

Frame, phrase or function: a comparison of frame semantics and local grammars

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1. Introduction

In this paper I wish to address some issues that arise when considering the integration of lexis and grammar, and the mapping of semantic roles on to regularly occurring sequences of English. More specifically, I wish to compare the 'frame semantics' approach that underlies work done by Fillmore and his colleagues at Berkeley and the 'local grammar' approach underlying work carried out at Birmingham. My intention is not to denigrate either approach but to see how both might benefit from a recognition of their similarities and differences.

Since the development of large corpora for language research, it has become a commonplace to note that sense and syntax are connected in some way. For example, a number of writers draw attention to variation in the behaviour of individual lexical items that have several meanings. Sinclair (1991: 53-65) notes that the various senses of YIELD are differentiated by their syntactic patterning. For example, most instances of *yield* meaning 'give way' are intransitive, while most instances of *yield* meaning 'produce' are transitive. Roland et al (2000) identify verbs and their behaviour as transitive or intransitive in different corpora. Where there are marked differences, this is because the verbs have slightly different meanings in the two corpora. For example: *The ball floated downstream* (Intransitive; Brown corpus); *.float its big paper and British retailing businesses via share issues to existing holders* (Transitive; Wall Street Journal corpus). Hunston (2002: 46-48) notes of the noun *initiative* that as a count noun (with any determiner) it means 'something that someone starts to try to solve a problem', while *take/seize/lose the initiative* (with *the* only) means '(fail to) start something and so (fail to) gain an advantage over a competitor', and *initiative* with a possessive or with no determiner (an uncount noun) means 'the quality of being able to do things without being told'.

Further observations are that words with similar meanings have similar grammatical behaviour. Levin (1993), Baker and Ruppenhofer (forthcoming) and Dang et al (1998) all classify verbs based on their semantics and their syntactic behaviour. For example, Levin (1993: 177) describes a class of verbs whose members are *alter*, *change*, *convert*, *metamorphose*, *transform*, *transmute* and *turn*. These verbs all share what Levin calls 'properties'; that is, they all occur in structures such as 'The witch turned him into a frog', 'He turned into a frog', 'The witch turned him (from a prince) into a frog' but not 'The witch turned him from a prince'. Francis et al (1996, 1998) propose 'meaning groups' composed of words that share what is called 'pattern' and also aspects of meaning. For example, nouns complemented by prepositional phrases beginning with *among* include a group that refer to situations of conflict or competition: *competition*, *conflict*, *controversy*, *differences*, *disagreement*, *dispute*, *dissension*, *divisions*, *fighting*, *infighting*, *rivalry*, *split*, *struggle*, *violence*, *war*.

Sinclair and Levin account for these groupings in similar but converse ways. Levin (1993: 1) argues that '... the behaviour of a verb, particularly with respect to the expression and interpretation of its arguments, is to a large extent determined by its meaning.' Talking of discoveries inspired by corpus-driven lexicography, Sinclair (1991: 7) says 'Soon it was realized that form could actually be a determiner of meaning'. Although Sinclair ultimately rejects any directional causality between meaning and pattern, the opposition between 'meaning causes behaviour' and 'behaviour causes meaning' is an important one to this paper.

The association of sense and syntax has a number of important consequences. Firstly, a word may be used in an unusual way but its meaning will be recognisable from the pattern it occurs in. Hunston and Francis 1999 (100-107) give a number of examples such as

He couldn't apologise his way out of this. (Pattern: **V way prep**)

There is something almost American about the minister's informality. (Pattern: **something ADJ about n**)

...as if by doing so I could debate him into loving me. (Pattern: **V n into -ing**)

These patterns, which are very productive (i.e. the lexical items they are used with are relatively unrestricted), are prime candidates for using words in unusual ways. Secondly, through diachronic change, words may take on new meanings with the patterns associated with those meanings. E.g.

It was *big of you to take the risk*. (H&F 1999: 105) (= good of you)

A Labour MP *leaked him a copy of the committee report*. (= gave)

The Governor *'remains comfortable that no innocent person has been executed'*. (= confident)

Thirdly, genuine ambiguity is relatively rare (Sinclair 1991: 104-5; also Mason and Hunston 2001) and occurs when, in Sinclair's terms, a series of open choices leads by chance to a sequence that would exist also by virtue of the idiom principle. The rareness is exploited in jokes (see Hunston and Francis 1999: 23; Hunston 2002: 149; and Hoey 2002). Where ambiguity occurs 'by accident', it is raw material for the 'humorous cuttings' pages that many newspapers invite their readers to contribute to. An example spotted recently is this from the Guardian cuttings column:

Volunteers at a Worcester charity shop have walked out after their manager was allegedly suspended over a poster hanging in the window.

The humour here depends on the apparent ambiguity of *suspended*, which can mean both 'hanging from a point' and 'temporarily removed from work'. Concordance lines for 'suspended over' (below) show that both meanings of *suspended* are represented. Thus the sequence 'suspended over', without more co-text, is indeed ambiguous. The two meanings are distinguished by what follows *over*: a physical location or object (often water) in sense 1; a claim, allegation or crime in sense 2. They are also distinguished by subject: an inanimate object, or a person identified by name in sense 1; a person identified by role in sense 2. In the twenty (randomly selected) concordance lines displayed there are no exceptions to this. In the Guardian cutting, however, the subject is a person identified by role and the prepositional phrase indicates something that appears to be an object. This leads to the ambiguity and hence to the humour. (The synonymy of *suspended* and *hanging* is another factor, of course.)

of greens. Boat-shaped planters are suspended over an emerald pool and, his deputy, Volodymyr Dyakov, were suspended over the crash of a Russian they consist of a shoe frame suspended over a 6&inch; high plastic high school students have been suspended over a schoolyard bashing at a Channing woke up in her bedroom suspended over the water, the center of since the bank's operations were suspended over allegations of fraud. Mr Stoke Mandeville Hospital have been suspended over a waiting list scandal. insisted Major Ingram will not be suspended over the insurance investigati Ministry staff. Five workers were suspended over the photos - including Last week, a 16-year-old pupil was suspended over alleged cannabis dealing members of his force have been suspended over the death. <hl> Horse and A red paper accordion bell is <p> suspended over the table. Nate bumps it low in such a way that the dough is suspended over the coals. The bannock is wax into a double boiler or a basin suspended over a pan of hot water and st where two ward parties have been suspended over claims that members worke of Rune Hauge, the agent currently suspended over his role in the George Morgan. <pg> 6 </pg> <hl> Officer suspended over shooting </hl> <date> <pg> 2 </pg> <hl> Police chief suspended over fatal shooting </hl> crash-landed into its facade and suspended over the streets. Blurring the melt the white chocolate in a bowl suspended over simmering water. Once

The writers cited above, while they observe similar phenomena, are not united in their interpretation of them. Comparisons have been made, for example, between Fillmore's FrameNet and Levin's verb classes (Baker and Ruppenhofer forthcoming), and between Levin's classes and Francis et al's meaning groups (Hunston and Francis 1999: 142-146). Stubbs (2001, 2002) notes that a range of apparently overlapping work exists and appeals for a more focused discussion of the similarities and differences. In this paper I want to investigate one pair of research outcomes which, at least at first glance, seem remarkably similar. These outcomes are: frame constituent annotations as produced by researchers at the University of California Berkeley; and local grammar annotations as produced by researchers at the University of Birmingham. To observe their similarity, consider the following:

FrameNet website: 'difficulty'

ACTIVITY		DEGREE	'NODE'	EXPERIENCER
Longer communications with the computer	are	extremely	difficult	for novice users.

		'NODE'	ACTIVITY
It	Was	difficult	getting motivated on a night like this.

Hunston and Francis 1999: 'evaluation'

EVALUATED ENTITY		EVALUATIVE CATEGORY		AFFECTED ENTITY
Life	Is	difficult	for	males with a family in tow.

		EVALUTIVE CATEGORY	EVALUATED ENTITY
It	Was	pretty difficult	reading into a man's mind.

There are differences in terminology here, but the basic concept appears to be the same. In each case, the sentence is parsed using a set of 'frame elements' (Baker et al 1998) or 'meaning elements' (Hunston and Francis 1999). Those elements are not identical, but they are by no means incompatible. In each case, furthermore, the sentences are among those that have been chosen to represent the behaviour of the word *difficult* as it appears in a large corpus. Is this a case of two minds with a single thought? Of two versions of the wheel being invented on either side of the Atlantic? This paper seeks to answer these questions.

2. Methods and assumptions 1: frame or function?

Accounts of the FrameNet method and its assumptions appear in a number of papers, notably Lowe et al (1997) and Fillmore and Atkins (1992), as well as in the book published on the FrameNet website (www.icsi.berkeley.edu/~framenet). This method begins with individual lexical items ('words'), and argues that every word brings with it a set of associated concepts that might be related to a 'script' (as in schema theory and other models of representing real-world knowledge computationally). For example, 'restaurant' brings with it a frame that includes a menu, waiters, choosing, eating and paying for food and so on. The FrameNet project involves: identifying frames; identifying the elements associated with each frame; identifying the lexical items associated with each frame (different senses of words might be associated with different frames); and mapping the frame elements on to example sentences containing the target lexical items, obtained from several large corpora. To quote from Lowe et al (1997: 2-3):

'In frame semantics we take the view that word meanings are best understood in reference to the conceptual structures which support and motivate them. We believe, therefore, that any description of word meanings must begin by identifying such underlying conceptual structures. *Frames* have many properties of stereotyped scenarios – situations in which speakers expect certain events to occur and states to obtain. In general, frames encode a certain amount of 'real-world knowledge' in schematised form.'

Some fairly simple examples include the *commercial transaction frame* (Fillmore and Atkins 1992: 79). Elements from this frame, such as BUYER, SELLER, GOODS and MONEY map on to the typical uses of verbs such as *buy*, *sell*, *charge* and *spend*; for example:

BUYER buys GOODS from SELLER for MONEY

SELLER sells GOODS to BUYER for MONEY

SELLER charges BUYER MONEY for GOODS

BUYER spends MONEY on GOODS

Another simple example is the *health frame*. Elements are mapped on to sentences as follows (Lowe et al 1997: 7):

HEALER		BODYPART		TREATMENT
The doctor	treated	my knee	with	heat.

HEALER		DISORDER
The doctor	Cured	my disease.

and so on.

A more complex example is the *risk frame*. Although for many frames, intuition and examination of examples will be sufficient to derive the frame elements, for the *risk frame* Fillmore and Atkins (1992,

1994) use categories developed in decision analysis. This enables them to identify in a very clear way the three uses of *risk* followed by a noun (*risk your life; risk the climb; risk an accident*), in which different frame elements are realised by the noun: a ‘valued possession’ (*your life*), a ‘decision’ (*the climb*), or a ‘harm’ (*an accident*).

I shall now turn to an approach to semantic parsing that is very different: Barnbrook’s local grammar of dictionary definitions (Barnbrook 1995, 2002; Barnbrook and Sinclair 1995, 2001).

Barnbrook’s corpus was the set of definitions in the Collins COBUILD Students Dictionary. These are, on the whole, one-sentence definitions that use the COBUILD ‘full-sentence’ defining style. COBUILD definitions are notable because they encode, albeit somewhat cryptically, a lot of information about how a word is used as well as what it means. In some cases it encodes what the user of a word means instead of what the word means. Barnbrook (2002: 7) cites these examples:

*If you call someone a **prat**, you mean that they are very stupid or foolish.*

*If someone calls someone else a **bastard**, they are referring to them or addressing them in an insulting way.*

Barnbrook notes that both these definitions treat the words *prat* and *bastard* as terms of judgement rather than of description. Both use *if* rather than *when*, and include the metalinguistic *you mean that or they are referring to them*. In other words, the words *prat* and *bastard* are not described as having an inherent meaning at all. In addition, as Barnbrook notes, the word *prat* is described as a word that ‘you’ (the reader of the dictionary) might conceivably use, whereas *bastard* is reserved for the enigmatic and much more foul-mouthed ‘someone’. Barnbrook’s program parses such definitions into elements which have names that are specific to the act of defining. For example, a parse of the first sentence above might be:

Hinge	Projection subject	Projection verb	Projection complement	Article	Headword	Projection subject	Projection structure	explanation
If	you	call	someone	A	Prat	you	mean	that they are very stupid or foolish.

What is noticeable here, in contrast to, say, FrameNet, is that the motivation for parsing this sentence in this way is based on the function of the sentence, not the words it has in it. Compare FrameNet:

He had called her a princess (from the entry for ‘call’)

SPEAKER	NODE	ENTITY?	NAME
He	had called	Her	a princess

[Note: on my screen, the colour given for *her* had no code, but ‘entity’ (a different colour) seems the most consistent labelling.]

The frame here is ‘name bearing’, and this sense of the verb CALL is assigned to that frame. There is no similarity between the labels ‘NAME’ and ‘headword’, of course, because the function of *If you call someone a prat* is quite different from that of *He called her a princess*. The distinction is between what in systemics (Martin 1992) is called the Modes of the two sentences. The first one constitutes the speech act of defining/naming, whereas the second one reflects the speech act of naming/defining. This may be illustrated further by FrameNet’s analysis of DEFINE, in a sentence which reflects on the action of defining:

...we have defined early mortality as appearing at less than thirty days.

COGNIZER	NODE	ITEM	CATEGORY
We	have defined	early mortality	as appearing at less than thirty days.

Compare this with a parsed, constitutive, definition (after Barnbrook):

The mortality in a particular place or situation is the number of people who die.

Article	Headword	Qualifier	Hinge	Article	Superordinate	Discriminator
The	mortality	in a particular place or situation	Is	The	number of people	who die.

Following the constitutive/reflective distinction further, here is FrameNet's analysis of a sentence including the word DEMAND, which reflects on the activity of 'demanding':

Tom Dale ... demanded a rethink at yesterday's council meeting.

Tom Dale = SPEAKER

a rethink = MESSAGE

It is difficult in an unannotated corpus to find sentences that encode constitutive demands,¹ but here are some based on the word *rethink*, that is, lines that might be reported as 'demanded a rethink':²

advert. Perhaps there should be a rethink there with pictures of tourists
 t help thinking that with a bit of a rethink, extra resources, a promotional
 can return to first principles and rethink the role of the state. Discharg
 said. `We have to have a complete rethink otherwise the whole thing will
 task. <p> And yet if you do rethink your company's business design,
 be that we've got to fundamentally rethink how we face these kinds of
 as Cairns points out, we must `rethink the meaning of societal
 are not the answer. Managers must rethink their roles and relationships f
 Page 22 <hl> We need a radical rethink on schools and hospitals; Opini
 Growth Pact. Yet without a radical rethink by policy makers of their fisca
 occupation like that--should really rethink its attitude toward its people.
 mankind must do nothing less than `rethink our way of life." Mr. Lovejoy
 of abusers. We must, therefore, rethink our strategies for punishing or
 and cinemas get smaller. Unless they rethink their role, at some point early
 gun control laws and to a thorough rethink of all our legislation relating
 unsupervised. Society needs to rethink how to provide fresh opportunit
 bogus. Fine. Mr Howard might need to rethink those referendum questions. May
 must act, and it will have to rethink its support for the motor car.
 bits? Quite. But Boots will have to rethink their men's shaving ranges as,
 school of thought, you may want to rethink your purchasing habits. Today
 hair for years, this is the time to rethink your shade. `Many women start
 from your diary, perhaps you need to rethink your mania. For the majority

Using Barnbrook's terminology, there are a number of types of demand here, which might be listed as follows:

'Modal' + verb

advert. Perhaps there should be a rethink there with pictures of tourists
 can return to first principles and rethink the role of the state. Dischargin
 gus. Fine. Mr Howard might need to rethink those referendum questions. Maybe
 its? Quite. But Boots will have to rethink their men's shaving ranges as,
 school of thought, you may want to rethink your purchasing habits. Today,

'Modal' + support verb + noun

said. `We have to have a complete rethink otherwise the whole thing will

If/unless + verb + outcome

And yet if you do rethink your company's business design, the result is a liberating
 experience.

Unless they rethink their role, at some point early in the 21st century cinemas will
 find themselves duplicating a domestic experience...

I can't help thinking + with + noun + outcome

I can't help thinking that with a bit of a rethink...it would double its sale.

This is the time to + verb

If you've been lightening your hair for years, this is the time to rethink your shade.

¹ The same problem exists for finding constitutive definitions. Barnbrook, in using a dictionary database, effectively has an annotated corpus. For the identification and parsing of definitions in an unannotated corpus, see Pearson (1998).

² Concordance lines for the item *rethink* were selected and edited to remove all except those which represented a directive speech act.

For these examples we might propose the following frame/semantic elements: Hinge; Modal; Actor; Action; Outcome (positive or negative).

Parsed examples would look like this:

ACTOR	MODAL	ACTION	OUTCOME
We	have to	have a complete rethink	otherwise the whole thing will slide into total oblivion
Mr Howard	might need to	rethink those referendum questions.	
	This is the time to	rethink your shade.	
	there should be	a rethink there	

HINGE	ACTOR	ACTION	OUTCOME
If	you	do rethink your company's business design	the result is a liberating experience.
Unless	they	rethink their role	cinemas will find themselves duplicating a domestic experience.
I can't help thinking that with		a bit of a rethink	it would double its sale.

Of course a complete local grammar of 'demand' would necessitate a much more detailed study, probably restricted to a single register. The point to be made here, though, is that treating the sentences as constitutive or reflective gives quite different results; one leads to an analysis based on the meaning of a word, the other leads to an analysis based on the function of the sentence. Reversing this is also true: an analysis based on the meaning of a word treats the sentence as reflective; an analysis based on the function of the sentence treats the sentence as constitutive.

3. Methods and assumptions 2: frame or phrase?

I would like now to turn to the work which awoke my own interest in local grammars. As with FrameNet, the starting point for this work was individual words, and the entries for them in dictionaries. The initial purpose of the work was not, however, to produce descriptions within semantic frames. The steps from dictionary entry to local grammar are set out below:

COBUILD: from lexical item to local grammar.

1. In line with the observation that words occur in sequences, and that meanings are distinguished by those sequences, words are given a grammatical coding. This is very 'surface' grammar and is intended for transparency, comprehensiveness and ease of use by learners. The codings are used in CCED.
2. Building on key observations by Gill Francis (1993) that most grammatical contexts have lexical restrictions, the words that share patterns are collected, in two books (Francis et al 1996, 1998). Different senses, as given in CCED, are distinguished. The lists are divided into 'meaning groups'. These are not motivated by semantic theory, as such, though some distinctions do owe something to other researchers. For example, verbs with the pattern **V that** are divided into 'saying' and 'thinking', reflecting Halliday's distinction between verbal and mental processes. In the large **V n** category, distinctions are made on the basis of how participant roles map on to clause elements e.g. *ask a question*; *ask permission* and *ask your mother* are in separate meaning groups, further grouped under 'communication'. In some places, information is given about alternations, although these do not form the basis of classification. For example, in the pattern **V n with n**, verbs which also occur with **V n prep** (e.g. *daub the walls with mud*; *daub mud across the walls*) are mentioned and listed, but they occur in a group with other verbs that do not show this alternation e.g. *engrave*, *furnish*, *stencil* and *trim*.
3. To help teachers find their way around the verbs book, we put in what we called a 'meaning finder'. This collected together similar meanings as they occurred through the book, and so in part compensated for the fact that many words and groups occurred several times in different sections. Again, the categories were not theory-driven but were simply a common sense grouping of

frequently-mentioned meanings. Some of the categories are: ‘Attacking and doing harm’; ‘Beginning, continuing and ending’; ‘Bodily functions and movements’; ‘Changing’; ‘Changing something or changing its state’; ‘Fighting and competing’; ‘Giving, getting and paying for things’; ‘Communication’; ‘Directing something at or towards someone or something’; ‘Eating drinking and smoking’. (Unfortunately there was no time to complete a similar ‘meaning finder’ for the nouns and adjectives book.) One of the things that this activity brought to our attention was that that meanings we were identifying were reflective rather than constitutive. Comparing our work with that of Wilkins (one of the pioneers of the notional approach to syllabus design for language teaching) we noted (Hunston and Francis 1999: 118-123) that Wilkins focuses on language in constitutive mode whereas our concern with lexical items, and specifically with verbs at that point, leads us to focus on reflective mode. For example, whereas a notional/functional syllabus might include an item such as ‘giving instructions’, our meaning finder has a category of ‘telling someone to do something’, but this in fact means ‘talking about telling someone to do something’ – examples would include *She told him to go home* rather than *You must go home*. Our lexical item-based categories were leading us towards a FrameNet model rather than a Barnbrook one.

- From the meaning-finder it was a short step to the proposal to map elements of meaning on to pattern elements. When all the relevant patterns of all the relevant lexical items had been parsed in this way, this was to be called a local grammar. (We used Barnbrook’s term without at the time recognising the essential difference between constitutive and reflective.) Because the relation between meaning element and pattern element remains constant, it was hoped that this approach could lead to automatic meaning extraction. However, the mapping of meaning element on to pattern element depends on both the pattern and lexical item that is the node word. For example, the meaning elements relating to a give word may be arranged differently depending on the pattern:

Word: *nuisance* (from Hunston and Sinclair 2000: 99)

Evaluation carrier		Evaluative category	Thing evaluated
<i>it</i>	v-link	n	to-inf
It	was	a damn nuisance	to have to put on new clothes and go out.

Thing evaluated		Evaluative category	Person affected
	v-link	N	<i>for</i> n
They	turned out to be	a nuisance	for match anglers.

Alternatively, a single pattern may have a different mapping of meaning elements depending on the node word:

Pattern: **V n to n** (Francis et al 1996: 427)

Reason for approval		Object of approval		Person who approves
	V	N	to	n
These qualities	recommend	Him	to	the electorate

Verbs: *commend, endear, recommend*

		Person who approves		Object of approval
	V	N	to	n
The company wants to	Attract	Investors	to	something new

Verbs: *attract, draw*

Thus, an approach that started with grammatical patterning and came to meaning second has led us to much the same place as an approach that began with meaning and with frame elements. If nothing else, the two approaches confirm each other. It is time now, however, to look at some of the conceptual differences between the two approaches, before embarking on a more detailed comparison of how the two approaches deal with the particular topic of evaluation.

4. Theories of meaning

The theory of meaning used by the Framenet researchers is that meaning belongs to a word: they refer to themselves as 'lexical semanticists' (Fillmore and Atkins 1992: 76). They specifically set themselves in opposition to those embracing semantic field theory and comment that 'a word's meaning can be understood only with reference to a structured background of experience, beliefs, or practices, constituting a kind of conceptual prerequisite for understanding the meaning' (ibid: 76-77). Another approach, espoused by Sinclair, Teubert and others, however, claims that meaning belongs not to the word but to the phrase.³ A corollary of this is that a word does not inherently possess a meaning, but that meaning is contingent upon immediate context.

To illustrate this I would like to take the example developed by Stubbs (2001) from a comment by Fillmore – *a ripe old age* – and extend it a little further. Here are a number of sets of concordance lines, each one illustrating one use of the word *age*: *of age*, *at poss age*, *a ripe old age* and *the ripe old age of*. The phrase *of age* turns out to occur predominantly in two sequences: *COME of age* and *months/years of age*, and these are shown separately in sets 1a and 1b below.

Set 1a: *come of age*

People said that the industry "came of age" in 1983 when the nominees included
boomed because the adults who came of age in the '50s and '60s, which was the
May on the day Sunday racing came of age in Britain, looks set to complete
us," Walsh said. "We need to come of age in these sessions." That's putting
seen diamond film technology come of age. By the mid-1980s, a few researchers
 <p> Cyberplonk has come of age. Supermarkets are selling wine over
<p> Kinnock generation comes of age <p> Charles Clarke's elevation to
new life to the phrase "a coming-of-age drama". Who knows what mainstream
long-held myths about the coming of age of a young hero who must go through
based on the novel. It's the coming-of-age story of a young lesbian reared
a contract promptly upon coming of age, or it will be enforceable against
of coming out and coming of age. A beautifully written and, in

Set 1b: *years of age*

babies show at 4 or 6 months of age is correlated positively with IQ
back line averaged only 20 years of age, but one which eases the pressure
for children aged under three years of age, it is generally safer for them to
enough for a man nearing 65 years of age. <p> I've sold out to the young
East on boys seven to ten years of age to produce not only harem eunuchs
of children under ten years of age was 1.63 for Italian children, we
take part. Persons under 18 years of age are ineligible to play. No purchase
an ex-serviceman at nineteen years of age <M01> <tc text=tuts> <M02>
WAIS-R&symbequal;91.8, 55-64 years of age: WB&symbequal; 87.6, WAIS&symbequ
t until about seven to eight years of age that most children can do laces u
until your child reaches 4 years of age. They have passed the safety

Set 2: *at poss age*

worrying about being mugged. At my age it's always reassuring to know that
he grows older. <p> But perhaps at his age your son is too young to manage
her many previous boy-friends. At her age it would be impossible not to have
and The Cardigans came on. At his age he should be wearing cardigans no
But why go for all that stress at his age? He might be popular now, but hal
But Parsons admitted: "Even at my age this competition is special. Three
Oh, no. No. I don't think--at my age, what does it matter? And I'm--I'm
that possibility, particularly at his age. But when I hinted at some person
was watching with interest. At her age, mid-twenties, we must have looked
sometimes feels depressed, at your age. Look, see you Saturday - the Do
to defend my homeland, even at my age." <p> Strangely, Mr Matveyev is le
t want to get married yet, and at his age I believe that to be very wise. W

Set 3: *a ripe old age*

a breakthrough cure to see him into a ripe old age. His predicament invites
living, have managed to live to a ripe old age. IN the Smart Money segment
find out what makes people live to a ripe old age. There are quite a lot in
we'd pick ones who lived to a ripe old age." 20 MAYBE QUT engineering
object. Whoever he was, he lived to a ripe old age," he said. "Ninety eight!
agents. If Jesus had lived to a ripe old age and died happily, the
a reasonable chance of living to a ripe old age. Today, at least in
and people have been living to a ripe old age, and I just don't think
Nor does cider inhibit progress to a ripe old age. Uncle Tom's Cabin has a
life's pleasures but survived to a ripe old age; at least he can take
was between 14 and 16 years old, a ripe old age for the species. It would

³ A third approach, adopted by Halliday, would suggest that meaning belongs to the choice between items, not to the items themselves.

Set 4: the ripe old age of

Our eldest son, James, has, at the ripe old age of 41, been given his ver of guacamole and yoghurt. Even at the ripe old age of 26, when I'm driving o Saint-Saens died in 1921, at the ripe old age of 86, crowned with all t of so much official patronage at the ripe old age of 67. He has become the emerged from a career slump at the ripe old age of 18 to take out another years and he is still working at the ripe old age of 76. `I don't look at t from Alois Klein. In 1979, at the ripe old age of 21, he opened his own hall generation. But now, at the ripe old age of 67, Lonnie is back. He debut as a teenager. <p> Now, at the ripe old age of 23, he can speak with was going to be a bike star -at the ripe old age of four. <p> That was whe become a big-time winner -- at the ripe old age of 71. Jack, a retired Po lead Swindon's attack again -- at the ripe old age of 40. The Robins' boss c until his death 35 years later at the ripe old age of 87. <p> Nikko never having passed away in 1992 at the ripe old age of 96. Nevertheless, his matter much now that Firmage, at the ripe old age of 28, has discovered The 8.95), who died recently at the ripe old age of 87, believed that wine started playing back in 64 at the ripe old age of ten, and it shows

The ‘meanings’ of these phrases seem to be:

Set 1a: *come of age* means broadly ‘achieve adulthood or maturity’. It has three more specific meanings: (of people) attaining legal majority; (of people) achieving emotional maturity; (of institutions) coming to be established in its social context.

Set 1b: *years of age* indicates how old someone is.

Set 2: *at poss age* is used to set a situation in the context of what is expected of people at certain stages of their life. For example, someone is expected to react in a certain way because they have lived a certain number of years, or someone is too young or too old to be required to do something.

Set 3: *a ripe old age* indicates that someone (or an animal) has lived longer than might be expected, and that this is a good thing.

Set 4: *the ripe old age of* is used either with a high number to indicate the same as set 3, or with a low number to comment on how young someone is, or in more general terms to draw attention to and comment on someone’s age.

I take it that any theory of meaning would have to treat *come of age* as a single lexical item. Leaving that aside, if we ask ‘what does *age* mean’, it would be possible to argue that it has two meanings: a neutral, measurement-of-life meaning, as in *four years of age*, and an affective, comparative meaning of something like ‘number of years compared with a norm’, as in *at your age, live to a ripe old age, at the ripe old age of 24*. An alternative view is that *age*, as a single lexical item, really has no meaning, but that *x years of age, at your age, live to a ripe old age* etc do have meaning, some of those meanings being comparative and affective.

The relevance of this for identifying and annotating frame elements might be illustrated with a couple of examples. The first is an example quoted at the beginning of this paper:

The Governor ‘remains comfortable that no innocent person has been executed.’

It was said there that in this case *comfortable* takes on the meaning of ‘confident’, by analogy with *confident that*. It would be possible to say (consistent with FrameNet) that *comfortable* evokes two frames, one of which is the ‘certainty’ frame that *confident* also evokes. But it is also possible to argue that what evokes the ‘certainty’ frame is not a word but a sequence – ‘**v-link ADJ that**’ – with certain adjectives filling the ADJ slot. The sequence might be expressed as:

link verb	<i>certain</i> <i>comfortable</i> <i>confident</i> <i>convinced</i> <i>doubtful</i> <i>dubious</i> <i>persuaded</i> <i>positive</i> <i>satisfied</i> <i>sceptical</i> <i>sure</i> <i>uncertain</i> <i>unconvinced</i>	that-clause
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Outside of this sequence, *comfortable* does not evoke the ‘certainty’ frame. My proposal is, then, that the unit of meaning identification is not the word, nor the pattern, but the word-pattern combination.

To explain Fillmore and Atkins’ own response to cases such as this I take again the word that they present in such impressive detail: *risk*. In their 1992 paper, Fillmore and Atkins list the various frequently-occurring syntactic environments occurring with the noun or verb *risk* – in Hunston and Francis’s terms, they list the patterns of *risk* – and they specify which frame elements occur where in each such environment. They then introduce some other usages which are less easily accommodated within the frame because, in those, *risk* takes on the meaning of other words and no longer ‘really means’ *risk*. To quote Fillmore and Atkins (1992: 96):

‘On developing the preceding categorization of the segments of sentences built around the verb RISK, we found a number of examples that did not lend themselves to a direct interpretation in terms of what we took to be the RISK schema. These words, in these contexts, seemed to mean more than just RISK.’

They go on to suggest that a word can overlap in meaning with, and can ‘inherit’ grammatical properties from, another word. This argument is rather similar to the one made at the beginning of this paper, where it was suggested that some words take on the meanings of other words when they occur in the same patterns as those words. These examples were given:

It was big of you to take the risk. (H&F 1999: 105) (= good of you)

A Labour MP leaked him a copy of the committee report. (= gave him a copy)

Fillmore and Atkin’s examples with *risk* include:

He feared to risk his two precious flattops to enemy submarine attacks.

Cf Dr James Smith... exposed his only daughter to smallpox in order to prove the effectiveness of Jenner’s remedy.⁴

In pattern terms, both *risk* and *exposed* have the pattern **V n to n**, with the noun in the prepositional phrase indicating ‘the threat against which something is unprotected’ (Fillmore and Atkins 1992: 97).

Roosevelt risked more than \$50,000 of his patrimony in ranch lands in Dakota Territory.

Cf Clive Sullivan...invested £2.5million in the club.

The noun following *in* is an ‘invested-in object’.

He’s likely to risk a week’s salary on a horse.

Cf Would Hoberman encourage poor pensioners to bet their savings on his company?

The noun following *on* is ‘what is bet on’.

Thus Fillmore and Atkins overcome their problem of a word being used with elements that do not ‘belong’ to it from the point of view of its frame, but the problem arises only because they assume that a word such as *risk* has an inherent ‘real’ meaning which is then extended metonymically. In Francis et al 1996, 1998, by contrast, the word *risk* (noun or verb) is treated as belonging to different meaning groups depending on the pattern it is used with. In other words, we regard the meaning as being triggered by the word-in-pattern rather than by the word itself. Examples are:

‘How likely or unlikely something is’

Noun	that-clause
<i>chance</i> <i>danger</i> <i>guarantee</i> <i>impossibility</i> <i>likelihood</i> <i>odds</i> <i>off-chance</i> <i>possibility</i> <i>probability</i> <i>question</i> <i>risk</i>	

⁴ I have added the second example in each case, using the words (such as *expose*) suggested by Fillmore and Atkins.

Noun	<i>of</i> n/-ing
<i>chance</i> <i>danger</i> <i>hope</i> <i>likelihood</i> <i>possibility</i> <i>prospect</i> <i>risk</i> <i>threat</i>	

‘Indicating danger and its source’

Noun	<i>from</i> n/-ing
<i>danger</i> <i>hazard</i> <i>risk</i> <i>threat</i>	

‘Indicating danger and the possible victim of harm’

Noun	<i>to</i> n/-ing
<i>danger</i> <i>hazard</i> <i>menace</i> <i>risk</i> <i>threat</i>	

A similar argument is used by Hunston and Francis (1999) in discussing the differences between their approach and Levin’s. They take issue, as do Baker and Ruppenhofer (forthcoming), with the evidence for some of Levin’s categories, but then argue that this is more than a matter of detail. They suggest that ‘allowing all patterns of a verb to be considered, instead of just a few, might militate against the consistent formation of semantic groups’ (H&F 1999: 145). For example, although the verb *bite* usually belongs in a group with *eat* and so on, when it is in the pattern **V into n** it belongs with *bore*, *dig* and *drill*. That is, although it still has the meaning of ‘break off food with the teeth preparatory to ingestion’, a different aspect of the activity is being focused on. In other words, if it is not the word but the sequence that has meaning, and if therefore a word has a slightly different meaning depending on the sequence, the semantic groupings of words will be different for each of the sequences or patterns which the words are part of.

5. A local grammar of evaluation – again

In this part of the paper I wish to consider the topic of evaluation, and how this kind of meaning may be coded. In my own early work on evaluation in academic discourse I regarded evaluation as comprising three discourse functions: the status function (what kind of epistemic entity is being evaluated); the value function (how good or bad it is); and the relevance function (the discursial significance). Of these, the one that corresponds to what most people think of as ‘evaluation’ is ‘value’, and that is the phenomenon that I will give the name of ‘evaluation’ in this paper.

Evaluation is a prime candidate for frame analysis because it is essentially a semantic rather than a grammatical resource, as Martin (2000) points out in his model of APPRAISAL. Martin proposes that APPRAISAL can be realised using three sets of semantic resource: feelings and emotions (AFFECT); social (dis)approval (JUDGEMENT) and social value (APPRECIATION). These correspond very roughly to the following FrameNet frames: Emotion_active or Emotion directed (AFFECT); Morality evaluation, Social behaviour evaluation and Social interaction evaluation (JUDGEMENT); Quality evaluation (APPRECIATION). The correspondences are not exact, however. For example, the adjective *splendid* belongs to the Quality evaluation frame, and normally realises APPRECIATION. The sentence *Amazon ants are splendid at enslaving other ants* is included by FrameNet in the Quality evaluation frame – as it has to be, because frame membership is entirely dependent on lexical item – but is coded as JUDGEMENT (sub-set: capacity) in Martin’s model.⁵

⁵ I am grateful to Peter White for confirming this interpretation of Martin.

Once again, then, there seem to be problems that arise when a word alone, rather than a word-pattern combination, is seen as determining the frame. For example, in the frame ‘Social interaction evaluation’ there is a frame element of Grounds which occurs in a prepositional phrase beginning with *about*. It is described in the FrameNet website as something to which the evaluatee’s behaviour responds. Examples are given with the adjectives *nice* and *kind* (e.g. *He was nice about the accident; She was kind about my work.*) Francis et al (1998: 418, 420) suggest two relevant meaning groups of adjectives which are sometimes followed by a prepositional phrase beginning with *about*. The first is glossed as ‘someone talks about a person or thing in a way that is complimentary to them or insulting to them’. Adjectives include *abusive, acerbic, affectionate, bitchy, blunt, catty, caustic, censorious, charitable, cheeky, churlish, complementary, critical* and *cruel*, as well as *kind*. Note that many of these, such as *affectionate* and *cruel* do not mean ‘talk in a particular way’ in most contexts. The second is glossed as ‘someone reacts to a situation in a way that is judged to be good or bad’ and includes *adult, beastly, brave, brilliant, cool, excellent, fine, foolish* and *funny*, as well as *kind*. This group notably includes adjectives in their less frequent senses e.g. *adult, mature, heavy* and *sweet*. It also includes adjectives which FrameNet lists under Quality evaluation (e.g. *marvellous*) as well as those such as *kind* which FrameNet includes in Social interaction evaluation. The point is that words are not fixed in their meaning. In the case of evaluative words, the precise referent for the evaluation is determined by the pattern used more than by the adjective used.

At this point, then, I am going to combine some of the observations of Martin and of FrameNet, with some of my own observations. From Martin I am going to take part of the category of semantic resources which he calls AFFECT. In the FrameNet tradition, however, I am going to treat (part of) AFFECT as a frame, with frame elements. Following my own tradition I am going to take word-pattern combinations as the starting point of frame description, and am going to deal here only with adjective patterns.

I shall also propose that the distinction between reflective and constitutive expression of AFFECT is recognised. One of the complexities of this semantic area is that emotional response may be indicated as a quality of the responder, as in *Everyone in the school is distressed to hear of this tragedy* or as a quality of the thing evaluated, as in *...after the distressing events of 1887...*. The first of these is reflective evaluation (it attributes evaluation to *everyone in the school*) while the second is constitutive (it avers an evaluation of the events).⁶ Martin treats both of these as equivalent, whereas the FrameNet system places the first under Emotion_active and the second under a different frame: Subject_stimulus. The problem, for me, is that when AFFECT is constitutive it tends to come very close in meaning to other forms of evaluation. To illustrate this, consider these examples which are given different codings by Martin, reflecting the different meanings of the adjectives concerned (emotional reaction, social sanction, or social value):

It’s annoying to have people clicking their fingers at you to get your attention. (AFFECT)

I thought it would be selfish to marry if I were going to be killed. (JUDGEMENT)

It is pathetic to see such stupidity on show. (APPRECIATION)

To me, these differences are secondary to the fact that all these examples constitute an evaluation of the situation indicated by the to-infinitive clause, and all are different on a primary level from a description of emotion as in *Everyone in the school is distressed...* In what follows, therefore, I shall deal with reflective AFFECT only.

In the following tables, the first column gives the adjective pattern (identified from Francis et al 1998) and the second column gives a list of meaning groups in Francis et al (1998) whose constituent adjectives in the pattern identified realise reflective AFFECT. The third column proposes the frame or meaning elements (in each case including ‘Experiencer’ and ‘Emotion’) expressed in ‘pattern’ terms, and the fourth column gives examples. Where the third column gives alternative elements (usually Cause/Target) the fourth column gives an example of each.

⁶ For the averral-attribution distinction, see Hunston (2000).

The first table comprises patterns with prepositions.

Pattern	Meaning groups	Elements	Examples
ADJ about n	'passionate & cool' 'happy' 'unhappy' 'philosophical' 'nervous' 'angry' 'curious' 'cynical & serious'	Experiencer is Emotion about Cause/Target	<i>She is increasingly <u>nervous</u> about her future...</i> <i>She did seem <u>curious</u> about why the dogs were wet...</i>
ADJ as to wh	'curious' 'worried'	Experiencer is Emotion as to Cause/Target	<i>I...was <u>worried</u> as to how my death would affect them</i> <i>We were <u>curious</u> as to why our father's family had black curly hair...</i>
ADJ at n	'nervous' 'angry'	Experiencer is Emotion at Cause/Target	<i>Some people looked quite <u>horrified</u> at the idea of reading a new book</i> <i>Paul is very <u>angry</u> at the way he has been treated</i>
ADJ by n	'astonished'	Experiencer is Emotion by Cause	<i>...the British are <u>exasperated</u> by rising crime</i>
ADJ for n	'eager' 'guilty'	Experiencer is Emotion for Cause/Target	<i>I felt <u>guilty</u> for disturbing his solitude</i> <i>...I was really <u>desperate</u> for money</i>
	'afraid' 'happy'	Experiencer is Emotion for 3 rd party	<i>He's had a great career and I'm <u>happy</u> for him</i>
ADJ in n	'safe'	Experiencer is Emotion in Cause	<i>He was <u>happy</u> in his Apache life</i>
ADJ of n	'fond & critical' 'afraid' 'tired' 'desirous'	Experiencer is Emotion of Cause/Target	<i>We are <u>proud</u> of our achievements</i> <i>I was <u>envious</u> of their anonymity</i>
ADJ on n	'keen' 'optimistic'	Experiencer is Emotion on Target	<i>I'm not that <u>big</u> on religion</i>
ADJ over n	'angry' 'despondent' 'worried' 'enthusiastic' 'jealous' 'go mad'	Experiencer is Emotion over Cause	<i>We like an artist who is <u>enthusiastic</u> over talent in others</i>
ADJ to n	'partial'	Experiencer is Emotion to Target	<i>As General Haig was <u>wedded</u> to his profession...</i>
ADJ towards n	'sympathetic' 'aggressive' 'ambivalent'	Experiencer is Emotion towards Target	<i>I've always felt very <u>affectionate</u> towards Karen because...</i>
ADJ with n	'angry'	Experiencer is Emotion with Target	<i>I thought I was <u>angry</u> with them but...</i>
	'breathless'	Experiencer is Emotion with Emotion	<i>... was <u>frozen</u> with fear</i>

The next table comprises patterns with clauses.

Pattern	Meaning groups	Elements	Example
ADJ that	'surprised' 'angry' 'horrified' 'glad' 'anxious'	Experiencer is Emotion that Cause/Target	He was angry that she had spoken to people... <i>The people are <u>terrified</u> that ... they might be killed</i>
ADJ wh	'afraid'	Experiencer is Emotion Target	<i>They are <u>afraid</u> what their neighbours and children will think</i>
ADJ to-inf	'astonished' 'sorry' 'delighted'	Experiencer is Emotion to Action/Phenomenon	<i>You've got to be very <u>thankful</u> to win once</i> <i>They were <u>puzzled</u> to find the kitchen door locked</i>
ADJ -ing	'comfortable'	Experiencer is Emotion Action	<i>I felt <u>good</u> seeing Gideon...again</i>

The final table comprises patterns with *it*.

Pattern	Meaning groups	Elements	Example
<i>It</i> v n ADJ that	(only one group in the pattern)	It makes Experiencer Emotion that Phenomenon	<i>It makes me <u>sick</u> that anybody should doubt my commitment</i>
<i>It</i> v n ADJ to-inf	'angry' 'sad' 'sick & nervous' 'happy'	It makes Experiencer Emotion to experience Phenomenon	<i>It makes me <u>sad</u> to see all the god work we have done devalued in this way</i>

As noted above, a number of examples and patterns have been omitted from these tables because they do not meet the criterion of including both Experiencer and Emotion: that is, they constitute rather than reflect evaluation. Some examples are given below, though there is not enough space here to develop this analysis further. In each case, emotion is expressed as a quality of the object rather than of the experiencer (*the match is boring* rather than *I am bored*):

ADJ for n e.g. *This is very distressing for Carol*

ADJ to n e.g. *There is nothing more infuriating to an author than...*

v it ADJ that e.g. *I find it offensive that I am being accused of giving advice in return for political favours.*

v it ADJ to-inf e.g. *You might find it interesting to inquire about how your children get on...*

it v-link ADJ that e.g. *It's interesting that she's never asked what he looks like.*

it v-link ADJ wh e.g. *It's inexplicable why a teenage girl had careered onto the road like a toddler.*

it v-link ADJ what/how e.g. *...it is appalling how much litter, bottles and food scraps are scattered over...our streets.*

it v-link ADJ when/if e.g. *It's frustrating when people try to do things and are held up with red tape.*

it v-link ADJ to-inf e.g. *It's annoying to have people clicking their fingers at you to get your attention.*

it v-link ADJ -ing e.g. *...it must be frightening starting a downhill race at the top of a mountain.*

ADJ to-inf e.g. *Such matches are boring to watch.*

6. The synergy of approaches

This paper has represented a journey of discovery through some different approaches to the coding of meaning in discourse, comparing mainly the Berkeley and the Birmingham approaches to frames and local grammar and in part reflecting on the contribution of Martin's approach to APPRAISAL to the coding of evaluation. My attempts to grapple with similarities and differences has led me to an

appreciation of the strong points of all the approaches mentioned here, and to a realisation of the importance of three factors: the role of frame elements in delimiting frames, Mode of discourse, and word-pattern, as opposed to word or pattern alone, as the site of meaning.

As a final illustration of the possible synergy between approaches, I would like to reflect in detail on one of the FrameNet lexical entries: *distinguish* and to compare the corpus analysis that this entry represents with the entry for the same word in the Collins Cobuild English Dictionary.⁷ The FrameNet entry for *distinguish* appears to give more comprehensive information than CCED. CCED lists these patterns for the verb:

V n from n	<i>distinguish item from item</i>
V between pl-n	<i>distinguish between two items / between item and item</i>
V pl-n	<i>distinguish two items / item and item</i>
V n	<i>distinguish something</i>

The first three patterns are used with two meanings of the verb ('someone distinguishes one thing from another' and 'a quality distinguishes one thing from another') while the fourth is used with another meaning ('someone could distinguish something from a background').

FrameNet, on the other hand, gives a large number of items which are found to follow *distinguish*. Expressing these in CCED terminology, they are:

V n amongst n	V n with n
V n by n and passive equivalent (<i>be V-ed by n</i>)	V n prep
V n for n	V from n
V n in n	V in n
V n on n	V on n

There is insufficient space here to give a complete account of the corpus searches inspired by these sequences; I shall simply summarise some of the more interesting findings.

A 'new' meaning of *distinguish*

FrameNet mentions the sequence 'distinguish ... amongst...'. This was very rare in the BoE (2 lines), but the search for this revealed another pattern **V among n**, almost exclusively a US usage, as in

...no guidelines to help the consumer distinguish among astringents...

The sense of this is not 'distinguish one thing from another' but 'separate one thing from the rest'. This sense, and its patterns, is not specifically given in CCED and is not recognised as a separate sense of *distinguish* in FrameNet. The 'new' sense also occurs with the pattern **be V-ed by n**, as in

Kathak is a classical dance from the north of India, which is distinguished by intricate foot rhythms...[part of a list of dance styles]

Thus the FrameNet information has helped to identify a new sense of the word.

Adding another pattern to *distinguish*

FrameNet identifies the sequence **by n**, which is not given as a pattern in CCED, but which probably should have been. CCED rarely codes passive patterns, on the grounds that all verb+object clauses are open to passivisation and that therefore the occurrence of passive patterns does not distinguish between lexical items. This may, however, lead to a neglect of passives in the compiling of local grammars. The passive version of the pattern **V n by n** has been mentioned above as a realisation of a 'new' meaning of *distinguish*.

Recognising 'non-pattern' prepositional phrases

Many of the sequences identified in FrameNet are not patterns in the CCED sense (there is no reason why they should be). I would suggest, however, that distinguishing non-pattern from pattern is useful in identifying frame elements.

The prepositional phrase *by n*, as well as being a potential pattern element, can also co-occur with other patterns, as in *Boot is easily distinguished from other cartoons by the garishly coloured faces of the*

⁷ This entry was chosen because I compared it with a study carried out by Woodward (2002) on expressions of difference. There is not enough space here to report on the comparison in detail. Unfortunately, the FrameNet entry for *distinguish* is not in its final form.

main characters. It is in a sense a ‘free-floating’ phrase that needs to be labelled as a local grammar or frame element wherever it occurs.

Other non-pattern prepositional phrases that realise additional semantic elements and can co-occur with other patterns include:

with + noun (*Keen-sighted people can distinguish them both with the naked eye.*) A pattern parser should parse as **V pl-n (with n)**

in + noun (*He distinguishes in the book between an error, an illusion and a delusion.*) Parse as **V between pl-n (in n)**.

on + noun (*...difficulties in distinguishing on stylistic grounds alone between late Malaga and early Valencia lustre pottery.*) Parse as **V between pl-n (on n)**.

Other instances of prepositional phrases mentioned in FrameNet are simply part of the relevant noun phrase and should not be parsed separately by a pattern parser e.g.

in + noun (*...we can distinguish three main classes in contemporary capitalist society*) Parse as **V pl-n**.

on + noun (*Tedrow distinguishes arctic brown soils on well-drained sites, and tundra soils on wetter areas.*) Parse as **V pl-n**.

Identifying ‘non-canonical forms’ of patterns

As Francis et al (1996: 611-615) point out, patterns can be altered by their grammatical context. FrameNet identifies a sequence **V from n**, but all examples of these in the BoE are non-canonical forms of **V n from n**, e.g.

The ensuing symptoms are often difficult to distinguish from those of an acute attack of asthma. Parse as **V n from n**.

There are a number of conclusions to be drawn from this. Firstly, I would suggest that the mass of information about context that emerges from concordance lines can be ‘tidied up’ by a consideration of pattern, so that not every possible sequence has to be accounted for by a separate parsing. Secondly, the detailed FrameNet work has suggested, but not accounted for, a sense of *distinguish* that is not found in the CCED but which does occur quite frequently in the current BoE (which has increased its US coverage). This has diagnostic patterns (notably **V among n**) and a slightly different co-occurrence of frame elements, in that only one Phenomenon (in FrameNet terms) is required.

Finally, and most importantly, the study suggests that, as might be expected from corpus work, new insights are most usefully gained when observation is not hampered by assumption. Because the FrameNet approach does not make assumptions about what a pattern is (and is not), it includes information which a pattern approach would omit, which the pattern approach can then be used to organise. Because the pattern approach does not assume that the word has an inherent meaning, it allows a ‘new’ meaning to emerge when the patterns suggest it.

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