This approach yielded a higher number than a stricter account would have. In all, 9.4% of the *GSL*—that is, nearly 10% of the 2,284 most frequent words in English—are of the three *homo*- types.

Table 9 summarizes the distribution of homonyms according to the more frequent meaning, including one 50/50 split (which will be included in mentions of commonest meanings throughout although it technically would not be considered one). There are, for example, 20 homonyms in which the common meaning accounts for 100% of the corpus data, these 20 forming 27% of all the homonyms found. Note that the categories are not uniform, with the bottom four categories each representing a

range of ten percentage points, the next one up (90-94%) representing five, etc.

Commonest meanings accounts for	#	% of <i>GSL</i> homonyms
100%	20	27%
99%	7	9%
98%	5	7%
97%	4	5%
96%	6	8%
95%	3	4%
90-94%	7	9%
80-89%	10	14%
70-79%	7	9%
60-69%	1	1%
50-59%	4	5%
	74	100%

Table 9: Distribution of homonyms by percentage of commonest meaning

The first four rows, from 97% to 100% constitute half the entire list. For thirty percent (i.e., the bottom four rows) of the homonyms in the *GSL*, the commonest meanings account for between 10-50% of the corpus hits. Less than half, 43%, see the commonest meaning occurring 98, 99 or 100% of the time, which is the same percentage of instances in which the commonest meaning occurs 90-99%. Seventy percent of these *GSL* homonyms have the commonest meaning occurring 90% or more.

Table 10 presents those 54 homonyms in which at least two meanings have demonstrable currency, and the relative frequencies of each meaning based on the random sampling. The meanings signified by brief notes are not intended as delimiting definitions, and in many cases each homonymic meaning represents a range of polysemic senses. The common meaning of *bridge*, for example, encompasses the kind designed by engineers and the kind put in by dentists as well as the verb as these are clearly related.

ARM	
body part	74%
weapon	26%
BALL	
round object	96%
social event	4%
BAND	
group of people	81%
hoop/ring	19%
BANK	
financial institution	93%
embankment	7%
BEAR	
(verb)	92%
animal	8%
BOIL	
(verb)	97%
swelling	3%
BOWL	
dish	50%
game	50%
BOX	
container	95%
sport	5%
BRIDGE	
infrastructure etc.	92%
card game	8%
CAN	
(modal verb)	98%
tin	2%
CASE	
situation	98%
container	2%
CHECK	
(various polysemic meanings)	99%
pattern of crossed lines	1%

DATE	
related to calendar	99%
fruit	1%
DIE	
to stop living	95%
singular of noun <i>dice</i>	5%
DOWN	
opposite of <i>up</i>	98%
downlands	2%
feathers	0%
EGG	
produced by females	99%
to egg on	1%
FINE	
good/small	95%
penalty	5%
FIRM	
business	56%
solid, strong	44%
FOLD	
to bend	99%
enclosure for animals such as sheep	1%
HOST	
of a party, etc.	80%
multitude	19%
sacrificial victim	2%
LAST	
previous/final	92%
to continue	8%
LAY	
to place	98%
non-clergy	2%
LEAVE	
to depart/bequeath	88%
direction (inflected as <i>left</i>)	9%
permission	2%
plural of leaf (inflected as <i>leaves</i>)	1%

LIE	
to be prostrate	92%
falsehood	8%
LIGHT	
opposite of <i>dark</i>	80%
opposite of <i>heavy</i>	20%
LIKE	
to resemble (including preposition, conjunction forms, etc.)	78%
opposite of <i>dislike</i>	22%
LINE	
geometric figure	97%
to apply lining	3%
MATCH	
game	97%
small wooden stick	3%
MEAN	
to have meaning	96%
cruel	3%
average	1%
MISS	
fail to hit	75%
(title)	25%
NET	
web	63%
total	37%
PAGE	
of book, internet, etc.	99%
to call out	1%
PAN	
cooking (including 'to criticize')	96%
to move a camera (from <i>panorama</i>)	4%
POLICY	
(as in 'foreign policy')	99%
(as in 'insurance policy')	1%
POOL	
water	56%
combined resources (38%)/billiards (6%)	44%

POT	
cookware	96%
marijuana	4%
POUND ¹⁷	
monetary unit (58%)/weight (13%)	71%
to crush	29%
dog pound	0%
PUPIL	
students	99%
part of eye	1%
RACE	
competition of speed	87%
species	13%
RAIL	
horizontal beam	98%
to rail against	2%
REST	
remainder	73%
recuperate	27%
RIGHT	
correct/opposite of <i>left</i>	85%
legal rights	15%
RING	
sound of bell	88%
circle	12%
ROLL	
to spin	96%
catalogue/list	4%
SCALE	
measurement/weight	96%
to climb (including musical sense)	2%
reptile skin	2%
SET	
to place, to be firm	83%
collection	17%
SOCK	
garment	94%
to punch	6%

¹⁷ Note that the search did not include the monetary symbol (£) and that the search was done on the *Wellington Corpus* and not on the *BNC* where the monetary meaning could be expected to be significantly higher.

SOUND	
audio phenomenon	87%
sea inlet	6%
sturdy	6%
to test or inquire (to sound out)	1%
SPELL	
letter-by-letter/incantation	70%
time interval	30%
STEEP	
(adjective)	93%
(verb)	7%
TEND	
to engage in habitual actions	97%
to attend to	3%
WAKE ¹⁸	
to be awake	71%
a track (in the wake of)	25%
vigil	4%
WEAVE	
interlaced thread	85%
to move repeatedly from side to side	15%
YARD	
land	57%
36 inches	43%

Table 10: Homonyms in GSL in which more than one meaning appeared in the random sample

In addition, the homonyms in table 11 are present in the *GSL* but the rare sense, signified in the parentheses, did not occur among the random samples. (In no case, incidentally, did the rare meaning occur but the distribution was rounded off to 0%.)

¹⁸ The *SOED* states the 'to be awake' and 'vigil' meanings are partly related.

BILL	(of a duck)
BIT	(binary digit)
BRUSH	(undergrowth, forest)
CAMP	(corny, exaggerated)
COUNT	(Dracula, Basie)
DEAL	(to distribute playing cards)
EAR	(of corn)
EVEN	(opposite of <i>odd</i>)
FAST	(to abstain)
FILE	(tool for smoothing)
HIDE	(skin)
GO	(Japanese game)
LOCK	(of hair)
PEN	(pig pen)
REPAIR	(to go)
SCHOOL	(of fish)
SHOOT	(interjection)
SLIP	(garment)
STEP	(-mother)
SWALLOW	(migratory songbird)
WELL	(spring of water)

Table 11: Homonyms in GSL in which only one meaning appeared in the random sample

The notion of relative frequency of meanings can be misleading. Of these last 20 homonyms, it would be rash (another homonym) to declare the meaning that didn't occur as unimportant. It is not, of course, as if these meanings don't exist, only that they didn't occur in the random sample. Certainly the rare meaning of *repair* is so scarce that it warrants little or no classroom attention—I can't remember the last time I encountered it—but the meaning of *even* denoting parity is one that students may well need, and its unavailability in the data speaks more to the sample size and the dominance of the common meaning; as one meaning is a function word, a type of word that naturally dominates the 100 most frequent words, and the other lexical, it is not a fair comparison

to begin with. That one meaning failed to appear does not necessarily make it a rare word, only rare in comparison to those that share its form. Adding one more sentence to the sample could have resulted, theoretically at least, in the rare sense appearing.

I base this comment on nothing more than intuition, but for several of the words above, the meaning I would expect students to know, if they knew exactly one, is in fact the statistically less common one. This is true of *miss* where I would expect the title to be more familiar to students than the verb when it in fact accounts for less than a quarter of the uses, and of *firm* where the adjectival meaning might be more well known than the noun to learners though the distribution in the *Wellington Corpora* shows that native speakers might use the noun more frequently. That learners' knowledge may not conform exactly to the statistics indicates only that a learner's lexicon differs from a native speaker's. Recall, too, that inflected forms were included in the count, thus *miss* included *misses*, *missed* and *missing*; an independent corpus search reveals that the title *miss* accounts for 58% of the uninflected form, thus nudging it into the majority.

8.3 Discussion

8.3.1 Apparent relationships

It's worth noting that several of these historically unrelated meanings actually seem related. I suspect that many of us grew up thinking that the fish-related meaning of *school* was related to the education meaning, a state no doubt reinforced by cartoons showing groups of small fish following a mortarboard-wearing large fish. (Indeed, many children probably learn the aquatic meaning from such wordplay.) That *weave* encompasses two distinct and unrelated meanings is surprising as well, as a car weaving in and out of traffic lanes is not unlike a needle weaving through cloth. The fact that I and, I suspect, many readers have never considered the relationship between these two

meanings, and those of other homonyms above, until pointed out suggests that language users don't necessarily develop an awareness of such matters, although we frequently do in some clear cases of polysemy (*the flavour of the coffee* and *the flavour of the event*). This may contribute to the two meanings being fused in our mental lexicons. The two meanings of *policy* as seen in *foreign policy* and *insurance policy* are etymologically unrelated but were initially difficult for me to disambiguate in the corpus because they had previously formed a single lexeme in my mental lexicon. Referring to insurance companies as 'policy makers' should be a pun (I'm not saying a good one) but fails to trigger an awareness that it's even supposed to be humorous. While technically homonyms, cases such as these are perhaps better treated as polysemes for pedagogical purposes.

8.3.2 Pedagogical implications

The logical starting point is to teach the less common meanings according to the relative frequency of the meanings. In other words, the 'solid, strong' meaning of *firm*, representing 44% of the word form's usages, should be one of the earliest homonymic meanings introduced. Around the same time, the '36 inches' meaning of *yard* might be taught, particularly for ESL students for whom it's probably more relevant than for learners in countries where this unit of measurement is not used. Generally, the rarer the less common meaning, the later it should be introduced.

Homonyms contrast in this way with other polyvalent words. With polysemes, a case could be made for teaching all, or at least a local cluster, of its meanings together since they could potentially reinforce each other. With cognitive homonyms, teaching the etymology of how one meaning generated a now seemingly unrelated new meaning might help connect two otherwise detached meanings. (See (Boers 2000, 2000a) for the

related topic of how understanding metaphoric connections aids retention.) But since the meanings of homonyms are unrelated, it is better to delay the introduction of a new meaning unless it's of immediate need.

Apart from the potential interference of each meaning, there is also generally little need to introduce two meanings of homonyms simultaneously. Considering when students first learn the word *school*, not inconceivably on the very first day of their very first English lesson, the fish-related meaning would be of absolutely no use. Frequency needs to be considered when deciding what to teach. Teaching a word form showing a 100%/0% distribution of meanings above is teaching a high frequency, and therefore useful, word coupled with a meaning that learners may not need until much later. While the 50/50 split of *bowl*, however, suggests that each meaning is only half as frequent as the word form's presence on the *GSL* would indicate, it would be safer to ensure that one meaning is learnt so as to avoid interference.

What, I suspect, is more helpful is that, when introducing the rarer meaning, the teacher or material writer has an awareness that the students are already familiar with the form and the more common meaning, which we often don't seem to be. If, for example, we introduce the 'multitude' meaning of *host* to students already familiar with the meaning akin to *hostess*, the learners may be trying to work out what the connection is and should be told there isn't any. Further, it might be helpful to provide suggestions for helping students disambiguate uses when encountered, which can be accomplished by teaching the collocations of each meaning, which are almost always different. Having just learnt the 'strong, sturdy' meaning of *sound* is no guarantee that the learner will correctly identify which meaning is employed in 'the very sound waves produced last night' or 'The music teacher offered him some sound advice.' Hoey's (2005) claim, we recall, is that such sentences would generally be avoided because each meaning

avoids the primings of the other, but that they can occur either with momentary ambiguity or confusion, perhaps followed by a self-repair, or as humour.

Conclusion

What needs to be remembered is that the lists of homonyms presented here are not necessarily the most frequent homonyms. The lists are still married to the formal-based lists I criticised at the beginning of the chapter. The word form *school*, for example, is, formally, one of the most frequent homonyms, but its homonymic fish-related meaning is so rare that the word form's frequency construes no argument for the teaching of the word as homonym. To the extent, however, that the *GSL* can be said to represent the most frequent English words (bear in mind that the *GSL* was not composed entirely on frequency), then *bowl* may well be the most frequent English homonym in terms of meaning rather than form. The homonymy list runs the gamut from very common to very rare, and with a population of only 74, it leaves plenty of gaping holes to fill. How, that is, would the list of homonyms provided here be re-integrated with the *GSL* so that the meanings of, for example, *pool* are ranked as separate items among the other monosemes and polysemes? I hope to develop a word list based on meanings rather than written forms in the future.

Constructing an L2 lexicon is a slow process that, no matter what, takes many years and is never complete; this is true even with one's native language. With little explicit instruction on the matter provided, learners are left to their own devices when help from educators might be much more effective. The lists provided above, then, attempts to address this situation by helping the teacher and material writer make explicit the most frequent of these. I intend this only as a starting point since, for many learners, many of these words may be already fully acquired, and a list of less frequent

words would be more beneficial. The acquisition of polyvalent words would be aided by direct instruction regarding their recognition and strategies for dealing with them when encountered.

Chapter nine: Teaching Homonyms, part 2

Having determined some words whose homonymy may confuse learners, we now turn our attention to a technique that will facilitate their acquisition. This technique is a modified version of the keyword method (Pressley, Levin, Delaney 1982). In its unaltered form, the keyword technique is used to learn new L2 words, both form and meaning. The process is to find a phonetically similar word in the L1 and link it to the meaning of the target word. For example, an anglophone learning French may learn *stylo* 'pen' by associating it with the English word *steel* and then visualising an interaction between the two concepts. The visualisation may be like a short movie, and the more bizarre and surreal, the more effective the technique proves to be. In this case, the learner may envision a famous movie star using a giant steel girder to sign an autograph (Shapiro and Waters 2005). A Korean learning English may learn the word *pupil* 'young student' by recourse to the L1 word *pyo* 'spreadsheet table' and the image of such a table where each cell contains students struggling to escape. Variants of the technique not involving visualisation but rather creating a sentence have been proven to be more effective than rote memorisation, but the visualisation element increases the efficiency of the technique. Shapiro and Waters (2005) review the effectiveness of visual connections in comparison to other techniques such as composing linking sentences.

The modified form presented here entails not an acoustically reminiscent L1 word but the formally identical L2 word. Thus, the Korean learner above now familiar with the 'young student' meaning of *pupil* can use this known element to remember the 'centre of the eye' meaning in much the same way: the target meaning (part of eye) is linked to the known element, say by envisioning (apologies in advance!) a classroom of pupils whose pupils are melting and dripping out of their eyes. The question this chapter

answers is if this modified version is effective. This will be called the homonym keyword method here.

The hypothesis explored here is that it is an effective method for remember homonymic meanings, at least provided that the known meaning is indeed known and fully available (a situation deliberately factored out of the current experiment). The elements that make the keyword method work, the cognitive effects of visualisation and the outrageousness, are firmly in place.

9.1 Research design

Apart from the differences in the technique, there are several elements of the research that differ from previous work on the traditional keyword method. One is the scale of the experiment, which is deliberately small, and the other, very much related, regards the data being assessed. Some justification of these are necessary.

First, the study was deliberately small scale because while a larger study would offer statistical validation, it would also prevent the examination of the cognitive processes and details that were sought. Statistical-based studies on the keyword method examine the end result without regard to the process. The researcher, that is, is interested in whether, having been taught the keyword method, the learner can then demonstrate recall of a given set of vocabulary items. How recall is achieved is generally not tested but is assumed to be the keyword method which the group has just been instructed in. My worry is that the subjects, when not beginners, have been studying vocabulary for some years prior to these experiments and may well have developed their own methods that are employed instead of or in addition to the researcher-targeted technique. Furthermore, there is the phenomenon of 'fast mapping' in which the occasional word is instantly and effortlessly learned, in which case either no technique is applied or it is done so artificially to satisfy the researcher. More

damning, in cases involving control groups not presented with the keyword method, is the potential that some subjects may be using a form of it intuitively. Given the complexity of human learning, it is insufficient methodology to assume that any learner is using exactly one technique for any given word let alone a list of them.

For this reason, the current experiment solicited not just evidence that the words have been learned but the visualisation as well. This does not completely preclude the coupling of other techniques nor does the possibility that the technique was applied artificially vanish, but it at least ensures that the subjects have employed the homonym keyword method and are therefore learning the method, making it available for future use. As descriptions of the visualisations can be quite involved, solicitation was done in individual interviews. The subjects were asked to convey their visualisations either verbally or by drawing pictures. This is why the scale of the study was kept small, almost at a case-study level, and conducted individually, because if conducted in large groups, the solicitation of learner-generated imagery could potentially (if not likely) influence those by other subjects. That is, in a group setting, asking one subject for his individual visualisation would be heard or seen by another subject, who may judge it superior to the one she had developed and instead adopt or adapt his. The result could be communally-constructed visualisations which is not what this research aims to measure. This, again, necessitated a smaller study in which the subjects were met individually, as such solicitations involved drawings, which themselves frequently required verbal explanations, which could not be gathered *en masse*.

While not necessarily rubbing against the grain of established research, there is a third point on which I feel I should make explicit my stance, that regarding researcher-supplied or learner-generated imagery. There is no hard consensus here; different experiments have answered the question differently, but in situations that are themselves

so different that the results of one experiment cannot be said to disprove those of another. There are two points I should like to address. First, while I can see the benefit of teacher-provided links for young learners, I think that by the time we are dealing with learners ready for rare homonymic meanings that reliance upon the teacher to provide the mnemonics for individual words will preclude the effectiveness of this technique. In other words, without the ability to compose effective visualisations, the homonym keyword technique is of little use. A second point is one I've yet to see so much as mentioned in the literature yet seems a valid and feasible explanation: the researcher has far more experience in composing visualisations while the subjects are, in theory at least, absolute beginners. My own experience with the technique (as a language learner and as a researcher) has improved with practice, and I have seen pilot-study subjects refine their skills as late as our discussions following the delayed post-test. If, as stated above, bizarreness is a factor in retention, then this may be something that needs developing over time. Many subjects initially develop rather pedestrian scenarios; without guidance, they may find the technique ineffective and stop using it. Hence, comparing the effects of research-generated imagery to those that are subject-provided is treating two very incompatible variables as equal. The methodology employed here was researcher-generated imagery for the teaching of the technique, guided learner-generated imagery to demonstrate an understanding of the technique, and finally unguided learner-generated imagery for research collection.

9.2 Methodology

Seven subjects, all Korean, were asked to participate, all of whom were known to me so I knew their approximate level, and all had demonstrated a sense of responsibility, which had been an issue in a pilot study on this technique. All were relatively fluent speakers in that they generally did not need to pause to construct an

utterance, had no issues with understanding my spoken English, but did not quite have native-like mastery of grammar or vocabulary. Instruction could therefore be conducted in English, although references to Korean were made. The following list summarises their composition.

1. university student (mine, current), female, 20
2. elementary school teacher, female, 28
3. university student (mine, current), male, 21
4. housewife, female, 'upper thirties' (US-university educated)
5. coffee shop employee (preparing for overseas study), male, 21
6. university student (mine, former), female, 21
7. university student (not mine), female, 22

The homonyms to be learnt were selected randomly but were chosen personally based on my assessment of the students' existing knowledge; the selected words were words I felt the learners knew one meaning of (high frequency) but with a meaning I felt they wouldn't (low frequency). This is important because there is a potential difference between this case and applying the same technique to homonyms that come up in context. In the latter, the new meaning is applied immediately to the discourse and the homonym keyword technique is a method to reinforce it. In the current research paradigm, however, the subjects are learning decontextualised words and, hopefully, storing them for future use when such a context arises.

The choice of homonyms, culled from the list in the previous chapter, was initially a matter of educated guesswork, word forms common enough I could assume (and verify) the subjects would know but with rare meanings they wouldn't be expected to. The choice of items was refined over a series of pilot studies, seeing the removal of words like *die* (as the subjects knew the noun *dice*, thus rendering this a grammatical distinction, and one that native speakers don't always observe at that). Because the subjects and I were meeting individually, their lists could in theory be adjusted to disallow word forms they didn't know at all or those with meanings that they did, but

this was not necessary.

At the initial meeting with each subject, the concept of homonymy was introduced. Unsurprisingly, all subjects had some familiarity with the concept. The topic of polysemy was also discussed, albeit only to be dismissed, to make clear that only the concept of unrelated meanings was relevant to the discussion. Their existing knowledge of homonymy was activated first by recourse to Korean homonyms. These included the words *sagwa* ('apple,' 'apology') and the three-way homonym *bae* ('stomach,' 'ship/boat,' 'pear'). This demonstration continued with English homonyms I could safely assume each subject would be familiar with such as *can* ('tin container' and the modal verb) and *bat* ('club,' 'winged mammal').

To introduce the technique, I then introduced some common English words for which I could assume they would know only one meaning (an assumption borne out in each case). The first such word was *temple*, and all the learners were familiar with the religious meaning but none knew the anatomical one. To facilitate visualisation, I asked the subjects to describe a temple they had been to (regardless of religious beliefs, any able-bodied Korean university will have visited several as they are part of the mountain hiking experience, one of the most common pastimes in Korea), soliciting visual detail when necessary. I then explained the rarer homonymic meaning, verbally and by pointing.

Then the homonym keyword method was introduced. Subjects were told they could use the known meaning of *temple* to remember the new one. In this particular case, I suggested the imagery of the subject repeatedly banging his/her temples upon a wall or ornament of the temple which had just been described. Attention was drawn to the elements of the technique at work here, specifically the use of both meanings and the bizarreness of the story. To emphasise the importance of imagination, I also

introduced alternative scenarios such as a giant ripping a temple (building) out of the ground and banging it into his temples, or the giant laying down on the ground and pounding his temples into the religious building. I explained that the technique does not require such violent images but that they are a form of that vividness that facilitate the effectiveness of the technique.

A similar homonym was introduced, that of *China*, the country, and *China/china*, the porcelain dishes, the latter meaning being unfamiliar to all the subjects. Mention was made of the fact that the chinaware usage is inconsistently capitalised but this was not brought up again. The suggested imagery, replete with my hand-drawn map of Asia, was of the country China having human-like arms and throwing china dishes at other countries.

At this point, we returned to the earlier homonym *bat* and, although both meanings were known, the subjects were asked how they might connect the two. Their replies could be given either orally (with gestures) or by drawing or a combination of the two. Details aside, essentially two images emerged, either the animal was being hit with a bat or it was doing the hitting. The oral-only solicitations were, in my assessment, generally weak, conveying simple sentences rather than vivid imagery, such as 'I hit the bat with a bat.' Pressley, Levin and Delaney (1982), in their meta-analysis of the keyword method, conclude that visual imagery only slightly outperforms the sentence version of the technique. I therefore accept that the simple 'I hit the bat with a bat' might work but preferred to ensure the subjects were visualising this clearly—not because vivid imagery is inherently superior to sentence construction but because of the afore-mentioned claim that it is the depth of cognitive processing that determines the effectiveness of the technique. The sentence produced here is simple and can be construed on a vague, abstract level with minimal visualisation or cognitive processing.

It seemed, in other words, simply safer to push for clearer visualisations. I argued earlier that a possible cause of the range of results in the use of the keyword method is that its effectiveness increases with practice, so I saw it as my role not merely to introduce the technique but to train the subjects in its use. When subjects gave me a sentence such as the above, I would ask questions such as 'Where are you?', 'What time of day is it?', 'What colour is the (baseball) bat?', 'What does the (winged) bat do when struck?', etc, to encourage visualisation and cognitive processing.

Other words chosen at this guided stage were *ball* (as in baseball and social ball), *down* (the direction, feathers), and *bill* (financial statement, duck mouth). Solicitations of the visualisations followed the same pattern but the sentence subjects were more forthcoming with visual detail. While none of the subjects knew the word *down* with this particular meaning, one did make a connection with *down jacket*, a term she knew but never understood.

The subjects were then given the following list of homonyms which, again, they were expected to know only one meaning of. The target meaning is included in parentheses.

magazine	(rifle cartridge)
scale	(reptile or fish skin)
fast	(abstinence)
ear	(corn cob)
school	(group of fish)
sock	(to hit)
mint	(where money is manufactured)
egg	(as in 'to egg on')
pen	(where animals are kept)

Each word was discussed in turn, to ensure that the word form was known and that it was the only known meaning. While none knew the word *fast* with the target meaning, it's a safe bet they all knew *breakfast*. I did not draw attention to this since, as with the *down jacket* instance, this connection could potentially override the homonym keyword

method. Each subject then consulted an English-Korean dictionary to look up the second meaning, which they paraphrased in English to ensure their meaning was the one I intended (and not, for example, the musical meaning of *scale*). They were then asked to apply the technique on their own and we would meet again a week later.

I met with each subject, again individually, the same time the following week. The goal here was not to assess if the new meanings had been learnt but to solicit their visualisations. This was again done orally or by drawing, most opting for the latter. Some homonyms did not lend themselves well to visual imagery and sentences were given. The following examples are typical:

magazine	using a rolled-up magazine as a rifle
scale	slapping a scale with a fish
	(although the not-very-bizarre image of a fish on a scale was given by three subjects)
fast	(sentence) I've been fasting so I want to eat fast.
ear	an ear of barley sticking out of a person's ear
school	studying in school when suddenly attacked by a school of fish
sock	a ball in a sock used to hit someone with (frequently a sibling or husband!)
mint	a mint press in which candy is inserted, the press comes down then raises
to reveal a	coin
egg	throwing an egg at someone (president)
pen	(sentence) The pig in the pen stepped on my pen.

Following these second sessions, each subject was thanked and no mention was made of any further session for this project. Since knowledge of a delayed post-test would likely have resulted in review or study, I simply waited at least four weeks until a future encounter with the subject as I had continued contact with each (via classes, campus events, clubs, frequenting the same businesses, etc.). The quickest time was exactly four weeks (my current students) and the longest was 36 days. Each subject was therefore completely unprepared for the post-test. Knowing they would be asked again might result in reviewing, which might result in little more than extending the range of medium-term memory. This 'cold-call' testing was the best way to assess the hypothesis

that the homonym keyword method resulted in actual learning.

What was assessed this time was different data: not the visualisations but whether the subject could produce the meaning when given the word. For example, I would ask, 'We use a scale to weigh something...What is another meaning of *scale*?' The ultimate goal of this technique is not to stockpile surreal images but the meaning of the words. These were solicited orally. Reactions were not timed but it was visually clear if recall was 1) quick/instantaneous, or 2) delayed as they tried to remember. When subjects were unable to produce the correct meaning, I prompted them to remember the visualisation, rather than the meaning, and in cases where they were still unable to, I gave them a hint to the visualisation they had supplied me earlier without giving away the meaning. Such cases were marked as 'couldn't remember' however.

9.3 Results

The scale of this study is too narrow to warrant statistical analysis, so the data is treated as a collection of case studies. Patterns are identified but are not statistically validated; they point to future research that could be conducted.

With one exception discussed below, the results suggest that the homonym keyword method is a successful technique. Two subjects were able to produce all the correct answers, albeit with noticeable hesitations on a few words as they recalled the visualisations. Most of the others were able to recall at least half. There are, however, a few points that I should like to address.

One noticeable issue was that subjects seemed to improve their recall the more they were asked to do so. In other words, not expecting to be asked about these words again, they frequently found the first question harder to answer but the last one easier. The sequence of homonyms was different for each, so it could not be a matter of the first ones just being harder examples. There may be an unintentional reinforcing 'time

cluster' effect in which a set of words studied together can be recalled together. Assuming the keyword method had not been employed in the intervening time, recall at this stage may largely be a matter of remembering the stories of the last time we had met; having activated recall of one or two visualisations, the rest were primed and therefore easier. If, for example, I tried to recall the stories told over dinner with friends from a month ago, remembering one or two would activate the memories of others. If this is the case, then even the correctly answered items would not indicate that the meaning was learnt. It might, however, be the case that if the technique had been applied in the meantime then actual recall might be better because the visualisations would not form a single, isolated cluster of uses.

One subject, however, was unambiguously problematic, and there had been evidence of this through each session. During the second session when the links were solicited, while sometimes providing sentences, she would other times try to list traits common to both meanings, and was also unprepared overall. In discussing the situation with her, it seemed at least in part an apathy to words and meanings she saw no use for: the 'fish skin' meaning of *scale*, for example, was something she didn't think she would ever need. Another possible reason for this rests in her language skills as she is a very fluent and confident speaker whose grammatical and lexical knowledge are noticeably less developed. She confessed to a boredom with the 'details,' a fact which connects both reasons. Perhaps cause perhaps effect, but she would make the occasional attempt to change the subject away from the research project. In the delayed post-test, she was able to produce the correct meanings for *fast*, *sock* and *ear*. The answer for *magazine* was 'About guns,' which suggests the meaning was not quite learned. The verb *egg* was defined as 'throwing eggs at someone,' and *school* was 'Fish going to school,' which was part of the sentence link she had given earlier but of course not the target meaning. Her

response to *mint* was 'Fish skin...? No.' For the remaining words, *scale* and *pen*, she could not produce an answer.

It should be noted that although she did not know this meaning of *fast* at the beginning, she later said she sometimes engages in the activity with members of her church. The word is therefore useful to her. There is, however, also the possibility that it was known but momentarily inaccessible when I attempted to verify its status in her mental lexicon; it's not inconceivable that even native speakers, when confronted with the question 'The word *fast* means "quick," but what's another meaning?' along with several similar questions regarding unrelated words, might draw a blank in at least one of them. The question essentially cognitively primes one meaning and then asks the subject to ignore the information that has just been fired up and then provide completely unrelated information. The prompted meaning is like the elephant you're not supposed to think about.

On a related note, when asking, 'We use a scale to weigh something...Do you know another meaning?' and similar questions during the initial session, subjects sometimes replied with a polysemic definition rather than the intended homonymic one, such as 'Like a scale for rating.' Even if the subject did know the target meaning, it would presumably now be even harder to access with one meaning fired up and a related meaning reinforcing it. I would ask the reader (if not a lexicographer) to consider, having read this far in this thesis, whether words that had hitherto been unconnected have now formed some kind of link—for example perhaps the two meanings of *bowl*, *hide*, *cricket* or *bridge* had been completely unconnected, with no full awareness that the two meanings shared a common word form, until it was pointed out. This has certainly been the case in writing. The knowledge is there—obviously we know the two meanings of *bowl*—but not linked together unless conscious attention is

drawn to them, which may happen in metalinguistic treatments such as this or in jokes (Groucho Marx's famous quip 'I've a good mind to join a club and beat you over the head with it.') or the odd word that just happens to catch our attention. I propose simply that homonyms are not necessarily stored in our mental lexicons this way though they can be made so. All this is to say that the initial method of soliciting whether the word form was known but the rare meaning wasn't may be problematic and that most methods would be problematic as well.

Conclusion

Recalling Meara's (1997) model in which the mental lexicon is a network of nodes that are linked in various ways, what the homonym keyword method offers is a new link to established knowledge; where this differs from the L1 network is that this is done in the phonetic (and graphemic) realm. This is not common (though it's certainly possible) in the L1 in that we generally aren't aware of homonyms unless we draw conscious attention to them. Learners, then, would have a more acute awareness of homonyms than native speakers do, and they have a greater need the extra assistance. The neural link to the new homonymic word form is an alternate, additional path for recall. The word is more connected than it otherwise would be.

It may well be that cognitive effort has a profound effect on recall and that the keyword method merely provides a defined focusing of cognitive resources. This study suggests that the homonym keyword method has potential but that some further research is necessary. Future work should provide a clearer indication that the target meaning is, in fact, unknown, though doing so without inadvertently teaching it is problematic. The inadvertent reinforcement effect of words learnt together facilitating the recall of each other can (if true) possibly be circumvented by using the technique to learn other, distractor words in the interim, and on a few different occasions.

Further, the success of the homonym keyword method, and perhaps the original Keyword Method, may depend on a learning style not overly influenced by affective factors that weigh the cognitive demands of learning against the usefulness of the word, at least when used for learning words out of context as was done here.

Though there are some problems with the current project, nothing serves as evidence against the technique, only that its effectiveness has not yet been fully demonstrated. The success of the original keyword method encourages future research regarding this modification.

Chapter ten: Afterword. Some loose thoughts on polysemy, meaning and learning

It is not enough for the perfection of language, that sounds can be made signs of ideas, unless those signs can be so made use of as to comprehend several particular things: for the multiplication of words would have perplexed their use, had every particular thing need of a distinct name to be signified by.

John Locke
An Essay Concerning Human Understanding

Since you begin doctoral work without the knowledge you will have gained by the end, I should think most dissertations don't end up anywhere near where they were expected to go at the beginning. Mine has been no exception. The expectations I had when beginning this work seem simple in retrospect, thinking this would be a dissertation on learners tacking a few new meanings on to some words they already knew, when it, in fact, has led me to a new understanding of the functioning of language as a whole. The work and thinking I've done regarding polysemy became a Socratic elenchus: my once-clear knowledge of polysemy (I knew what it was, ironically, in a dictionary-definition sort of way) dissolved and disappeared the closer I examined it. An understanding of polysemy strikes, sooner or later, at the very heart of the philosophical aspects of language, and there were days in which I was dangerously close to claiming that language didn't exist—and probably would have were I not paying so much to write a thesis on it.

Although I took a number of chapters to describe the concept of polysemy, there is, generally, a considerably easier way at our disposal, as language users, to convey the concept: simply to use the word *polysemy*. This is one aspect of language I have come to admire during this project: we can actually have a term for a concept we don't fully understand and proceed to talk about it as if we did. I say *admire* with no tones of irony.

Words are shortcuts to complex aspects of reality. Naming a concept doesn't eliminate its unknown elements but brushes them aside, for better or for worse. Words make expressible the inexpressible. They do this inaccurately (as in *cup* and *bird* famously referring to such sloppily defined sets of referents) and yet they do it very economically (again, with *cup* and *bird* being able to cover all their different uses). It's no coincidence that discussions of polysemy tend to be either the briefest of mentions, relying on the communally-understood concept to which the word form links (and invariably the example of *bank*), or else book-length explorations, which that gut-level understanding of the word can't support. Discussions of any length on polysemy soon delve into philosophy because the popular understanding only takes us so far before it collapses.

I know things now I didn't know when I started this work, but I believed things then that I don't necessarily believe now. I believed that referents of concrete nouns, like that linked to the word form *dog*, existed in the real world. It's not that I've become a dyslexic agnostic, questioning the existence of DOG, but that I've come to see that even real-world referents are ultimately as conceptual as abstract nouns. I can use the word *dog* effectively even without having encountered all the varieties of dogs in the real world, let alone every single dog. My conceptualisation is constructed from my own experience, based in no small part upon the French poodle that was a companion for the first ten years of my life, the only dog I have ever had and thus, largely, my prototype. Therefore my conceptualisation of DOG will certainly differ from my interlocutors', and yet we are perfectly able to use the word *dog* with no problem because we are not talking about that French poodle but an abstraction of all the dogs we have encountered or know to exist. And though we may conceptualise it differently, there is a considerable overlap that allows us to discuss it unproblematically. And this is why the word isn't polysemous for every dog, or breed of dog, in the world. Language is

economical. A single word covers an expansive range of referents. (A proper noun is essentially a word whose range is restricted.)

But then there's that 'She's a dog' usage. Isn't that polysemy? I have to answer no. It is our conceptualisation of the world (She's a human being. Dogs aren't human beings. Therefore she can't *literally* be a dog.) that makes it seem so. Our ability to understand the sentence stems from our ability to process metaphor. Calling a person a dog ties directly into the same abstraction of all canines that allows two people with different backgrounds to use the word *dog*. If it were a different meaning of *dog*, then it would not be the insult it intends to be. Allocating the word a new sense to cover female humans defangs the word of its hurtful goal.

But what if we used simile rather than metaphor? If the speaker were to say instead, 'She's like a dog!' or 'She looks like a dog!' this is more clearly the original (and so far only) meaning. The ability to choose from metaphor or simile to compare a person to a dog undermines the choice to call the usage a new sense. (Consider also how the usage can be optionally modulated phonetically: *She's a doooooog!* but not **I went to the pet shop and bought a new doooooog*, a contrast that highlights the pragmatic conflation.)

Words are artefacts. They have no existence outside those who use them. When the last speakers of a language die, the words die along with them. They are constructs of the mind and require the mind to keep them alive. They mean what they mean because we make them do so. Words do not *have* meaning. They need existence to have property. What there are are culturally- and individually-determined word forms and culturally- and individually-determined concepts that are cognitively and communally associated with each other.

For communication to work efficiently, each participant must have a reasonably

similar conceptualisation of the referents involved and know the proper word form to access it. If I came from a culture that knew only one kind of dog, say a teacup poodle, and I was talking to someone whose knowledge of dogs consisted entirely of pit bulls, communication might eventually break down. We would be talking about two different things though it might take a bit of discourse before we realised what the problem is. This is an exaggerated, unrealistic example, of course, but conceptualisation is determined both by culture and by individuals.

Some examples from an entirely different domain, mathematics, may help illustrate this. The algebraic expression $2(a+b)$ is not a paraphrase of $2a+2b$ because they are exactly the same and nothing is lost. These two expressions are more synonymous than any two words are. An example of a paraphrase in mathematics would be using 3.14 to express π . We use the Greek letter π to represent a number that cannot be expressed in standard notation, but which nonetheless exists as much as any other number does. Yet when solving an equation that calls for it, most of us will use the number 3.14. The exact and otherwise inexpressible number is very similar to the concepts that we've been discussing, while the Greek letter is like the word-form. It gives us direct access to the concept and allows us to convey the inexpressible in a very concise manner.

For communication to work, the listener must know both the concept and the form we use to express it. So what happens if the listener doesn't know one or both of these and asks what it means? In the case of π , we could say it means 3.14, or we could say 3.14159, or we could say it is the ratio of the circumference of a circle to its diameter. Each of these would be a paraphrase. The first two differ in their accuracy and the last one is a definition, but a definition is always a paraphrase of some sort. The fact that there are three, and in fact more, paraphrases does not mean that π is polysemous;

the concept (the actual number) that is its referent is a very specific number and does not divide into separate senses. The middle school student who solves an equation using 3.14 and the engineer who solves it using 3.14159 or an even longer expression are not employing different senses of π , just allowing for different degrees of accuracy, which may be akin to the qualia structure of Pustejovsky (1995) or Cruse's (2000) ways-of-seeing (in which the word *dog* may mean different things to a pet owner and a veterinarian but this does not threaten its monosemy).

Like any analogy, this one will fall apart before long if forced beyond its intended use, but an examination of the divergence may be just as useful as its overlap. For our discussion, there are two kinds of mathematical expressions. Numbers such as π and the square root of 2 are irrational numbers. The numbers they refer to are very specific; they cannot be expressed using what are called 'real numbers,' but their meaning can still be conveyed. The other kind of expression is that set of real numbers. Both of these are short-cuts to very specific numbers, numbers which are essentially concepts and don't have any real existence. (*Two* is a very useful, important and fundamental concept, but there is nothing in the physical world that can be called a 'two,' not even the various written forms, except the idea constructed in our minds. Like π , it is a concept that exists because humans say it does.) However, bringing this back to the linguistic/cognitive phenomenon, the concepts that words like *dry* or *jump* refer to have very fuzzy boundaries, which is not the case at all for π . It means exactly the same thing in 2π as it does in $\pi+32$. Different things are being done to it in that it is being multiplied in one and having something added to it in the other, and the end result of the full equations are different, but the meaning of π does not change in the two expressions. This appears to be not the case with *dry clothes* and *dry wine*. We could argue that *dry* has different meanings here, or we could argue that the meaning of *dry* is

extremely vague (involving lacking something, be it water or sugar, or oil in the case of skin, mucus or phlegm in the case of cough, or emotion in the cases of voice and humour), but neither argument is applicable to π which has but the one meaning which is far from fuzzy. (I am, incidentally, not unaware of other meanings of π which are specific to the fields of electricity and physics/chemistry, but these don't—to my admittedly limited understanding which here must rely on dictionary definitions—partake in the meaning of the mathematical concept; they seem to pivot on the form rather than the meaning, the Greek letter being employed to refer to unrelated concepts just as the English letter x can refer to algebraic variables, the crossing out of something, etc.)

Furthermore, an expression like *dry county* (a county in America in which the sale or consumption of alcohol is illegal) seems to have something else happening to it. I can perhaps accept for the sake of discussion that *dry clothes* is a simple A+B formation in that the two words combine in an obvious way, but there is a jump in meaning in *dry county*. Despite my perceived need to explain the term, the combination is intelligible and therefore cannot be dismissed as idiomatic. There is what will be described here as a 'latent metaphor' though this example is drawn not to illustrate a specific kind of word combination but only to illustrate that words combine in different ways, that an overall meaning can be more than the sum of its parts. The word *sum* (surely part of a Lakoffian metaphor system) brings us back to the mathematical aspect: in mathematics, an equation can never be more than the sum of its parts.

Words, then, are not polysemous; they are polysemised, an act performed by their users and recorders. Polysemising is a reification of a word's meaning(s) or at least a formalising of them. Polysemy is not a property of words or meanings. It is a by-product of formalising them, of thinking meanings are discrete, manageable things. It is

not that new meanings are created but that the old one is stretched. Or, more pragmatically, the word is applied to contexts where it had not been found before, but not in contexts so novel that they could not possibly be understood. This stretching is an act of creativity on the part of the producer and also requires him or her to assume that the receiver will be able to comprehend the new re-contextualisation with little problem. The new use may stop right there and be a nonce usage or it may garner currency. This perhaps is the allure of formalism: in ascribing form to the formless, we now have something to talk about. But this is also the problem: we are one step further removed from the referent.

If my stance on polysemy is decidedly anti-formal, it is because formalism, when applied to polysemy, becomes a self-fulfilling prophecy. Once one meaning is formalised, there can always be cases, new or established, that don't fit. Like pistachio nuts, you can't eat just one. Formalism creates polysemy, or the illusion of it, or the need for it. It starts with the form and then sees meaning as a property; following this, meaning then itself becomes formalised as a definition. It breaks it down into seemingly countable chunks. Formalism in linguistics is largely associated with the Chomskian school but it has always been around. Lexicography is ultimately so formalistic a discipline that I would not even call it a precursor. Words are looked up by their form, and meanings are divided into forms.

If words were really entities 'out there'—forms in the Platonic sense—then their form would have to be amorphous. As long as words are used, they are in flux, except perhaps for fossilized entities like *(to and) fro*. Any user with a decent command of the language and a justifiable trust in her interlocutor can stretch a word; it is a privilege we enjoy as language users. What is new is not the meaning but the context.

To draw upon another philosopher, words are akin to Descartes' piece of wax.

Descartes had a piece of wax and noted its properties, its appearance, its feel, its smell and its taste. He then took it to a candle and melted it so that all these properties changed; it no longer smelled or tasted the same, having now been burnt, and it certainly no longer looked the same. Yet he knew it was the same piece of wax. It is this conclusion (rather than his ultimate one, which was the senses alone are insufficient to grasp the nature of an object but that the mind is necessary for this) that is important to us here.

The Descartes simile can be applied to both form and meaning. Many words can be spelt differently (such as *spelt*) and many more have changed their accepted spellings over the centuries. Furthermore there is the matter of individual differences in handwriting and typesetting. And there is, of course, more variation in the spoken forms, including not just dialectal differences but the vast array of idiolectal diversity. No two people will pronounce a given word exactly the same (given the different timbres of their voice in addition to other aspects) nor will one speaker pronounce the word exactly the same all the time (given the differing stress patterns of its various contexts), yet no one argues that these constitute different forms. Even form, for as solidly delineated as we consider it, is an abstraction that idealises away immense differences. Like the piece of wax, we know it is still the same word because our minds tell us so.

But it is meaning that primarily concerns us here. When a word is put in different contexts (such as *compose* in *He will compose a symphony next* and *He will compose himself in a moment*), we may be tempted to say it has changed, but to do so is to say that the piece of wax is no longer the same entity. Sometimes this may well be the case but it needs to be demonstrated rather than assumed. When assumptions and intuitions are the sole criteria for sense distinction, there is no process to keep these in

check.

Suppose, however, Descartes had shown the piece of wax in its original form to a friend, and then, behind closed doors, took the wax to the flame and reformed it, his friend, upon examining the 'new' piece might well assume it to be an entirely different piece. This is a reasonable metaphor for lexical change as a historical process. Descartes was privy to the process of the changing the wax, but on the whole, language users were not present when new uses of words are coined. We do not see the process, only the effects, and we do not generally theorise about the relationships. Only in cases where a metaphoric sense is clearly bound to a more frequent base sense, such as *flavour*, do we seem to have an awareness of the relationship. We may, of course, be aware of other such instances, but these seem to vary from individual to individual; we all, that is, have an awareness of certain sense relationships because a particular word just happened to catch our attention or because of a misunderstanding or misreading, etc. The reason why *chestnut* can refer to an old joke or *lemon* to an unreliable car may be lost to history or folk etymologies but these do not prevent us from using the words effectively.

Ultimately, in order to have a well-developed understanding of polysemy, you have to have a theory of meaning that allows for it, and in trying to form one, you realise how slippery it is. Hanks' (2000) article entitled 'Do word meanings exist?' and Kilgarriff's (1997) 'I don't believe in word senses' (both discussed in Appendix 1) are refreshingly honest. Earlier in the life of this thesis, I sought out anyone professing to understand polysemy; now I would view them with suspicion, a misgiving that can probably only be overturned by hearing them admit that the concept is either false or unknowable.

Homonymy is not an entirely different matter. To say that homonyms have the same form betrays an assumption that something different already exists. Looking at it

in a strictly formal setting, two words that have the same form should, after all, be one word. If I said that the (nonsense) word *prohtic* was homonymic with *prohtic*, it's because I see a difference between the two, a difference that has nothing to do with form. Else why would I claim there are two words denominated *prohtic* instead of just one?

So we have two elements to a word already: the formal and the non-formal. The form is received; it existed prior to any analysis we perform on it (barring my use of a pseudo-word above). The non-formal element, by which we obviously mean the word's meaning (and perhaps other elements not relevant here) is a different case. Meaning is not formal. It can be formalised but this is a far cry from the pre-existence of form. Formalisation is problematic. Ask 100 native speakers to spell the word *tree* and presumably you'd get 100 identical answers; ask them to pronounce it and there would be very little variation at the phonetic level. Ask them, however, to draft lists of semantic traits and you'd probably get near 100 different lists. Form is, to some extent, socially constructed or at least agreed-upon; formalisation is usually the work of an analyst or group of analysts. While I don't doubt that such work can be purely exploratory, there is quite often an agenda of sorts. If, for example, I attempted to formalise meaning so that I could demonstrate that two meanings are related, I could keep listing semantic traits until I've proven so, and stop doing so once I have.

Meaning is extremely resistant to the formalisation process. At best, we are done listing traits when we can no longer think of any more to add. Except perhaps for troponyms (a semantically more specific word, *scribble* being a troponym of *write*) and chestnuts like *bachelor* and *spinster* that are polytrophic upon other words (*male* and *unmarried* for example) there is frequently no clear finishing line to cross; there can usually be more traits to add. The notion of semantic primes, while once a promising

prospect, has failed to realise its promise.

Further, you could argue that the word form *is* the formalisation of the meaning. There is, for example, a familiar occurrence for most people of water falling from the clouds. Sometimes it is heavy and sometimes light. Sometimes it is accompanied by thunder and/or lightning and sometimes not. This occurrence, or this variety of occurrences, is formalised as *rain*. ('Formalised' since rain certainly existed well before any language had a word for it.) This word gives us direct access to the concept and renders individual variations (light, heavy, etc.) immaterial. Listing semantic traits, then, is an effort to bypass the received form and replace it with another, much more cumbersome one.

Formalism has a certain appeal in its ability to make aspects (here, of language) discrete and analysable, but this is denied us here. Meaning is not discrete. Despite the way dictionaries present them, as numerically delineated, sequenced or nested entities, the meanings of polysemes often bleed into each other. This makes discussion of monosemy, polysemy and homonymy rather messy. Claiming that *animated* has two meanings for animated movies and animated discussions is to presuppose that these are already different entities rather than one unified one, and on some level, these meanings really are just one. (And on another level, they are different. The monosemy/polysemy distinction is little more than a predisposition to the level of analysis one prefers.) Again, it is not good practice to change one word to prove that another has changed.

The monosemist approach applied in this thesis (which is not that words have only one meaning but that we should assume one meaning until additional meanings can be demonstrated) not only adheres to Occam's Razor but provides the best starting point for a non-formal analysis. Multiple entities imply countability which in turn implies discreteness which in turn implies form. There are cases of related meanings that I think

would be fairly uncontroversial (the literal and metaphoric meanings of *flavour*), but there are many others that have less clear boundaries, like the word *good* and the multitude of words it can associate with. Again, the word *boundaries* implies discreteness, and my point is not that some words have discrete meanings and some don't, but that discreteness is something that should be all together avoided when meaning is discussed.

It becomes important to talk of levels of meaning—not enumerable levels like those of a building but relatively-defined levels of 'deep' and 'surface.' That these terms already have currency in linguistics, and in formalism no less, is perhaps unfortunate as they should not be seen as parallels to Chomskian syntactic structures. Rather, these terms (and I believe two are sufficient) describe levels of polysemy. The deep level is relatively stable, susceptible only to historical drift, while the surface level is more robust and susceptible to contextual changes, which I've argued throughout represents only the illusion of polysemy. We've seen this already with the examples of *animated* above: the surface level accounts for how *animated discussions* and *animated movies* seem so different while the deep accounts for how these concepts are really the same.

It is this notion of deep and surface levels that poses the problem faced by learners. Native speakers may have at least a subconscious awareness of these two aspects, the relatively stable deep level of meaning (where *denomination* means exactly one thing) and the highly-susceptible-to-contextual-effects surface level (where *denomination* refers variously to financial coinage or religious groups). But even this subconscious level of knowledge is not available to the learner with a still-developing mental lexicon. Words are, generally speaking, learnt by their surface level traits. The religious meaning of *denomination* may be learnt years before the financial one is encountered, or vice versa, and they may be seen as different words, particularly if they

are learned via recourse to different L1 translation equivalents. The stability of the established L1 lexicon trumps the nascent L2 structure, retaining its division into two detached concepts unless the learner, clued in by the same word form, analyses and integrates the two.

This is why it is important for the user to read the entire entry of a given word in a dictionary—not to learn every meaning, a notion that would add considerably to the learning burden of a good many words, but because a bird's-eye-view of all the surface effects is necessary to see the whole. Recall Ruhl's methodology of the otherwise intangible monosemic meaning patterning out over a wealth of attested uses. If dictionaries are recorders of word meanings at the surface level, the Ruhlian deep level can be gleamed by observing all of them. The deep level, for native speaker and second language learner alike, is the abstraction, the whittling away of the surface effects, a smoothing out of extraneous details. It is a forest-for-the-trees scenario, and many learners are led to, and left at, the trees.

Despite my diatribe against the over-polysemising of words by lexicographers, a sufficient number of such surface-level accounts are necessary. The 20 definitions given by the *COBUILD* for the word *time* (ignoring the 53 phrases) remains excessive in my mind, with one sense denoting 'what we measure in minutes, hours, days and years' (exemplified with 'Time passed...') and another referring to 'the period that you spend doing something' ('...you need more time...') bordering on atom-splitting and weighing the entry down with fussy, hard-to-distinguish discernments. But if dictionaries take it upon themselves to chronicle words' surface effects, they should present just enough that the deep meaning can be ascertained.

The way we view the deep level, the underlying meanings, need not be etymologically accurate. The vast majority of the words we use existed long before any

of their current users; we were born quite late into their timespan and witness only relatively, or seemingly, stable entities rather than the gradually shifting sands of word meaning, except for a handful of words which undergo spurts of revolutions rather than evolution (*man* 'humanity' for example). As a lifelong record, and later CD, collector, I used to see an abstract connection between the word *album* in its 'record album' and 'photo album' usages, but it was abstract only until the first time I saw an album of 78s, which was very much like a photo album, book-like with each page housing a disc in much the same way as the pages of a photo album hold photographs. The phonographic use of the word simply continued on, outliving 78s, until the late 1960s when it reinvented itself to distinguish LPs of new material from compilations (and even then, some albums of new material can be more 'album-like' than others). But this doesn't invalidate my original vague conception of the word, which was essentially a collection of individual items stored together.

The bottom line is that word knowledge cannot be complete until the learner has some knowledge of both levels of word meaning. Surface-level-only knowledge, where many learners seem to get stuck, is rife with seemingly unrelated variation and does require each new sense to be tacked on, and then only when the known fails. Cultivating an awareness of the deep level of a word's meaning, though perhaps requiring an initial bit of cognitive investment not necessary when the goal is simply to learn the first meaning, will ease the overall learning burden of a polyseme, providing an aerial snapshot rather than mistaking a close-up of a single aspect for the whole.

Dictionaries, by and large, fail to facilitate this. In the example-sentence chestnut *The students are revolting*, we can see an abstract connection between the two senses evoked by *revolting*—both entail a turning away, the sudden taking of a new direction from something deemed undesirable (be it by people or one's head/line of sight). There

is nothing, however, in the *Collins-COBUILD* that unites these two senses; in fact, they are explicitly discrete by *revolt* (four senses, all entailing the political use) and *revolting* (one sense: 'horrible and disgusting') being two different headwords, though the thesaurus function of the CD-ROM version, not available in the print edition except as a separate volume, does give synonyms for both senses of *revolt*. Again, this is why it is useful for learners to read adjacent and nearby entries, but the editors of dictionaries could make this much easier by cross-referencing such words.

Definitions could be ordered in such a way to highlight underlying meanings. Nesting the definitions would help group local uses together, but nesting would be aided not by simply numbering definitions as 'II.1.b' (I doubt most users actually 'read' the numbers) but by physically indenting senses, thus 'wasting' space but making physically clearer the notion of subsenses. An added benefit is the potential eliminating of such senses, deeming them not worthy of the extra space.

The surface-deep level paradigm does not apply to all words or even all polysemes, only to those which are more susceptible to surface effects. Not all polysemised words have senses that sum to the underlying meaning. Again, the two meanings of *stool* do not pattern out to an underlying meaning. A dictionary could unify the two uses by referring to the 'commode' usage. I would like to think that the goal of a learners' dictionary is to help the learner learn an entire word, not to pinpoint a specific use. *Flavour*, too, does not hinge upon a deep analysis of the surface uses since there are essentially only two uses which are clearly related. Furthermore, deep analysis is fruitful only when the underlying meaning is not one of the actual, established uses; the closest thing to the underlying meaning of *flavour*, for example, is the literal, prototypical sense, which is not particularly interesting. Contrast this with *fork* where the underlying meaning is not the utensil (presumably the prototype for today's user) so much as its

shape.

Lexical metaphor, in fact, requires an awareness of the metaphor itself. I'm sure there are many learners who could, from a dictionary, grasp the metaphor of calling a person a *square* (i.e., unexciting and predictable), but I should think there are many others who would not. This could be spelt out briefly by the lexicographers with '...because of its unexciting shape' or something similar. (There are, incidentally, at least two separate metaphors stemming from the word *square*, the other entailing fairness—presumably because both the shape and such a person are 'straight' and 'even'—but neither is presented in the *Collins-COBUILD*.)

The research laid out here suggests many avenues of future research. First of all, I would like to modify the *General Service List* to accommodate the list of homonyms. This means each homonym would be represented twice or more, the frequency of each being calculated and, if still eligible, the words would be resequenced, and if not, they would be removed from the list all together.

Another project I would like to undertake entails having learners think about, deduce and predict metaphoric senses. Work along these lines which I've conducted in pilot studies has shown this to be a complicated issue. As noted earlier, some words are similarly polysemous across languages, such as *flavour* and *loud* in Korean; learners were able to understand the extended meanings quite easily, but it was not clear whether they already knew them or were simply hoping they would behave the same way in the L2 as in the L1. Metaphors unique to the L1 were a likely source of interference in L2 acceptability judgement and translation tasks. This overlap of metaphors that work cross-linguistically with those that don't make guessing attempts sloppy and unsure but, on the other hand, also suggest a possible merit in teaching the metaphors themselves, particularly the more complex cognitive metaphor systems outlined by Lakoff and

Johnson (1980). One single system (such as ARGUMENT = WAR) could provide clues to multiple words and also allow to craft nonce uses when needed, possibly facilitating communication when a more proper word is unknown.

* * *

I'd like to finish with one last example of monosemy, a word that I wrestled with and nearly considered polysemous with two antonymic meanings: *idiom*, and more particularly *idiomatic*. The word *idiom* is no stranger to applied linguists. A good body of pedagogical writings exists dealing with how idioms can be taught and learnt. When we talk about idiomatic English, we don't necessarily mean an English discourse peppered with idioms but rather English that is natural-sounding.

Consider, then, the following *BNC* sentence:

There are of course divisions of opinion as to the idiomatic nature of Brahms's writing, and none of these pieces lie easily within the hands.

The problem here is that *idiomatic* sets Brahms off from other composers, which is a markedly different situation than the use of the word with *English*. If *idiomatic English* is the kind that all native and near-native speakers produce, a variety that is either unmarked or else marked by its adherence to normality, then how can the same word be used to denote that which is marked by its own set of peculiarities? How can describing English as idiomatic refer to its un-idiosyncratic nature while describing Brahms as idiomatic refer to the very idiosyncratic nature of his writing? It would seem that *idiomatic* is an auto-antonym, a word that is its own opposite.

Chapter two discussed the risk of paraphrasing, that we remove a word from the equation and analyse rather the glosses we substitute it with. *Idiomatic* is not polysemous because we can gloss it with both 'idiosyncratic' and 'un-idiosyncratic.' We know that nearly every word can occur in a variety of contexts and that contextual effects can be very robust. That the word form itself remains constant is reason enough

to look for unity rather than division.

As usual, pragmatics is not far away. There is a variety of English which we may refer to as 'idiomatic English,' but there is no such baseline for classical music. Each composer is a separate idiom and there is no 'idiomatic classical music' from which they all stem and deviate. Language users and composers both create their product, but the former create, as in 'produce,' while the latter requires creativity, thus precluding such a baseline from being established. However, this is not completely unparalleled in language. Hemingway's English could certainly be called idiomatic in the same way that Brahms' music can. My own use of English could technically be referred to as idiomatic, as could anybody's, though we reserve the term for the more artistic deviances. Natural-sounding English is an idiom—not idiom in the sense of a group of words with an unclear meaning but idiom as in 'genre,' in the sense that technical English and conversation English are two different genres.

Part 3: Appendices

Appendix one: A review of Fontenelle (2008)

The year 2008 saw, as this dissertation was nearing completion, the publication of *Practical lexicography: A reader* (Fontenelle) which, as the subtitle implies, reprints previously published articles on dictionary making. Suggesting that my earlier observation on the shying away of the topic of polysemy in such texts may have been overstated, this volume contains three articles on polysemy as it relates to lexicography. However, the points they raise are largely, though not entirely, in line with those I have spelled out. This appendix, then, will review and discuss these three articles.

Culled from a variety of journals, proceedings and other sources, all the articles have been recontextualised into this new volume, and this new context warrants an examination of its own. Although the first chapter of reprinted material is Johnson (1747), all other chapters date from 1984 (a polysemy article in fact), with some 86% of the chapters having first been printed since 1990, and over 27% since 2000. Dismissing the Johnson as an outlier, the range of articles encompasses 22 years (1984–2006), during which time lexicography has seen much change with the personal computer and the development of corpus linguistics, conceivably the most compact change the field has known. Although reaching slightly further back in time, one article reprinted herein, Atkins (2002, 2008), addresses this very topic, contrasting her first experience with (bilingual) lexicography in 1967 with the methods she employed at the time of writing. Reviewing its history, I believe the field has indeed changed but not just in techniques and technology but, at least to the extent that Fontenelle (2008) represents the field, in its goals and very conception.

Of immediate concern is that over a quarter of the reprinted articles come from journals or conferences dedicated, at least in part, to computer science, and several other articles could just as well have been printed in computer-dedicated journals. There are

two aspects of the computer in modern linguistics: one being its use as a tool, something I have employed throughout, and the other, its use as a model, and it is this second aspect that warrants discussion. Computational approaches generally—there are exceptions—offer little in the way of how language actually works, focusing instead on how it can be simulated, which is fine but these explanations frequently end up portrayed or interpreted as the way language actually works. I have no problem with programming computers with the ability to process and understand human language (I'd like to tell mine a thing or two), but the computer is, at best, an odd choice for modelling human language, especially when we ignore the limitations of the metaphor. It may be true that the human brain has yet to figure itself out, but an understanding of how computers work isn't exactly culturally-shared knowledge among language users either, nor, for that matter, among computer users. The end result is not humanising the computer but, via metaphor, computerising the human brain's unique ability to use that which it itself has created: language. Yet it has become so deeply ingrained that we may not even recognise as computer-sourced such metaphors words as *input*, *output*, *monitor*, *process*, etc. Certainly, these words had established use long before the word *computer*, dating from the mid 1600s, was used to refer to what it refers to today, but they surely didn't become linguistic jargon by sidestepping their computer science meanings. Just as linguistics, as noted by Ruhl, was pre-dated and therefore influenced by lexicography, so too did the Chomskian revolution coincide with the computer revolution, becoming mingled together in the process. Formalism lends itself to computer models. These terms shared by computer science and linguistics are not without merit, especially in a Lakoffian conceptual metaphor system where they help us talk about the topic of language, but modern linguistics was (and is) still developing and those conceptual metaphors naturally evolved and reified into models. The use of

computer models for programming computers is an obvious necessity, but their use in understanding the brain needs to be regarded as nothing more than analogues and approximations. The relationship works both ways—computer science deals with 'computer language' and 'syntax errors'—and this certainly increases, bolsters even, the expansive range of the metaphor. It is, frankly, absurd that a machine that cannot effectively process language is used to model the brain, which can. It is important to see how the era in which we live, dominated to the extent it is by the role of the computer in today's society, colours our perceptions of things not directly related to microchips. This current paradigm will probably age as poorly as the *tabula rasa* has for many linguists today.

The reason I raise this point is not to place the current age in historical light but to discuss what I see as a potentially troubling consequence. It is worth recognising as a zeitgeist the fact that computer science texts regarding word sense disambiguation and the development of artificial intelligence are intermingled in Fontenelle (2008) with texts culled from 'pure' (I use the term non-judgementally) lexicography journals with no differentiation. In fact, the source context is a poor delimiter as several of the pure linguistics-sourced articles freely draw from computer science. This implies, very strongly if these articles can be said to represent the field(s), that the disciplines of lexicography and artificial intelligence development have fused together and now share at least some of the same goals. Apart from the brief biography of Fontenelle on the back cover identifying him as Senior Program Director with Microsoft's Natural Language Group, there is nothing in the title, blurb or cover graphics that would mark the book as a computer science volume—quite the reverse in fact as the front cover prominently bears the *Oxford Linguistics* imprimatur. I'm certainly open to the belief that the practitioners of one academic field can learn from other fields (Leonard

Bernstein's Chomskian analysis of Mozart springs to mind, as does Cruse's aforementioned application of the ring species to lexical semantics), but the articles are not presented as cross-curricular exchanges but lumped together indiscriminately. We are asked to accept that improvements in AI have some relevance to language users and learners who consult the dictionary and therefore belong in a book entitled *Practical lexicography*. This stance is so self-evident to the editor that no justification of it was deemed necessary. (Had the book, of course, been titled *Practical lexicography for programmers* or something similar, my complaint would have been completely neutralised.)

The second aspect of lexicography, as well as semantics and any other field that finds itself tackling polysemy, that needs addressing prior to turning our attention to the articles is that of lexical ambiguity, a concept I have downplayed throughout. *Ambiguity* is frequently considered synonymous with *polysemy*. The problem here is that the number of utterances that are ambiguous in real-life communication is extremely rare. We need only try to recall the last time we had such an experience. Polysemes and homonyms can be used in contexts—and in fact almost always are—where they aren't remotely ambiguous. While a computer may well have to choose between two or more meanings, a human in a worse case scenario would, I should think, be more likely to choose the wrong meaning rather than be stumped on which of the multiple 'candidate meanings' to apply. Recall, for instance, how I had misinterpreted the index entry of 'sense associations' in a book entitled *Dictionaries*; the meaning intended by its author was never in the running in my brain. Such rare cases may say more about the misinterpreter rather than about the functioning of language.

In one of the three articles in the polysemy section, Hanks (2000/2008)¹⁹

¹⁹ Citations will include the article's original year of publication so as not to muddle their historical placement.

examined 1,000 *BNC* instances of *bank* finding that not one of them was remotely ambiguous for the two meanings. While there is no objective reason why 1,000 instances should be taken as adequate proof, the claim stands on its own: lexical ambiguity is not the same as polysemy. Except for rare instances of actual misunderstandings, lexical ambiguity is the near-exclusive domain of semantics texts. It does not reflect actual language use. Ambiguous sentences can be composed to support nearly any point its author wishes to make regarding ambiguity or polysemy.

Further, polysemes and homonyms would indeed be ambiguous to computers even when they aren't to humans, in which event this may be a solid case of the computer model interfering with our understanding of human use of language. To claim that 'I need to get to the bank' (my example) is ambiguous is to assume the listener of such a sentence in actual discourse is, frankly, an utter moron. For it to be ambiguous, the speaker would not only have to be in a boat on water somewhere, probably within sight of land (if not I would expect *land* or maybe *port* would be more likely), and therefore have knowledge that it is a bank and not a shore, and he would just have to be discussing finances to the listener (otherwise this meaning shouldn't even be primed). I assume, then, that this is a matter of the computer-as-brain model rearing its head, that those who consider this sentence ambiguous do so because they assign to humans the same inability to comprehend discourse that computers have, which, frankly, I find a pretty offensive assumption for a linguist to make.

Where this semantic paradigm really falls apart is that in its efforts to attribute not just multiple meanings to words but also the potential for new ones, it now forces itself to deal with them by finding ways of discerning them. In other words, its efforts to 'ambiguate' words now affects the need to disambiguate them. If, as I have argued, the first process is unnecessary, at least to the extreme it is commonly taken, the second is

obviously even more so. The mistaken belief that word senses are discrete, countable, formalisable entities has created an extremely complex set of problems and processes.

We can turn, finally, to the individual articles. Two of the three articles composing the polysemy unit in Fontenelle (2008) are taken from *Computers and the humanities* and thus betray (in more ways than one, oddly enough) the theoretical standpoints associated with computer science. Presented in Fontenelle (2008) in reverse order of original publication, the first is called 'Do word meanings exist?' by Hanks (2000/2008). Its title and first sentence, 'My contribution to this discussion is to attempt to spread a little radical doubt' show the congruity of our views.

Despite his computer background, he is not unmindful that words and language have non-computer-defined existence. Meaning, to Hanks, is not a property of words: words have meanings only in context. He writes:

It is a question of fundamental importance to the enterprise of sense disambiguation. If senses don't exist, then there is not much point in trying to "disambiguate" them—or indeed do anything else with them. The very term disambiguate presupposes what Fillmore [(1975)] characterized as a "checklist theory of meanings". (125)

There is no evidence from this article that Hanks has read Ruhl—I suspect not—but their views are well aligned, as Hanks writes, 'The numbered lists of definitions found in dictionaries have helped create a false picture of what really happens when language is used.'

But the two differ in Hanks seeing words as having no meanings while Ruhl sees them as having only one, though it's questionable whether these stances are really all that different beyond their surface contrast—zero and one both signify non-plurality which is the focus of their theories. Meanings, to Hanks, are 'events, not entities.' What words have, if not meanings, are 'meaning potentials,' which are not that different from the highly vague monosemic meaning espoused by Ruhl.

While writings that are ultimately dismissive or at least suspicious of the notion of polysemy are relatively few in number, those that continue on by suggesting practical solutions are rarer yet. Hanks proposes not only an alternative but an intriguing one. This article originated as a talk at a computer science workshop and was subsequently published in *Computers and the humanities* but his is a very humanistic approach, stating that if 'it's not clear to a human, then it can't be clear to a computer.' What he proposes, then, is intended for computers but adapting it to lexicography proper requires little imagination or alteration. The approach stems from Wittgenstein's famous account of the word *game* and how the philosopher was unable to find a common trait shared by every use of the word. Not all games have competition nor victory and loss (such as ring-a-ring-a-roses), nor amusement, skill, luck, etc. Hanks concludes that traits such as these are 'probabilistic and prototypical.'

That Hanks chose to illustrate this further with a homonym rather than a polyseme could possibly suggest he is more extreme than me. I, like Ruhl, am generally satisfied to accord homonymy an 'exempt from monosemy' status. The homonym he examines is *bank* with its 'financial institution' and 'slope of land alongside a river' meanings (to him, senses).

By way of sidebar, I'd like to add that I have, incidentally, endeavoured to avoid this particular homonym on the basis of it being all too often the only example many writers ever use for homonymy. The words *dog* and *cup* suffer a similar fate in discussions of prototype theory. The field of academic research depends on building upon theories developed by others, but the *ad nauseam* regurgitation of their examples is suspicious at best. If such theories are to be understood to account for a sizeable chunk of language, limiting the scope of their application to the same two or three examples over and over very nearly has the opposite effect.

There is, however, a probable reason why *bank* has become the cliché it has: both meanings are concrete nouns that are clearly unrelated. Contrast this with other homonyms such as *can* (one concrete noun, one abstract modal verb), *bowl* (one concrete noun, one verb), *arm* (two concrete nouns, but one seeming like a polysemic extension of the other), *cell* (the biological sense and the prison sense being related, the homonymic meaning stemming from the world of animation), *lock* (one meaning, regarding hair, considerably rarer than the other), etc. The word *bank*, then, is neat and economical, getting the point across quickly. And this is all the more reason to be suspect of its use to encapsulate all of homonymy. It is perhaps the tidiest example of the concept rather than the most representative. To his credit, however, Hanks' analysis of this particular homonym, however, is a detailed and original one.

Having now painted myself into a corner where I dare not use his example, I chose a similar one with which to illustrate his point: *pen* with its 'writing utensils' and 'small fenced-in area.' Prototypically, *pen*¹ has these features:

- IS HANDHELD
- IS LONG AND THIN
- CONTAINS INK
- IS USED FOR WRITING
- HAS A TIP THAT IS EXPOSED FOR WRITING BUT COVERED WHEN NOT IN USE

While *pen*² has these features:

- IS OUTSIDE
- IS FOUND ON FARMS
- HAS A FENCE AND GATE
- IS UNCOVERED
- IS USED TO CONTAIN LIVESTOCK TO PREVENT ESCAPING OR WANDERING.

Neither of these lists should be taken as exhaustive; they are merely sufficient for illustrative purposes. These traits were labelled prototypical because exceptions exist, and many readers will already have found a few. Reeds and quills can be used for pens

in place of the manufactured variety, while children may be placed in playpens.

Use of either *pen*¹ or *pen*² generally employs a combination of traits. It's possible, however, that a usage may evoke none: a prisoner locked up in 'the pen' doesn't make use of any listed above, or to use Hanks' example, a bank of reeds does not use any of the traits he sets forth for the embankment meaning of that homonym. The word *typically* could be prefaced to each trait above.

Applying this to the dictionary, then, would result in a very different book, offering prototypical traits rather than definitions. The user would still be able to learn what a word refers to. L2 learners, for example, unfamiliar with the word *pen*² would be able to learn what one is by reading the traits, regardless of whether they actually know what a pen is (having never seen one, or having no translation equivalent in their L1). The caveat is that users need to understand that these are typical traits as it would be unreasonable to expect the dictionary to include *typically* for each trait listed.

As noted above, *bank* is an antiseptically clean example among less sterile cases (despite Hanks' surprising and undeveloped claim that one meaning 'shades into the other'), and *pen* is very similar in this respect. To further illustrate why I avoid this example, we'll examine what happens when applying this paradigm to less tidy examples such as our old friend *flavour* (which, I need admit, is one of the tidiest examples of polysemy I know). We begin with the following traits:

- IS PERCEIVED VIA THE SENSE OF TASTE, ASSISTED BY THE SENSE OF SMELL
- INVOLVES FOOD OR BEVERAGE

The question now becomes: should we list the metaphoric sense as a separate sense or keep it as one unified sense? My preference would, of course, be to make just one sense, but this is not easily done. True, *flavour*¹ typically entails food and the sense of taste, but does that leave us with 'flavour of the narrative' as a usage that falls outside the

range of typicality, or does it bring with it its own typical traits? If *flavour* typically entails food, a narrative is still a possible argument, since, by stating these traits to be 'typical,' we've allowed for—and in fact created—non-typical possibilities. The word *flavour*, after all, is typically used literally.

The alternative approach is to make the metaphoric a new sense, replete with its own range of prototypical traits. I would propose the following:

- INVOLVES SOMETHING THAT IS NOT FOOD OR BEVERAGE
- INVOLVES SOMETHING CREATED OR DESIGNED BY HUMANS RATHER THAN FOUND IN NATURE

There is a slight problem with the first one in that there is no typicality involved; the thing whose flavour is discussed *cannot* be food or beverage or else we're back at the first sense. This means, then, that Hanks' notion of prototypicality, while important, might be overstated, that it does not completely supplant the notion of required traits. I've no doubt that conventions can be developed to accommodate the distinction were a dictionary built upon these principles were to be compiled.

It's also unclear how detailed such traits need to be. Is 'food or beverage' enough? Do we want to include the smoke of pipe tobacco? Or is that covered by the implied adverb 'typically'? Since it's not covered by the food-or-beverage condition, can we assume that the use of the tongue is enough to make someone unfamiliar with the word *flavour* know that it falls under the first sense and not the second?

We're also back at our old problem: we've just set up *flavour* to account for a set of entities that are either edible or non-edible—in other words, pretty much any entity in the universe, raising again the question of whether the distinction is one we need to make.

The second trait, noting that the argument must denote something created by humans, is necessary because, as noted earlier, the metaphoric use of *flavour* cannot be

used to describe clouds, mountains, etc. Attempts to do so result in a dissonance in which the literal sense is evoked but clashes with the intended metaphoric.

If *flavour* is, as I indicated, a tidy example of polysemy, what happens when we apply this to downright messy cases of polysemy such as *register*? Of the many uses of this word, none strike me as particularly 'typical.' While I don't agree that the uses of *bank* necessarily shade into each other, I take it to mean that there are two fairly distinct meanings but that (to Hanks at least) the border is not well-defined. The verb *shade* here implies, literally and metaphorically, a grey area rather than a black and white distinction. *Bank* nonetheless minimises polysemy/homonymy to two meaning spheres, unlike *register* which is not remotely neat, with far more than two uses branching off in different directions at any given point, yet still maintaining a semblance of an underlying meaning. Consider the following uses:

- [1] please sign the register
- [2] cash register
- [3] register for classes
- [4] You told me but it didn't quite register the first time
- [5] an earthquake registering 5.5
- [6] an expression that registers surprise
- [7] speaking in the appropriate register
- [8] the lowest register of the clarinet

As the last two of these, while clearly related to each other, are a bit more distinct than the rest, it would be difficult to treat them in terms of typicality. If something registers, does it (proto-) typically entail the writing down (or computer entry) of information? Does it somehow involve a cline or scale such as the Richter scale, the range of emotions, musical or linguistic 'highness and lowness'? Whatever underlies these meanings, or even just the first six if we were to remove [7] and [8] for simplicity's sake, is not something which lends itself to typicality analysis.

The end result here is that while prototype theory has a lot to offer lexicography, it still does not resolve the problem of lumping versus splitting but imports the same

issues, casting them in new guises. The split of the two senses of *flavour* was still done because they were felt to be different and not because of any objective criteria that there are, indeed, more than one sense at play here. Furthermore, the notion of typicality obscures the issue when non-typical uses of a given word are available for use. If a word can have none of the listed traits yet still be the same word, can learners be expected to successfully decode such an instance using prototype-based dictionary? And while this has always been an issue with traditional dictionaries, the kind proposed by Hanks also does not encourage learners to use words in non-typical ways. Despite these claims, however, I think there is merit in taking steps in developing such a dictionary. These problems can be addressed and resolved, or at least accommodated, but at the heart of Hanks' writing is a good idea, one that may require a lot more work and promoting that it's currently receiving.

The second, earlier article reprinted by Fontenelle is the similarly-titled 'I don't believe in word senses' (Kilgarriff 1997/2008). The title is from Sue Atkins, spoken at a 1994 discussion at a workshop entitled 'The Future of the Dictionary,' which Kilgarriff borrows and Hanks acknowledges and plays with. The first paragraph seems to place us firmly in the computer field by employing words like *ambiguous*, *WSD* (*word sense disambiguation*), *module*, *human language processor*, *parser*, etc. But, as with Hanks, a more humanistic approach emerges, and these terms are brought up so they can be refuted. Whereas I have attempted to maintain a cognitive approach to polysemy throughout and have largely ignored computational or generative approaches as irrelevant to human pedagogy, Kilgarriff views the two paradigms as thesis (the school of thought entailing WSD) and antithesis (the conceptual metaphor system associated with Lakoff, Johnson and others), but rather than forging a synthesis as might be expected from the set-up, Kilgarriff essentially continues to detail the antithesis,

presenting it as a primer for proponents of the thesis.

We can therefore jump to his concluding remarks on the implications of the cognitive approach for programmers. First, Kilgarriff reminds his readers that the sense breakdown of any given dictionary is largely determined by its target audience and then warns that no such set of editorially-selected word senses should be expected to work for other purposes. Word senses are 'only ever defined relative to a set of interests,' (2008: 151) interests that may be incompatible with those of WSD. He concludes this section, however, with the following statement which acquiesces to the thesis:

For the medium term future, the appropriate language-engineering response to a use of a word or phrase, for which there is a valid interpretation in the knowledge representation but where the system is currently getting the wrong interpretation because the word or phrase's use does not match that in the lexicon, is to add another lexical entry (2008:151).

The third, and earliest, article is by Stock (1984/2008) and simply entitled 'Polysemy.' It is the most traditional of the three as well as the most practical. She begins with an assessment of Ayto (1983) who had proposed practical guidelines for the determining of senses by lexicographers. Ayto's methods include considering a word polysemous if its two senses each have differing superordinates. Stock's problem, and mine, with this is that it's a *post de facto* decision. Ayto seems to divide the senses and then justifies the division by claiming contrasting superordinates. A second problem is knowing when to stop. Ayto suggests making shape, size and material criteria for polysemising concrete nouns (which, worryingly, are the only words he examines) but apparently not colour.

Another issue regards the compatibility of superordinates. To use an exaggerated example, a table could have as superordinate FURNITURE but also FURNISHINGS, EVERYDAY OBJECTS, WOODEN THINGS. Ayto offers no guidelines for ensuring that the same level of superordinates are selected. A further problem I have (not voiced

by Stock) is the lack of justification regarding the promotion of superordinates as criteria. There is an unproven assumption here that polysemic senses automatically entail contrasting superordinates and vice versa.

Using corpus data, Stock proposes an alternate approach. (It should be no surprise that I'm not persuaded.) First she examines the words with what she considers clearly distinguishable senses. There are three procedures here, the first of which concerns a word's contrasting syntactic behaviour. We've already examined the problem of mistaking syntax for semantics or of making the former a criteria for splitting the latter. Note, for example, how the phrasing, '*count*' and '*uncount*' senses (Stock 1984/2008:156), silently redeploys syntactic properties to the semantic realm. The second procedure entails collocation, which also has been discussed earlier and nothing surprising occurs in her account to counter what I've said. The final procedure states that words that are ambiguous, creating sentences that can be read two different ways, clearly need to be disambiguated, which is surprising when she previously stated that non-linguists would find the use of *bank* by semanticists confusing since it is not ambiguous to the lay person. No comment is made about how a word may be ambiguous in one context but not in others. (I should hope *sperm bank* is never ambiguous.)

Stock next turns to 'meanings that are not clearly distinguishable,' my problem with which is probably self-evident by now: why should we want to distinguish that which is not clearly distinguished? Why, that is, is this preferable to unifying such meanings? Stock does address this but her conclusion is weak: 'the lexicographer must, given the existing methods of presenting dictionary information, make some sort of job of sorting them out into different meanings, normally numbered meanings' (Stock 2008:158)

She prefaces her treatment of such words with the caveat that it does not apply to words with figurative or metaphoric meanings. This is fine, but her rationale is quite at odds with the evidence I supplied earlier: 'it would seem that figurative extensions typically take the same syntactic environments as the literal sense from which they are derived' (Stock 2008:158).

Stock's second type of blurring of meanings, after metaphoric/figurative extensions, is in which words 'operate on a cline between two or more meanings' or 'bring in its train various nuances' She lists some 22 corpus instances of the word *culture*, separating two for the category of 'clearly distinguishable senses,' these being those involving blood cultures and cultures of germs. Her justification is that they 'have no no semantic link with the rest of the examples (2008:159). I disagree. The verb *cultivate* links, quite clearly, all uses of the noun *culture*. The remaining uses fall under the same treatment of *crawl* discussed earlier: there are pulls in certain directions but no evidence that these represented discrete senses (other than having enumerated senses as the only valid paradigm for lexicography).

Though published the following year, the following passage from Wierzbicka (1985), quoted in Hanks (2000/2008:128), is something I'd like to know Stock's take on: *An adequate definition of a vague concept must aim not at precision but at vagueness; it must aim at precisely that level of vagueness which characterises the concept itself.*

Fontenelle (2008) was considered here because I felt it too important a work to ignore. Two of the articles (Hanks' and Kilgarriff's) I had been aware of but unable to acquire, so the publication of the reader was welcome. In the end, I'm no doubt guilty of holding up the elements which agree with points I laid out earlier and criticising those which do not. Still, I remain alarmed by the silent alignment and integration of AI development and lexicography and the future it spreads before us.

Appendix 2: Polyvalancy in the General Service List

A2.1 Homophones in the GSL

A2.1.1 Homophones with at least one corresponding term appearing in the GSL

Asterisks indicate one of the forms is inflected.

BLUE*	blew
BUY	by
BY	buy
DARE	dear, deer
DEAR	dare, deer
EIGHT*	ate
EYE	I
FLOUR	flower
FLOWER	flour
FOR	four, fore
FOUR	for, fore
HAIR	hear, here
HEAR	here, hair
HERE	hair, hear
HOLE	whole
HOUR*	our, hour
I	eye
KNOT	not
KNOW	no; knew, new
MAIL	male
MALE	mail
MEAT	meet
MEET	meat
NEW*	knew
NO	know
NOT	knot
ONE*	won
PASS*	passed, past

PAST*	passed, past
PEACE	piece
PIECE	peace
PLAIN	plane
PLANE	plain
READ*	red
RED*	read
RIGHT	write, rite
SAIL	sale
SALE	sail
SCENE*	seen
SEA*	see
SEE*	sea
SEW	so
SO	sew
SOME	sum
SON	sun
SUM	some
SUN	son
TENSE*	tents
TENT*	tents, tense
THAN	then
THEN	than
THERE	they're, their
THEY	they're, their, there
THROUGH*	threw
THROW*	threw, through
TO	too, two
TOO	to, two
TWO	to, too
WAIST	waste
WASTE	waist
WAY	weigh
WE*	our, hour

WEAK	week
WEAR	where, ware
WEATHER	whether
WEEK	weak
WEIGH*	way; weighed, wade
WHERE	wear, ware
WHETHER	weather
WHOLE	hole
WOOD	would
WOULD	wood
WRITE	right, rite

A2.1.2 Other homophones (corresponding word form not in GSL)

Asterisks again indicate one of the forms is inflected.

ADD	ad
BITE	byte
BOARD*	bored
BUT	butt
CAPITAL	capitol
CENT*	sent
CHECK	check
CLOSE	clothes
COUNCIL	counsel
CURRENT	currant
DIE	dye
DO	dew (in American English)
EARN	urn
FACT*	facts, fax
FAIR	fare
GATE	gait
GREAT	grate
GROUND*	(past tense of grind)

HEEL	heal
HIGH	hi,hire (higher)*
HIRE*	higher
HORSE	hoarse
IN	inn
KEY	quay
LOAN	lone
MAIN	mane
METAL	meddle, mettle
MORNING*	mourning
MUSCLE	mussel
NONE	nun
NEED	kneel
PAIN	pane
PAIR	pare
PALE	pail
PAUSE*	paws
PER	purr
PRAY	prey
PRINCIPLE	principal
PROFIT	prophet
PULL	pool (in some dialects)
RAIN	reign
REAL	reel
RING	wring
ROAD*	rode
ROLL	role
SEEM	seam
SELL	cell
SHARE	shear
SICK	sic (itself homonymic)
SIGHT	site
SIGN	sine
SLOW	sloe (rare)
SORE	soar
SORT*	sorted, sordid

SOUL	sole
STAIRS*	stares
STEAL	steel
STRAIGHT	strait
SUNDAY	sundae
SWEET	suite
SYMBOL	cymbal
TAIL	tale
TEA	tee
TEAM	teem
TOE	tow
WET	whet
WHICH	witch
WINE	whine
WRAP	rap

A2.2 Homographs in the GSL

Written form	Pronunciations	Example
CLOSE	/klos/, /kloz/	Close the door before he gets too close
LEAD	/li:d/, /lɛd/	The lead singer developed lead poisoning.
LIVE	/lɪv/, /laɪv/	They live for live concerts.
MINUTE	/mɪnət/, /maɪnɪt/	I'll need a minute to go over the minute details.
PRESENT	/prɛzɪnt/, /prɪzɛnt/	In the past, he hated to present speeches, but in the present it's not a problem.
PRODUCE	/prədʊs/, /prodʊs/	Farmers produce produce.
READ	/ri:d/, /rɛd/	Tomorrow I will read the book you read yesterday.
ROW	/rou/, /rau/	This was their third row in a row. (mainly in British English)
WIND	/wɪnd/, /waɪnd/	The wind will wind its way through the crevices.
WOUND	/wʊnd/, /waʊnd/	The bandages were wound too tightly, making the wound worse.

A2.3 Cognitive homonyms in the *GSL*

Cognitive homonyms are polysemes that have drifted so far that there no longer is a clear connection between them. As such, what constitutes cognitive homonymy is a judgement call, and the list below is composed of my own such calls.

Asterisks here indicate more than two meanings.

BAR*	beam of steel, pub, bar exam, to exclude
BEAR	to give birth to, to sustain (something unpleasant)
BELT	a strip (of leather, land), to shout or sing loudly, an alcoholic drink
CHARGE	electrical ~, ~ card, to officially accuse of crime, to make a rushing attack
CHEST	upper torso, treasure ~
CLUB	'I've a good mind to join a club and beat you over the head with it!'--Groucho Marx
COAST	to move easily/not work hard, coastlines
COMPANY	a corporation, fellowship/visitors
CONCENTRATE	to focus one's thoughts, chemical solution of increased strength (i.e., juice)
COUNTRY	nation, far from the city
COURSE	direction or path (including 'of course), an area constructed for certain sports (race ~, golf ~)
COURT	place of law, an enclosed area, monarch's place of residency, to woo/to invite (disaster)
CROSS	intersecting lines, angry or ill-mannered
CRUSH	to smash, infatuation
CRY	to weep, to exclaim
CULTURE	customs/refinement, cultivated cells
CURE	to treat medically, to preserve (by salting, drying)
CURRENT	a flow, the present (adj)
DATE	to see romantically, to reveal one's age indirectly (That dates me!)
DEGREE	unit of measurement for temperature or angles, level of completed education
DRAG*	to pull along, ~ race, women's clothing worn by a man, boring situation
DRAW	to sketch, to pull
DRIVE	to operate a motor vehicle, disc ~
DUTY	one's responsibilities, a payment enforced by law
FAINT	to lose consciousness, hard to perceive
FALL	autumn, to descend (often accidentally)
FAST	quick, secure

FENCE	surrounding wall, to engage in fencing
FIGURE	form, to think
FINE	good, very small, sharp
FIRE	flame, to dismiss
FLAT	~ tire, an apartment (in British English)
FOOT	body part, 12 inches, ~ the bill
FORMAL	correct and serious (~ language, ~ attire), related to form (especially in art: formalism)
FORWARD	toward the front or future, presumptuous/direct
GAME	competition, crippled (limb), certain wild animals
HABIT	something done regularly, a piece of clothing worn by nuns
JUST	only, fair
KIND	gentle-natured/friendly, a class (including kind of)
KNOT	a fastening (of rope), nautical measurement
LATE	tardy, recently deceased
LEFT*	opposite of <i>right</i> , past tense of <i>leave</i> , liberal
LETTER	writing character, missive
LOT*	much (a lot of), a yard (of land), random resolution of disputes, a portion
LOVE	the emotion, a score of zero
METRE	measurement of length, poetic or musical rhythm division
MIGHT	(modal verb), power
MOUSE	rodent, computer peripheral
NATURE	the natural world, inherent quality
NUT	hard fruit, eccentric or crazy person, part for securing bolt
ORDER	sequence/(properly) organised, direct command
ORGAN	body part that performs a specific function, musical keyboard
PARK	public area for recreation, to bring a vehicle to a halt in order to leave it there
PASSAGE	the act of passing (a law, etc.), travel (by sea), a (narrow) passageway, a short part of a book considered by itself
PATIENT	to have patience, a doctor's client
PICK	to pierce/thrust/detach, to choose, to pluck with a plectrum
PLANT	flora, a factory

PRESENT	a gift, the current time
PRESS	to push/printing press
PRETTY	attractive, moderately
PRIVATE	not public, military rank
REALISE	to become aware of, to bring to fruition (dreams, designs)
RIGHT	(see homonyms above), conservative
ROCK	stone, to move back and forth, a kind of music
SEASON	a division of the year according to weather patterns, to add spices or herbs to food
SECOND	next after the first, one-sixtieth of a minute
SENSE	the five physical abilities, to be vaguely aware of something, opposite of nonsense, one meaning of a word
SENTENCE	a linguistic construction, a period of punishment
SHOOT	to use a gun or camera, new growing parts of plants
SHOWER	a spray of water, a party before marriage or childbirth
SPIRIT	ghost, alcohol
SPRING*	the first season of the year, a source of water, a coil
STAFF	a long pole, people employed together
STAGE	a temporal division of development, a place for actors to act
STATE	a condition, the government, to make a statement
STONE	rock (including jewels), unit of weight (especially of a person)
STORY	a narrative, a floor of a building
STRIKE	to hit, an organised protest
TABLE	~ and chairs, tabulated data
TRAIN	railway cars connected together, trailing section of ceremonial dress/body of followers
TRIP	journey, to fall
TYPE	a category, to use a typewriter or computer keyboard
WATCH	to see, a portable clock
WHIP	instrument for flogging, member of a party in parliament

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