Flavours of Corpus Linguistics

Susan Hunston, University of Birmingham

1. Introduction

In this paper I wish to propose a metalanguage for describing and assessing the features of corpus-based discourse studies. The rationale for doing this is that studies can be compared along various parameters and that it is useful to have an agreed terminology for doing so. One study may offer a broad view of a very large corpus; another may offer a much more detailed study of a much smaller amount of data; yet another may present very few findings but make substantial advances in theory. In deciding what the positive and negative qualities of each study are, assumptions are made about what constitutes a successful corpus-based discourse study. This paper seeks to articulate at least some of these assumptions and to argue that achieving success along one parameter will nearly always involve a reduction in what might be achieved along another.

The term 'parameter' is used above as a preliminary superordinate term for aspects of corpus studies. Another candidate term is 'dimension', though this runs the risk of confusion with Multi-Dimensional Analysis (Biber 1988). Other possibilities include 'quality' or 'feature'. To avoid embedding the terminology too early in a theoretical model, I propose borrowing the empty-content word 'flavour' from Physics (see, for example, en.wikipedia.org/wiki/Quark). The four 'flavours' that I propose for describing corpus-based discourse studies are: Extent, Reach, Depth and Strength. Every corpus study, I suggest, seeks a methodology that will satisfactorily balance the demands of the four 'flavours'.

The paper first gives an overview of the four flavours and then exemplifies how they might be applied by discussing recent work on evaluative language (Hunston 2011a) through the lenses that they provide. I suggest that using the concept of flavours can offer a way of comparing studies of different kinds and acknowledging complementary strengths and weaknesses.

2. The four flavours

In this section I offer more detail about the four flavours: Extent, Reach, Depth and Strength. Where appropriate, examples will be given from studies of stance, evaluation and related topics.

Extent

Extent is about the size of corpus. It refers to the amount of data that can be processed by the methodology. An analytical method with the quality of extent is highly automatised and can operate on a very large quantity of data. A very simple example is the production of a word frequency list, which can be produced with a minimum of human intervention from a corpus of almost any size. An approach to evaluative language that values extent highly is Sentiment Analysis (e.g. Liu 2010), which aims to discover algorithms that identify subjectivity, and positive and negative attitudes, enabling large amounts of data to be processed. The aim is not to identify unambiguously each and every instance of sentiment, still less to explore the subtleties of evaluative language, but rather to obtain coverage of a large amount of data and to refine techniques so that enhanced accuracy is possible.

Some proponents of working with small corpora argue against extent as a goal in corpus research. O'Keeffe (2007), for example, argues persuasively in favour of a corpus small enough to encourage detailed examination of each selected feature. This is a reminder that although extent is often seen as a defining feature of corpus linguistics (a corpus is 'a large collection of texts'), it is not the only goal for corpus studies. Indeed, as O'Keeffe argues, the achievement of extent may make other achievements more difficult.

Reach

Reach is the degree of coverage obtained by the corpus methodology used. One aspect of this might relate to the corpus itself and the extent to which the corpus adequately represents or 'covers' the language variety or register being studied. Another aspect is the degree of success in taking account of all instances of the selected items of study in a corpus. A well-known example of a methodology with reach comes in Semino and Short's (2004) study of speech and thought representation, in which the researchers identify all instances of speech and thought in their target corpus. This work demonstrates also that reach is likely to be achieved at the expense of extent, as the degree of manual annotation involved inevitably restricts the size of the corpus. Multiple studies often extend reach. For example, Conrad and Biber (2000) presented a study of stance adverbials, such as *I think, probably, as we all know*, based on the work in Biber et al (1999). In a later study, Biber (2006), considers a more extensive range of items that include, for example, verbs, nouns and adjectives with finite and non-finite complement clauses (e.g. *claim that, hesitate to; assertion that, willingness to; be apparent that, be difficult to*). This represents a move to greater 'reach', though Biber indicates that even with this more substantial set of items the reach is not complete.

Reach, then, is about including 'everything' in a study; the difficulty, of course, is that this implies a defined area of research, whereas in fact area delimitations are arbitrary, particularly when the 'item' being researched is a functional rather than a formal unit. In evaluative language, for example, there is no clear unit of analysis and no definitive set of forms to search for. There is no agreement that 'evaluative language' is even a meaningful category. Researchers instead focus on areas that are defined differently. Many studies start with a function (such as 'stancetaking' (see Englebretson (ed.) 2007)) and express it as a set of forms. Sometimes, though, the study starts with a set of forms and relates them to a function. The difficulty for the researcher is that any set of forms will exclude others that are equally worthy of study.

To illustrate this, consider the frequently studied that-clause in academic discourse. That-clauses form part of structures that are a key means of evaluating or taking a stance towards propositions in a kind of discourse that exhibits relatively little in the way of overt evaluation. Biber (2006) subsumes finite complement clauses preceded by verbs, nouns and adjectives in his study of stance markers in a range of academic registers. Hyland and Tse (2005a; 2005b) limit their corpus to academic abstracts but identify and classify all instances of 'evaluative *that*' in that corpus. As in Biber's study, this includes *We argue that…, the conclusion that…, it is apparent that…* and so on. There is reach in that every single that-clause is examined, but the reach is limited in that only that-clauses are examined, and only in abstracts. In a similar but contrasting study, Hiltunen (2010) identifies and classifies all instances of three constructions illustrated by *We argue that…* (verb + that-clause), *They discussed whether…* (verb + wh-clause), and *She interpreted this as…* (predicative *as* construction). There is an overlap here with Hyland and Tse's study in that both look at that-

clauses. However, only Hyland and Tse include examples such as '*our argument is that*' or '*we are certain that*'. On the other hand, only Hiltunen extends the study to include wh-clauses and constructions with *as*.

In the studies by Hyland and Tse and by Hiltunen there is a similar aim: to quantify the stance in a number of disciplines that is expressed by constructions that consist of an evaluating item (*argue, interpret, apparent, conclusion* etc) and a proposition. Because in each case the researchers wish to do more than simply quantify, and so have to leave space for more detailed investigation, the studies have to limit the scope of the quantitative work, and they do so by defining rather differently the bundle of constructions they include. Each definition is entirely reasonable and enables the researcher to be comprehensive in the coverage or reach of their investigation, but the relationship between the 'whole' of what is studied and the 'whole' of what might be studied under a similar heading is different in each case. In formal terms, the reach of each study is complete; in functional terms it is not. The difficulty in achieving reach, therefore, is not simply a matter of restrictions on time, space, and effort, but of the lack of definition in the object of enquiry itself. Reach relates to the topic of research, but such topics are defined only by the research itself.

Depth

Depth refers to the amount of detail that an analysis goes into. A study with the quality of depth will involve methods such as the close scrutiny of individual instances and groups of instances, and the identification of patterns of collocation, colligation, pragmatic function and meaning. Depth is highly valued in studies that are often called 'corpus-driven' (Tognini-Bonelli 2001) or 'neo-Firthian' (McEnery and Hardie 2012), which emphasise individual words studied in their immediate co-text. It was analyses with depth (but very little extent or reach) that led to Sinclair's proposal of the idiom principle and of units of meaning (Sinclair 1991; 2004). Sinclair typically examined in great detail either all instances of an individual word or phrase or a representative sub-set of them. Although the corpus from which the instances were drawn could be large, only a minute proportion of the corpus was studied (so the extent is small), and although a phenomenon (such as units of meaning) is identified, only a small set of examples of the phenomenon are offered (so the reach is limited).

Depth is also highly valued in studies of specific discourses. A frequently-used methodology is described in (Baker et al forthcoming) and is often said to combine quantitative and qualitative approaches. The quantitative aspect uses techniques such as wordlists or keyword identification to isolate words and phrases that are indexical of particular meanings and functions and that are worth more detailed study. The qualitative aspect uses collocation, concordance lines and wider context to explicate the meaning, cultural or ideological significance, and function of the words and phrases so identified. The quantitative studies have the quality of extent and the qualitative studies add the dimension of depth.

Strength

Strength refers to the implicative power of a research methodology: its contribution to our understanding of human cognition, social structures, or indeed of language itself. Clearly, every piece of research would aspire to strength, and it might be said that every development in corpus linguistics aims to combine and balance extent, reach and depth to achieve strength. The desire for research strength, however, may limit the applicability of the other flavours. Sinclair's development

of the theory of units of meaning, mentioned above, for example, used depth to achieve strength, but used only as much extent and reach as was necessary to demonstrate the strength. This reminds us that strength may go along with any one of extent, reach, or depth, or any combination, but that it is unlikely to combine with all of them at once.

3. Evaluative Language in Discourse and in Corpus

Evaluative language is studied under many headings, such as stance (e.g. Englebretson (ed) 2007; Biber 2006; Hyland and Tse 2005a), appraisal (e.g. Martin and White 2005; Bednarek 2008) or sentiment (e.g. Liu 2010). There are four questions that studies of evaluative language seek to answer:

1. What language resources (in English) are used to express evaluative meaning? This is a question of description, and answers range from the straightforward to the complex. On the one hand, it is simple common sense that some words (*good, bad, success, tragedy*) indicate both subjectivity and socially-contingent value, the determiners of evaluative language (Hunston 1989). On the other hand, it is known that much evaluation is hinted at rather than expressed explicitly, and that many words are 'unstable' (Peter White, personal communication) in their evaluative meaning. Much of sentiment analysis research is aimed at improving the hit-rate in identifying evaluative language (e.g. Weibe et al 2005), while much effort in appraisal analysis is devoted to categorising a cline of inexplicitness (e.g. Martin and White 2005: 67). Corpus methods complement discourse ones by identifying consistency in implicit evaluative meaning, as in the work on semantic prosody (Louw 1993; Stubbs 2001). Discourse methods suggest, and corpus methods confirm, that particular constructions or patterns are associated with evaluative meaning – as noted by Goldberg (2006) and by Francis and Hunston (1999).

2. How can evaluative meaning be modelled? This is a question of theory and on the whole is answered as a result of fine-grained analysis of discourse. Labov (1972) placed evaluation within a model of narrative; Hunston (1989) proposed a model of evaluative meaning in academic writing; Du Bois (2007) argues for a tripartite model of stancetaking developed from a conversation analysis perspective; and Martin and White (2005) develop a detailed model of appraisal within systemic-functional linguistics.

3. What differentials can be measured between evaluative meaning in different contexts? This is a quantitative question and is most readily answered using corpus studies. Examples include the studies of stance by Conrad and Biber (2000) and Biber (2006), mentioned above, and others by Charles (2006a; 2006b), Hyland and Tse (2005a; 2005b) and others.

4. What is the function of evaluation in discourse? This is a qualitative question, answered from a discourse perspective. Thompson and Hunston (2000) summarise a range of views in proposing three functions: the expression of personal opinion; the establishment of consensus or dispute; and the organisation of discourse. The first two of these, though derived independently, correspond to two of the lines in Du Bois' 'stance triangle' (the speaker takes a position vis a vis the object, and the speaker aligns themself with the hearer). The third function is inspired by Sinclair's observation of evaluation as a unit-concluding element in speech (Sinclair and Coulthard 1975) and in writing (Sinclair 1988).

Looking at evaluative language from a discourse perspective, that is, analysing one text and then another and so on, has a number of advantages. It facilitates the observation that evaluation is context-dependent, and indeed speaker and hearer dependent, and that it is often implied or hinted at rather than expressed overtly. It also seems to lead most usefully to the theoretical modelling of evaluation as a language function. Corpus approaches to evaluative language are essential for making quantitative comparisons, and the register-based insights that arise from such comparisons, but they are restricted in that they can be based only on items that are identifiable by form. The potential for identifying detailed patterning using corpus techniques, however, gives the opportunity of adding new kinds of description to studies of evaluative language. Hunston (2011a) isolates phraseology as a key feature of evaluative language and explores this correspondence through four themes. These are outlined in the following section.

4. Phraseology and Evaluative Language

The themes that associate phraseology with evaluative language are: the expression of modal meaning; status nouns; phrasal intensifiers; and local grammars. This section outlines and exemplifies each theme, referring the reader to Hunston (2011a) for detail. The next section will consider how each theme relates to the 'flavours' of corpus research.

The expression of modal meaning.

The corpus study reported in Hunston (2003) led to the observation that modal meaning is not randomly distributed but is especially prevalent with the 'verb + wh-clause' sequence or pattern. Further examination of instances of this pattern suggests that modal meaning is expressed in a wide variety of ways, many of them consisting of phrases ending in infinitive *to* or a preposition (see Vincent in preparation and also Plappert 2012 for other non-canonical expressions of modal meaning).

A simple example is the lemma *FIND out*, 40% of all instances of which are preceded by *to*. The word *to* is about ten times as frequent as the next most frequent L1 collocate. *To* occurs before *find out that* in about 41% of cases and before *find out wh* in about 62% of cases. The sequences *to find out that* and *to find out wh-word* can be examined to identify the phrases that precede the that-clause and the wh-clause respectively. Immediately before the that-clause sequence the following are frequent:

- *only to find out*;
- *BE surprised/shocked/relieved/horrified/delighted to find out*;
- *BE a surprise/relief to find out*;
- *come to find out*;
- *beginning to find out*.

Immediately before the wh-word sequence the following are frequent:

- *TRY to find out*;
- *WANT to find out*;
- *NEED to find out*;
- *HAVE to find out*;

- *good/better/quickest way to find out;*
- *aim/purpose/task was to find out;*
- *BE able to find out;*
- *have a chance to find out.*

This may be interpreted as: phrases colligating with a that-clause mostly express a reaction to it; phrases colligating with a wh-clause mostly express an aspiration to it. The meanings associated with the wh-clause are aligned with modal meaning: obligation (*need to, have to, task was to*), volition (*want to, try to, aim/purpose was to*), possibility (*be able to, have a chance to*).

More detailed studies (Hunston 2011a; Vincent in preparation) suggest that this is a common finding: modal meaning is not randomly distributed but co-occurs with particular verbs and complementation patterns; and modal meaning is expressed in sequences that expand this area of study far beyond modal verbs.

Status nouns.

Interpreting epistemic status is a key way in which subjectivity is expressed in an academic context. When a proposition appears in a that-clause, the status may be indicated by the verb, noun or adjective governing the that-clause e.g. *Smith reports that, it is possible that, the argument that*… etc. From the number of ways in which status can be indicated, nouns (e.g. *argument, conclusion, discovery, hypothesis, idea, theory, suggestion*) are selected here as a point of departure for further study. Preceding these nouns, prepositions are surprisingly frequent, and each preposition in turn is associated with particular kinds of meaning. Here are two examples.

The first example selects *at* as a preposition occurring before *the…that*, where the word between *the* and *that* is a status noun. The resulting concordance lines are shown below divided into sets based on a commonality of meaning of the word(s) preceding *at*. The first sets are based on *arrive at* and *look at*. The third set is made up of words indicating reaction.

```
happened? <p> Suppose Tom had arrived at the conclusion that S is true. Thi
    true". We have, therefore, arrived at the conclusion that S is, in fact,

there, we immediately looked in detail at the events that brought it there.
 lensing, physicists have been looking at the possibility that the vacuum co
 has snapped it up. <p> Croswell looks at the discoveries that revolutionise

        rules. Residents were aghast at the idea that other people could s
     citizens". Scientists may bristle at the notion that all they do is spi
  problems corrected, but some bristle at the suggestion that parts of their
    is, to say the least, disconcerted at the idea that their constituents'
 should we be surprised-disturbed even-at the idea that each one of us is ju
         Scientists who are frustrated at the thought that ultimate truths a
   Urry are never less than gobsmacked at the fact that nature can become a
 Many lay people and scientists recoil at the idea that our behaviour can be
 even quantitatively? Many would recoil at the suggestion that something as
 <p> William Zinsmeister used to scoff at the idea that an asteroid impact
   most scientists would have scoffed at the idea that industrial gases cou
 Commission on the Environment, scoffs at the idea that the plan will stop t
  8 January). However, I was surprised at the statement that her book
```

In the third set, emotive responses (*aghast, bristle, recoil, surprised*) predominate, and so, incidentally, do the vaguer status nouns (*idea*, *notion*, *thought* are more frequent than *suggestion,*

fact, statement). The presence of 'response' words is not surprising given that *at* is the 'reaction' preposition, co-occurring with verbs such as *holler, jeer, laugh, frown, grin, grumble, protest, scoff, fume, marvel, rage, thrill, wince*, nouns such as *amazement, anger, dismay, embarrassment, glee, grief, shame* and *shock*, and adjectives such as *alarmed, amused, puzzled, sad, angry, furious, outraged* etc (Francis et al 1996; 1998). We may conclude that a status noun that is regularly preceded by *at* is one that is associated with subjective response; one that is not regularly preceded by *at* is not associated with subjective response.

The second example is the sequence *for + the + status noun + that*, also divided into sets based on the meaning of the word(s) occurring to the left of *for*:

```
   he writes, `then how does one account for the fact that Peter Cotton, Dave
to paracetamol. <p> This could account for the fact that in the local council
             when adjusted to account for the fact that mice are less
       act as painkillers - accounting for the fact that severely injured
   so-called systemic, effect accounts for the fact that an irradiated mouse
  And the rabies theory also accounts for the legend that being bitten by a
   wavelengths. They also had to allow for the fact that our Galaxy is moving
planets orbiting a star, we must allow for the fact that the low-mass stars -
   criticised because it does not allow for the possibility that some genes -
sophisticated. Officialdom would allow for the possibility that aliens do visit
 says Thaler. `Economists should allow for the possibility that people are
    conclusion that economics must allow for the possibility that people are
the decay rate of cobalt-56 - allowing for the fact that some of the energy
   this discrepancy. Their model allows for the fact that the metal and sticky
 For quantum theory proves, or allows for the probability, that time travel is
       in electronic text to compensate for the fact that many of us have never
to use an amplifier which compensates for the fact that the human ear has poor
      as to their masses leaves room for the possibility that they might be
as a computational system leaves room for the view that our beliefs and values

          Is there any scientific basis for the claims that expensive, oxygen-
           There is no scientific basis for the concern that the dam could fail
and Moores have provided good evidence for the hypothesis that the Pacific
       to uncover compelling evidence for the idea that the first genomes were
two decades, support has been growing for the idea that all species undergo
         <p> There are many precedents for the notion that nitric oxide can
  smells and explosions pose a problem for the idea that carbon dioxide caused
as when they solemnly cite a reference for the statement that it is possible to
  that of women, is partly responsible for the assumption that men are not
electroweak interaction is responsible for the fact that every neutrino in the
 called conodonts, has yielded support for the idea that vertebrates existed 40
    else that induces stress. Support for the idea that microwaves can trigger
   This provides experimental support for the proposal that environmental

   be varied. Polkinghorne's argument for the proposition that God is real is
   there are good scientific arguments for the case that pastures are more
   and his colleagues make a good case for the idea that Riborgis would have
   and never less than interesting case for the theory that the mind, or self-

       themselves are partly to blame for the perception' that science is not
   This might be straightforward but for the fact that Cog doesn't have any
  a cut-and-paste job". This is code for the fact that its authors copied
      once said, expressing contempt for the notion that randomness might be
   sound like a facile phrase except for the fact that new models are
   in Russia. Some Russians blame it for the fact that Western companies are
     and unusual document, not least for the fact that the new discipline
        Or it would be if it were not for the fact that the certificate is not
language" seems persuasive were it not for the fact that children implanted
   Ed A The earliest source I know of for the argument that we really only use
   in Oslo. He also blames pollution for the fact that Norilsk's cancer rate (
    to elephants. No one was prepared for the discovery that most genes in
 when he was 37, he won a Nobel prize for the discovery that atoms can be
```

```
a small risk of new tumours, in return for the possibility that the drug will
avoid treading on it. <p> If it wasn't for the fact that they live by the lake,
```

The first set of lines indicates adjustment being made between two scientific concepts. The adjustment is indicated by the verbs *account for, allow for, compensate for, find room for*. The nouns *fact* and *possibility* are frequent here. The second set includes the status nouns *idea, statement, claim, proposal*. The words to the left are about adding to credibility: *basis, evidence, support*. In other words the examples in set 2 indicate objective evaluation – one scientific concept supporting or contradicting another. The third set is similar, except that the support is from an individual rather than a concept: *Polkinghorne's arguments for, his colleagues make a good case for*. This is a smaller set. The final set comprises the remainder of the concordance lines, not here further analysed or discussed. The conclusion from the first three sets is that status nouns that are regularly preceded by *for* will be associated with relationships between two concepts, and the objective evaluation associated with those relationships.

What is visible here is the potential for phraseology to be used in the identification and classification of evaluation. From the point of view of acts of evaluation, status nouns express an assessment of the epistemic status of a proposition. From the point of view of phraseology, each individual status noun may be observed to co-occur with a different group of collocates, and in particular with a given set of prepositions; those prepositions in turn are associated with sets of verbs, nouns and adjectives. This phraseological observation may be interpreted in terms of the kinds of meaning that the various status nouns most typically co-occur with, including, but not restricted to, subjective and objective evaluation.

Phrases of intensification.

This is the most speculative aspect of the current research. There appear to be sets of phrases that in formal terms end with prepositions, that occur before nouns indicating evaluation, which are mostly negative polarity, but also positive polarity. In pragmatic terms they do not add ideational or experiential meaning but intensify both the evaluative meaning of the noun they modify and the overall subjectivity of the text they appear in. Here are some examples (from Hunston 2009), with the plus and minus signs indicating consistently positive and negative evaluative polarity:

- to the point of (-); bordering on (-)
- the depths of (-); as much as (-)
- on the brink of (-); on the edge of (-); on the verge of (-)
- a dose of (-); a hint of (+/-); a touch of (+/-); a degree of (+/-); a wave of (-)
- in the face of (-)
- an act of (-)
- be greeted with (-)
- a tendency to (-)

Many of these phrases draw on metaphors of space (*bordering on, on the verge of*): we are at the edge of the evaluated situation. Others indicate amount – *hint of, touch of, wave of* etc. A surprising feature is that whereas some of the phrases indicate large quantities or total involvement: *in the depths of, after months of, a wave of*, others actually appear to mitigate the evaluative meaning: *a hint of, bordering on, a tendency to* and so on. This mitigation allows a speaker to introduce a noun

of strong intensity in a strongly evaluative environment e.g. *a hint of <u>nastiness</u>; bordering on <u>obsession</u>; on the brink of <u>despair</u>; a tendency to <u>violence</u>* without actually being committed to it. In other words, it can be argued that increasing the intensity of evaluative meaning is not necessarily about increasing the grading of the evaluation (*very nasty, more violent* etc). Rather, greater intensity can be achieved simply by adding to the noun phrase an expression associated with evaluative meaning, even if the apparent force of the expression is one of mitigation. There is a paradoxical and direct relationship between 'downgrading' or 'hedging' and 'intensifying' or 'boosting', where the two are not opposites but the first achieves the second.

Local Grammar.

Although the term 'local grammar' has had a variety of uses, its use here draws on Barnbrook and Sinclair (1995) and refers to the parsing of utterances using terminology based on the pragmatic function of the utterance rather than on its grammatical structure. A local grammar of evaluative meaning draws heavily on the concept of pattern grammar (Hunston and Francis 1999) and in particular the common aspects of meaning identified in adjectives that co-occur with particular prepositions. The first example, in table 1, shows adjectives indicating what Martin and White would call Affect (see also Bednarek 2008). Table 1 gives just a few examples of very large groups of evaluative adjectives, each group identified by the preposition that follows them. The words following the preposition can be labelled as the Target of the evaluation – the situation, person or other entity that makes someone feel cheerful, disappointed, impressed and so on. The subject of the clause ('he') is the Experiencer, the person who is reported as experiencing the feeling and in consequence making the evaluation.

Table 1: A partial local grammar of Affect

Experiencer (person)	BE	Evaluation (Affect)	Preposition	Target
He	*is*	*cheerful gloomy lukewarm anxious angry curious*	*about*	*situation, person, thing*
		disappointed furious overjoyed	*at*	
		astonished exasperated impressed worried	*by*	
		eager impatient ready	*for*	
		appreciative ashamed fond scornful afraid tired	*of*	
		hooked intent keen mad	*on*	
		annoyed despondent anxious enthusiastic sceptical	*over*	
		angry bored comfortable fascinated unhappy	*with*	

The second example (see table 2) relates to Martin and White's concept of Judgement. Again the pattern is an adjective followed by a preposition. In this case the subject of the clause ('she') is the target of the evaluation – the person being evaluated. The adjective indicates not a feeling but a quality: *foolish, expert, cruel, nice* and so on. The words following the preposition provide a circumstance or a limiting factor – someone may not be foolish in general but is foolish in this instance.

Table 2: A partial local grammar of Judgement

Target	BE	Evaluation (Judgement)	Preposition	Circumstance
She	*is*	*critical candid reticent honest convincing foolish reasonable consistent stubborn*	*about*	*situation, thing, activity, person*

		expert incompetent poor skilful successful useless	at	
		assiduous ruthless deficient awash careful lax right wrong	in	
		cruel gentle ambiguous reticent strong weak	on	
		abusive courteous hostile nasty nice sympathetic	to	

There is of course a distinction between 'performing' evaluation (the writer evaluates) and 'reporting' evaluation (the writer reports someone else evaluating). In Martin and White's scheme, an expression of Judgement performs evaluation unless otherwise attributed and an expression of Affect reports evaluation unless the subject of the clause is *I/we*.

The obvious aim here (as in Bednarek 2008) is to attach functional labels to formal patterns, which raises the possibility of identifying Affect and Judgement automatically in a corpus, as least as it is expressed through adjectives. However, this is far from straightforward because it depends crucially on the choice of adjectives. For example, PERSON + BE ADJECTIVE + AT + THING/SITUATION can be parsed as Affect (e.g. *I am obviously very disappointed at the way things have turned out*) or as Judgement (e.g. *Republicans have proved skilful at muddying the waters*). More nuanced still, a single adjective can express both Affect and Judgement: a report of what someone thinks and a judgement about how appropriate that reaction is. In table 3, the example *My dad was a bit funny about letting kids run up and down in the house* reports an evaluation of the actions of kids (via Affect) and performs an evaluation (via Judgement) of that evaluation. *My dad* is both the Experiencer of a feeling towards the running kids and the target of the speaker's evaluation (see Table 3).

Table 3: A dual analysis: Affect and Judgement

Experiencer		Evaluation (Affect)		Target	REPORTED
My dad	*was*	*a bit funny*	*about*	*letting the kids run up and down in the house*	
Target		Evaluation (Judgement)		Circumstance	PERFORMED

This concludes the examples of the coincidence of evaluative language and phraseology. In these examples, evaluation is interpreted as incorporating, variously: a personal reaction to something, performed or reported; an assessment of epistemic status; those meanings often described as 'modal'; something that is open to intensification. Phraseology is interpreted as incorporating, variously: the colligation of lexical and grammatical words, or lexical words and clause types; the association of meanings with particular formal sequences. The examples are given as instances of corpus studies of relevance to discourse. In the next section, the examples will be discussed in the context of the proposed 'flavours' of extent, reach, depth and strength.

5. Phraseology, Evaluation, and Flavours

In this section I hope to exemplify how the proposed 'flavours' of corpus linguistics might be used as a metalanguage to discuss and assess corpus methodologies, using the studies presented briefly above as the examples.

Extent

None of the studies summarised above can make strong claims to extent. Although all the studies are based on large corpora they are for the most part based on entirely manual analysis, for example in the close scrutiny of concordance lines. Aspects of them are automated, for example the calculation of frequency of words preceding *FIND OUT,* but for the most part this is not how the analysis is done. The theme with the most potential for extent is local grammar. If automation can be achieved, this offers the possibility of the parsing of all target sentences, for example, all sentences in which there is an evaluative adjective, in a corpus of any size. This would, however, have limited reach, as only some examples of evaluative language – those involving adjectives – would be included. It would also sacrifice depth. Examples such as *My dad is funny about kids running in the hall* would be treated as if they were single-layered and not double-layered in meaning. The nuances would be missing.

Reach

Reach is about finding all examples of a given phenomenon, and above it was noted that this presents a challenge to studies of evaluative language. The studies above do not exemplify attempts to identify all instances in a given corpus or corpora, as studies by Biber (2006) or Charles (2006a; 2006b) do. In this sense, they are lacking in reach. However, three of the studies might be discussed in the context of attempts to extend reach. The study of phrasal intensifiers offers a set of phrases, that can be expanded, that occur in the vicinity of evaluative language and that might therefore be used as a diagnostic for it. They also, it is argued, intensify the subjectivity of a text, so including them in a count of evaluative items would extend the reach of that calculation. If the strength of evaluation in a corpus is being measured by counting the occurrence of relevant items, the phrasal intensifiers would be essential items to include in the calculation.

The second study that invokes discussion of reach is the investigation of status nouns (*idea, hypothesis, possibility* etc). These lexical indicators of epistemic status have already been used (e.g. by Biber) to extend the reach of studies of stance markers. However, status and stance markers are not the same thing, and the difference here illustrates the difficulty of achieving reach in studies of evaluative language. Much epistemic status is not marked explicitly and must be deduced from context. Example 1, from the Wikipedia entry on quarks, illustrates this.

Example 1
A **quark** is an elementary particle and a fundamental constituent of matter. Quarks combine to form composite particles called hadrons, the most stable of which are protons and neutrons, the components of atomic nuclei. Due to a phenomenon known as *color confinement*, quarks are never directly observed or found in isolation; they can only be found within hadrons. For this reason, much of what is known about quarks has been drawn from observations of the hadrons themselves.

There are few markers as such in the paragraph, and this absence in itself, together with the provenance of the paragraph as part of an on-line explanation of a scientific topic, indicates that the paragraph is expected to be interpreted as 'fact' or, as expressed in Hunston (2011a), in alignment with the world. (Note that this does not imply that the paragraph is 'true', only that it is written as though it were.) In the last sentence of the paragraph the information about quarks is evaluated as *known,* as opposed to *suspected* or *hypothesised*. This is an expression of direct alignment with the world. At the same time, however, the evidence for that status is called into question, in that it is based on inference rather than on direct observation (the *hadrons* are observed, not the *quarks*), so

the alignment is mitigated. Although this interpretation is about status, it tells us little about stance markers. Adding *known* to a list of stance markers would extend the reach of those studies, but it would not tell us about the mitigation of *known* in this example. Both the unmarked status of factuality in the paragraph, and the mitigation of the status of our knowledge about quarks, are identifiable from a close reading of the paragraph alone and resist automation.

Finally, the study of modal meaning could be said to be an example of extending reach, in that the study has identified ways of indicating modal meaning that other studies that have modal auxiliaries and associated adverbs etc have not identified. Examples might include *it's up to you to* as an expression of obligation and *for fear of* as an expression of possibility. Extending studies of modality to include phrases such as these will give much greater reach and will start to answer the question of how such meaning is expressed in corpora with a low frequency of modal verbs. This remains a potential only, as the enterprise of identifying these modal expressions is by no means complete, and in any case they are very unlikely to form a neatly-identifiable set. However much the reach of corpus studies that identify markers of modality is extended they are unlikely to encompass the whole of modal meaning. We will return to this topic below.

Depth

Depth is the quality achieved when detail and complexity are added to the investigation of particular items. As noted above, a great many studies of discourse and corpus use quantitative methodologies to identify items for qualitative study. The quantitative studies aim for reach and the qualitative studies, that focus on the detail of collocation, prosody, and discourse function, aim for depth. The deep study of individual words and phrases can be seen as either the real point of the study, for which the quantitative work is mere preparation, or a kind of incidental add-on that is appended to the main study for added interest.

Although few claims could be made for the studies above exhibiting extent and reach, they can be argued to possess depth. This is evident in the phraseology surrounding status nouns, the phraseological nature of modal meaning, and the complexities of evaluative adjectives and their patterning. It is obvious, too, that depth is achieved at the expense of reach. This is more than a simple of matter of scope (the more that is said about each item, the fewer items can be talked about); it is about the nuances around each item that are missed if that item is simply added to a catalogue of search targets. For example, it was argued above that some phrases with a modal-like meaning could be treated as equivalent to modal verbs. This suggests that to include these phrases in a corpus study of modal verbs would extend the reach of the study. However, modal-like expressions are more nuanced in meaning, more multi-functional, than modal verbs are, and a study with reach is likely to miss this detail.

Examples 2 and 3 include modal-like expressions that demonstrate this point.

Example 2
Once your details have been fed into the computer it will search its memory to find compatible men to introduce you to. You will then be sent a list of up to six names and addresses and **it is up to you to make contact**.

One way of paraphrasing *it is up to you to make contact* is with the modal *must*: 'you <u>must</u> make contact – we do not do it for you'. The original phrasing organises the information so that *you* as

well as *make contact* is new information, and the natural stress fall on to *you*. In addition, the meaning here is subtly different from *must*, in that the person involved has a choice about whether to contact the six names or not. A second possible paraphrase is 'you <u>may</u> make contact if you wish, but we do not do it for you'. The expression *it's up to you to* neatly combines both 'must' and 'may'.

Example 3
It is possible that many gave [money] freely but, since the sums to be donated were fixed by the authorities, it maybe supposed that **many others contributed for fear of being thought disloyal**.

Example 3 expresses the possibility of being thought disloyal, and so expresses a meaning paraphrasable by *might* ('they <u>might</u> be thought disloyal'). However, *for fear of* also intensifies the negative polarity of the adjective *disloyal*. It also sets up a disjuncture between the writer's opinion and the reported opinion of the people giving the money. The *fear* belongs to the reported donors, not to the writer, whereas if *might* is used the possibility is owned by the writer, and no disjuncture is possible.

It can be argued, therefore, that reach and depth are in tension, and that every corpus study tries to find its own balance between them. At its best the tension is productive and the researcher does not only decide what to sacrifice, but tries to find a benign circularity in the method. To give an example of the circularity of reach and depth I return to Sinclair's work on units of meaning. As noted above, it is based on the very detailed study of a relatively few words and phrases. Sinclair (2003), for example, contains only 18 worked examples. This suggests substantial depth but little reach. The reach has been extended since, for example by Stubbs (2001), who asks how the kind of observations that Sinclair makes be generalised across the language as a whole. The pattern grammar study carried out by Hunston and Francis (1999) took only one of Sinclair's observations, about colligation, and listed the complementation patterns of about 20,000 verbs, nouns and adjectives as well as, conversely, the verbs, nouns and adjectives occurring with each of nearly 1,000 patterns. It had reach, but less depth, in that much of the detail of individual words and patterns is missing. As well as lacking a robust statistical framework (Gries 2006), these studies miss detailed information about the collocations and functions of each word-pattern combination. Much of the work reported in this paper adds depth to the study of patterns, such as noting the modality associated with the 'verb+wh-clause' pattern, or the local grammar interpretations of the adjective patterns. These studies may in turn provide material for more studies with reach.

Strength

Strength is the quality of significance, or meaningfulness; a study with strength is informative about cognition, or society, or about language itself. The strength of the studies summarised in this paper have claims to strength in two respects: adding to what is known about aspects of evaluative meaning, and adding to what is known or suspected about language more generally. More generally still, however, the strength of the studies can be said to lie in the questions they raise and the future studies they make possible.

The strength of the study of phrasal intensifiers lies in the possibility of enhancing the measurement of intensity and subjectivity in a corpus of texts. It raises the possibility that phrases that do not appear on an inventory of evaluative items or in a list of intensifiers might not the less play a role in intensifying evaluation. More controversially perhaps it leads to the suggestion that hedges and

boosters may play similar roles in extending the amount of evaluative language present in a given text.

The study of status nouns such as *fact* or *hypothesis* extends the concept of these words beyond their significance as stance markers and towards their role as knowledge-builders. The typical or likely co-texts of these words demonstrate how a given register of English uses each knowledge-builder. This can be used to explore differences between academic disciplines. A study of the word *hypothesis* in the Medicine and Humanities sub-corpora of the BNC, for example, suggests that it is used in Medicine to structure how a particular conclusion is reached: a specific hypothesis is tested and supported (or otherwise) by evidence; the word *hypothesis* in the Humanities, on the other hand, is likely to be used as part of a meta-discussion of how research takes place (Hunston 2011b).

The study of modal meaning introduces a number of concepts, of which the least interesting is probably the variety of ways of expressing meanings such as obligation. More interesting is the correlation between a word-pattern combination ('verb + wh-clause') and a restricted range of meanings ('modality') (the correlation currently being tested by Vincent (in preparation)). This suggests not so much a fact about language as an observation of 'what is often said', which in turn suggests an aspect of preference in discourse that is open to further study. The observation of modal meaning depends to a large extent on the high proportion of prepositions and the infinitive *to*. This is a more general observation about English: that prepositions act as organisers or classifiers of meaning (Hunston 2008).

One of the challenges in the study of evaluative language is the identification of point of view in evaluation. Most intriguingly is the possibility of disjuncture in point of view, where a difference in stance is indicated between the speaker and the reported person. Such a disjuncture has been identified in the context of speech representation, where a verb such as *claim* focuses on the difference in commitment between the writer and the author of the represented speech (Hunston 1995). In literature studies, ironic disjuncture in Free Direct Speech is well known (e.g. Toolan 1998). Phrases such as *for fear of* and *be funny about* seem to offer the possibility of a wider range of phenomena, though how to identify these other than serendipitously is not yet known.

6. Conclusion

In this paper I have illustrated how a focus on the phraseological aspect of English might illuminate the study of evaluative language. Partly this simply adds evidence to the argument that phraseology – that fuzzy concept of the way that lexis and grammar fits together – is central to the study of English in use. I have tried to extend this study, though, towards a preliminary attempt to theorise the competing pressures upon corpus studies. The imperatives to be rigorous, and detailed, and meaningful, I suggest, lead to a tension between various desiderata. Any corpus study must find a way to balance these demands, and the fulfilment of one inevitably leads to limitations in another. The four examples of studies of evaluative language have been used to illustrate various configurations of the 'flavours'.

References

Baker, P., Gabrielatos, C. and McEnery A. forthcoming. *Discourse Analysis and Media Bias: The representation of Islam in the British Press.* Cambridge: Cambridge University Press.

Barnbrook, G. and Sinclair, J. 1995. Parsing Cobuild entries. In Sinclair J., Hoelter M. and Peters C. (eds.) *The Languages of Definition: the formalization of dictionary definitions for natural language processing*. Studies in Machine Translation and Natural Language Processing volume 7. Luxembourg: European Commission. 13-58.

Bednarek, M. 2008 *Emotion Talk Across Corpora*. Basingstoke: Palgrave Macmillan.

Biber, D. 1988. *Variation in Speech and Writing*. Cambridge: CUP.

Biber, D. 2006. Stance in spoken and written university registers. *Journal of English for Academic Purposes* 5: 97-116.

Biber, D., Johansson, S., Leech, G., Conrad, S. and Finegan, E. 1999. *Longman Grammar of Spoken and Written English*. London: Longman.

Charles, M. 2006a. Phraseological patterns in reporting clauses used in citation: a corpus-based study of theses in two disciplines. *English for Specific Purposes* 25: 310-331.

Charles, M. 2006b. The construction of stance in reporting clauses: a cross-disciplinary study of theses. *Applied Linguistics* 27: 492-518.

Conrad, S. and Biber, D. 2000. Adverbial marking of stance in speech and writing. In Hunston and Thompson (eds.) 57-73.

Du Bois, J. 2007. The stance triangle. In Englebretson (ed.) 130-182.

Englebretson, R. (ed.) 2007 *Stancetaking in Discourse*. Amsterdam: Benjamins.

Francis, G., Hunston, S. and Manning, E. 1996. *Collins Cobuild Grammar Patterns 1: Verbs*. London: HarperCollins.

Francis, G., Hunston, S. and Manning, E. 1998. *Collins Cobuild Grammar Patterns 2: Nouns and adjectives*. London: HarperCollins.

Goldberg, A. 2006. *Constructions at Work: the nature of generalization in language*. Oxford: Oxford University Press.

Gries, S. 2006. Some proposals towards more rigorous corpus linguistics. *Zeitschrift für Anglistik und Amerikanistik* 54(2). 191-202.

Hiltunen, T. 2010. Grammar and Disciplinary Culture: a corpus-based study. Helsinki: Department of Modern Languages, University of Helsinki.

Hunston, S. 1989. Evaluation in Experimental Research Articles. Unpublished PhD thesis, University of Birmingham.

Hunston, S. 1995. A corpus study of some English verbs of attribution. *Functions of Language* 2 (2): 133-158.

Hunston, S. 2003. Lexis, wordform and complementation pattern: a corpus study. *Functions of Language* 10: 31-60.

Hunston, S. 2008. Pattern Grammar in Context. Paper presented at the University of Erlangen, June 2008.

Hunston, S. 2009. Phraseology and Evaluative Meaning in Corpus and in Text: the study of intensity and density. Paper presented at *Corpus Linguistics 2009*, University of Liverpool.

Hunston, S. 2011a. *Corpus Approaches to Evaluation: phraseology and evaluative language*. New York: Routledge.

Hunston, S. 2011b. Testing the Hypothesis: status nouns and semantic sequences in academic English. Paper presented at the *American Association for Applied Linguistics* conference, Chicago.

Hunston, S. and Francis, G. 1999. *Pattern Grammar: A corpus-driven approach to the lexical grammar of English*. Amsterdam: Benjamins.

Hunston, S. and Thompson, G. (eds.) 2000. *Evaluation in Text: Authorial stance and the construction of discourse*. Oxford: Oxford University Press.

Hyland, K. 2000. *Disciplinary Discourses: Social interactions in academic writing.* Harlow: Longman.

Hyland, K. & Tse, P. 2005a. Evaluative that constructions: signaling stance in research abstracts. *Functions of Language*. 12 (1): 39-64.

Hyland, K. and Tse, P. 2005b. Hooking the reader: a corpus study of evaluative *that* in abstracts. *English for Specific Purposes* 24: 123-139.

Labov, W. 1972. *Language in the Inner City*. Philadelphia: University of Pennsylvania Press.

Liu, B. 2010. Sentiment analysis and subjectivity. In N. Indurkhya and F.J. Damerau (eds.) *Handbook of Natural Language Processing* 2nd edition. Boca Raton: Chapman & Hall. 627-665.

Louw, B. 1993. Irony in the text or insincerity in the writer? - the diagnostic potential of semantic prosodies. In Baker, M., Francis, G., and Tognini-Bonelli, E. (eds.) *Text and Technology: In honour of John Sinclair*. Amsterdam: Benjamins. 157-176.

Martin, J. and White, P. 2005. *The Language of Evaluation: Appraisal in English*. Basingstoke: Palgrave Macmillan.

McEnery, T. and Hardie, A. 2012. *Corpus Linguistics*. Cambridge: Cambridge University Press.

O'Keeffe, A. 2007. Plenary lecture, Corpus Linguistics 2007 conference, University of Birmingham UK.

Plappert, G. 2012. Phraseology and Epistemology in Scientific Writing: A corpus-driven approach. Unpublished PhD thesis, University of Birmingham.

Semino, E. and Short . M. 2004. *Corpus Stylistics: Speech, writing and thought presentation in a corpus of English writing.* London: Routledge.

Sinclair, J. 1991. *Corpus Concordance Collocation*. Oxford: Oxford University Press.

Sinclair, J. 1998. Mirror for a Text. *Journal of English and Foreign Languages* 1: 15-44.

Sinclair, 2003. *Reading Concordances*. London: Longman.

Sinclair, J. 2004. *Trust the Text: Language, corpus and discourse*. London: Routledge.

Sinclair, J. and Coulthard, M. 1975. *Towards the Analysis of Discourse*. Oxford: Oxford University Press.

Stubbs, M. 2001. *Words and Phrases: Corpus studies of lexical semantics*. Oxford: Blackwell.

Thompson, G. and Hunston, S. 2000. Evaluation: an introduction. In Hunston and Thompson (eds.). 1-27.

Tognini-Bonelli, E. 2001. *Corpus Linguistics at Work*. Amsterdam: Benjamins.

Toolan, M. 1998. *Language in Literature: An introduction to stylistics*. London: Arnold.

Vincent, B. in preparation. Modality and Grammar Patterns. PhD thesis, University of Birmingham.

Wiebe, J., Wilson, T. and Cardie, C. 2005. Annotating expressions of opinion and emotions in language. *Language Resources and Evaluation* 39: 165-210.