Absolute disasters and other bleached words

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ABSTRACT

Bleaching (weakening of meaning) typically affects lexical items which express catastrophic events, such as \textit{catastrophe}, \textit{disaster}. But how do hearers interpret these words, when a disaster ranges from a serious earthquake to an overcooked dinner? This paper outlines recent advances in our ideas about the mental lexicon, then shows how these have contributed to our understanding of the bleaching process. The paper then explores how bleaching occurs by examining the case of \textit{disaster} in the British National Corpus, a data-base of spoken and written language.

1. INTRODUCTION

"I control the world so long as I can name it. Which is why children must chase language before they do anything else, tame the wilderness by describing it", says a character in Penelope Lively's novel \textit{Moon Tiger} (1987: 51). This comment summarises the common feeling that words are the key to language. Humans need to know thousands of them.

Children build up vocabulary at a rapid rate. A native English speaker's active vocabulary is likely to be at least 3,000 at the age of 5, around 20,000 by age 13, up to 50,000 by age 20 (Aitchison 1994, 1998). To put this into perspective, 50,000 is approximately two-thirds of the \textit{Concise Oxford Dictionary}, which claims to contain around 75,000 entries. Active vocabulary means words which could potentially be produced by an English speaker, though these are not necessarily used often. Words such as \textit{hyacinth}, \textit{acropolis}, and \textit{musicology} might be needed only occasionally. Between the ages of 5 and 20, then, English speakers acquire words at an average rate of 10 or more a day, and word learning continues throughout life. A minimum of 20,000 words is probably required for effective
communication - a total normally reached by a native speaker at around age 13 (Aitchison, Koppel and Lewis in prep.)

In the first half of the twentieth century, the mental lexicon (the human vocabulary store) was ignored by most serious linguists, who assumed that syntax was the key to linguistic ability. This has now changed, and the lexicon has become a major source of interest (e.g. Geeraerts 1993, Pustejovsky 1995, Pustejovsky and Boguraev 1996, Taylor 1995).

In this paper, I want to outline briefly the stages undergone by lexical studies in the past quarter century. Then I want to discuss an important issue that has surfaced in the 1990s, the bleaching-polysemy problem.

2. BIRDY BIRDS AND MAYPOLES (1970s-1980s)

The mental lexicon is not a random heap of junk. It is a complex and well-organized structure, and each decade has brought some new insight into its organization. The 70s can be regarded as the ‘birdy birds’ era, the 80s as the ‘maypoles’ period, and the 90s as the ‘wimps’ decade.

Prior to the 1970s, word meaning was viewed as a cake – a confection with a set recipe, whose ingredients could be ticked off on a list. This is sometimes called a ‘checklist’ view of meaning (Fillmore 1975). A square, for example, could be defined as “a closed flat figure, with four sides of equal length, and all interior angles equal”. Yet the checklist idea works only occasionally. Most words have meanings which overlap or are incurably fuzzy, as Wittgenstein (1958) pointed out for game, and Labov (1973) for bowl.

A possible solution to all this fuzziness was proposed in the mid-1970s by a psychologist, Eleanor Rosch (Rosch 1975). She initiated the ‘birdy birds’ decade (1970s), the study of prototypes. Humans do not rank all members of a category equally, she pointed out. They judge some to be very good examples, and others less so. So robins and blackbirds are very good birds, which she labelled prototypes. Canaries and doves are less good birds, owls and ducks are bad birds, and a penguin is a very bad bird indeed. People analyse the characteristics of the best bird, the prototype, and allow anything which sufficiently resembles it to belong to the category bird. This also explains how humans deal with oddities: why ostriches, emus and one-legged albino blackbirds are accepted as birds. Furthermore, prototype theory had important cross-linguistic implications: each language has its own prototypes and its own idiosyncratic ranking within categories.

Prototypes apply to verbs also. Prototypical climb involves upward movement combined with effortful use of limbs (Fillmore 1982), as in: Peter climbed the tree. In less central examples, one of these conditions may be absent, as: Peter climbed
down the tree, where *down* has to be specified, or *Peter climbed into his clothes*, with effortful use of limbs, but no upward movement. If both these conditions are absent, the example is probably unacceptable, as: *The plane climbed down to 10,000 feet, *The snail climbed along the wall. But prototypes apply not only to concrete categories such as birds and fruits, but also to abstract ideas, such as a *week* (Fillmore 1982), which in English is thought of as five working days, Monday to Friday, followed by two rest days, Saturday and Sunday—unlike, say, an Inca week, which had nine working days followed by market day, on which the king changed his wives. Prototypes therefore encapsulated a speaker's view of the world, and this incorporated metaphor.

Metaphors may reveal native speakers' mental models, Lakoff and Johnson argued (1980). Take *anger*. English speakers regard this as heated liquid in a container, which may explode (Lakoff 1987): *Henry was filled with anger; Penelope simmered with rage; Peter had reached boiling point; Felicity just blew up.* Here, the notion of heat is probably universal, and based on physiology, though the heat might be wet heat, as in English, or dry heat, as in some Indian cultures.

In the 1970s, then, prototypes led to a broader understanding of the lexicon, including new views on metaphor, and the exploration of cultural models. Prototypes also tied in with ‘spreading activation’, an idea gaining prominence in psychology at that time. This suggested a word or an idea fanned out and attracted more and more links in the minds of speakers, with no absolute limit, a viewpoint which has been further developed by psychologists in connectionist models of the mind (e.g. Elman et al. 1996).

The 1980s can be regarded as the ‘maypoles’ decade. Verbs are the maypole around which the sentence revolves, it was realised, and they determine its structure. This insight gradually permeated work on the lexicon. Traditionally, verbs are divided into those without an object (intransitive) as in *Pauline coughed*, and those with an object (transitive), as in *Paul caught a fish*. But this is an oversimplification, and verb structures are more subtle. A verb such as *creep* requires more information than the simple label ‘intransitive’: *Lionel crept* is incomplete, and must have an additional preposition phrase, as *Lionel crept down the hall.* *Mavis put the goldfish* is similarly incomplete: the location has to be specified, as *Mavis put the goldfish in the bath.* The so-called ‘argument structure’ of verbs therefore became increasingly important.

But this is still not the whole story. Verbs with a similar meaning tend to cluster together in their syntactic behaviour (Levin 1993). Sound emission verbs have the source of sound followed by the sound emitted: *the bell clanged, the siren wailed*, and light emission words are similar: *the lightning flashed, the sun shone.*
Some verb patterns can be deceptive. Take ‘grooming’ verbs, such as shower, wash. These may be intransitive, as in Tim showered and Helen washed, in which case Tim and Helen are grooming themselves. If they are grooming someone else, then the groomed object is specified: Tim showered the dog and Helen washed the baby. But ‘activity’ verbs, such as cook and clean, pattern differently. Don cooked and Angela cleaned does not mean that Don and Angela are cooking or cleaning themselves: the object is assumed to be something external and inanimate, as Don cooked the dinner and Angela cleaned the floor. English speakers know this intuitively, and are often surprised when the difference between wash and clean is pointed out. But they probably acquired these patterns as children, by paying attention to verbs and the words around them. A study of Kelli, a blind child, showed that she acquired the difference between look and see by noticing the structures accompanying them: Look, here’s how you wind the clock; Come and see the kitty (Landau and Gleitman 1985).

Sensitivity to the verb and its syntactic behaviour is the key to learning grammatical rules, it was realised. Humans acquire the maypole alongside its attached strands. But this supersensitivity to words which are found alongside one another has further implications, as outlined below.

3. WIMPS: COLLOCATION AND CO-OCCURRENCE (1990s)

Lexical items are not isolated chunks. This insight was the basis of the ‘wimps’ decade (1990s). All words, not just verbs, are crucially linked to those around. Noticing which words occur together is the key to sounding like a native speaker. Collocation (words which are located next to one another) and co-occurrence (words which occur near one another) are of major importance in language usage.

Humans learn the meaning of new words by paying attention to those surrounding them, as with wimp “feeble male”. This word is widely used, but has crept into dictionaries only recently, so must have been learned via its use. In a survey of wimp-words in newspapers, 65% of wimps were male, 2% were female, and the remainder were unspecified for sex (Aitchison and Lewis 1995). 84% were accompanied by clues to the pathetic nature of wimps. The word’s negative image was specified either by its collocation with pejorative words, as feeble wimp, dithering wimp, nervous wimp, or by contrast with a positive image: He was a go-getter, a doer, not some depressed wimp. Negativeness was also conveyed via a covert negative evaluation: Who needs an enclosed cockpit? Wimps, that’s who.

Co-occurrence explains how English speakers learn to handle antonyms (graded opposites). These are superficially confusing, in that a word may have more than one opposite, as short versus long visit, short versus tall man. But they are probably learned by native speakers without difficulty, because opposites
frequently occur near one another in the same sentence, as: *Don’t mix clean clothes with dirty ones; You’ll have to take the rough with the smooth*, and so on (Fellbaum 1995). This explains how humans are able to use the appropriate opposite when there are several possibilities.

Co-occurrence is also the key to distinguishing near-synonyms (Atkins and Levin 1995). Words such as *broad* and *wide*, *chase* and *pursue*, often have similar definitions in dictionaries. Examination of these words in linguistic corpora can solve the puzzle of how English speakers manage to use them appropriately (Aitchison and Lewis 1996). The examples below are from the British National Corpus (BNC).

*Wide* and *broad* sometimes overlapped, but also had their own non-overlapping contexts. *Wide* was used in measurements in 13% of examples, where it tended to co-occur with *long* and *deep*, and possibly involved a mental model of a cube: *The dish is about this long, this wide, and about that deep. And I make it on Thursdays, nice big lasagna. And I ate it all!* No examples of measurements were found for *broad*.

Only *broad*, on the other hand, was used to mean “lacking detail”. It occurred in phrases such as *broad outline, broad spectrum, broad sweep, broad terms*, as: *In broad terms the master plan is unchanged in concept but we think improved in detail.*

However, both *broad* and *wide* overlapped strongly in their commonest usage, which was for figurative extension, as in *broad/width choice, broad/width support, broad/width view*. Such usages accounted for 52% of *broad* examples, and 42% of *wide* ones.

*Chase* and *pursue* were also distinguished by their contexts. English speakers use them with different objects. *We chase runaway horses, burglars, balls and other physical things*, as in: *More frigging football! Bunch of tarts going round a field chasing a ball!*. 34% examples involved physical following for *chase* but only 1% for *pursue*.

On the other hand, we pursue abstract ideas, aims, targets, and policies, as in: *We need to take the initiative in pursuing a strategy for employment and growth.* Figurative journeying along a path in this way accounted for 76% of examples of *pursue* but no examples of *chase*. So these verbs are distinguished by the objects chased, and the targets pursued, even though the meaning “follow after” is given for both *chase* and *pursue* in some dictionaries.

The 1990s, therefore, is a decade in which words are no longer treated as isolated chunks. All parts of speech, not merely verbs, are realised to be integrated with those around them.
4. THE BLEACHING-POLYSEMY PROBLEM

The upsurge of interest in the lexicon in the 1990s has led to the exploration of further lexical problems. One of these is that of multiple meanings, or polysemy (e.g. Geeraerts 1993, Pustejovsky 1995, Pustejovsky and Boguraev 1996).

The ‘bleaching’ problem is one facet of polysemy, words which apparently fade in meaning. Yet “bleached” words do not just “weaken”, as was once supposed. Instead, the original meanings often remain, alongside the newer, bleached ones. They therefore exhibit meaning expansion via polysemy.

The bleaching process can be explored by looking at words for catastrophic events, such as catastrophe, disaster, tragedy, which typically bleach fast (Aitchison and Lewis in prep).

Dictionaries agree that these words describe serious misfortunes as their primary meaning, and provide overlapping definitions for them, as in the The New Oxford Dictionary of English (Oxford University Press 1998) (henceforth NODE):

- catastrophe, noun, an event causing great and often sudden damage or suffering; a disaster.
- disaster, noun, a sudden event such as an accident or a natural catastrophe that causes great damage or loss of life...
- tragedy, noun, an event causing great suffering, destruction, and distress, such as a serious accident, crime or natural catastrophe.

Only the entry for disaster includes information that it may be used in less dire circumstances: “an event or fact that has unfortunate consequences... informal a person, act or thing that is a failure”.

An analysis of data from the BNC suggested that informal, humorous or figurative uses of all these words are extensive, alongside their more serious, older meanings. Examples of (a) serious and (b) trivial uses are given below:

(1a) A large comet hitting the earth would mean catastrophe.
(1b) To fall in love with Alexander would be a catastrophe.

(2a) ...the Hillsborough football disaster which killed 95 people.
(2b) To get a panama hat wet is to court disaster. The hat becomes limp and shapeless.

(3a) 259 passengers and crew... were killed by a bomb. This was Britain’s worst air tragedy.
(3b) The great tragedy of modern music is that... the results are less and less significant from a human point of view.

These examples suggest that the disaster words are more readily interchangeable in their serious than their trivial usages. It would be bizarre to
regard a wrecked hat as a *catastrophe*, or to talk of modern music as a *disaster*, for example. This observation indicated that close attention to a range of examples might shed light on the bleaching process.

First, the problem was quantified, by examining the frequency per million w-units of the various ‘disaster’ words in the BNC (a w-unit is, roughly, a lexical item). This is shown on Table 1.

**Table 1. Disaster nouns: frequency per million w-units.**

<table>
<thead>
<tr>
<th></th>
<th>BNC spoken</th>
<th>BNC written</th>
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</thead>
<tbody>
<tr>
<td>Catastrophe</td>
<td>1.1</td>
<td>5</td>
</tr>
<tr>
<td>Disaster</td>
<td>22.3</td>
<td>32.1</td>
</tr>
<tr>
<td>Tragedy</td>
<td>6.3</td>
<td>19.3</td>
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As Table 1 indicates, *disaster* is the most frequently used disaster noun, and therefore, potentially, the one which might reveal details of the bleaching process.

First, the scale of the disasters was explored: the proportion of ‘real’ disasters to trivial inconveniences was investigated by dividing BNC examples of *disaster* into serious (S), medium (M) and trivial events (T). As a rough rule of thumb, an event which caused multiple deaths was classed as (S), one which involved one or two deaths, inflicted severe suffering on a small number of people, or caused environmental damage was listed as (M), one which caused social inconvenience was classed as (T). This is shown on Table 2.

**Table 2. Scale of disaster.**

<table>
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<th></th>
<th>Serious</th>
<th>Medium</th>
<th>Trivial</th>
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<tbody>
<tr>
<td>Spoken n=185</td>
<td>92 (48%)</td>
<td>27 (14%)</td>
<td>66 (35%)</td>
</tr>
<tr>
<td>Written n=589</td>
<td>255 (43%)</td>
<td>122 (20%)</td>
<td>212 (36%)</td>
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The largest single group involved wars or serious accidents, which typically killed a large number of people (S):

(4) At least 62 people were killed and 3,000 missing last night after an underwater earthquake sent 50ft tidal waves crashing into the coast of Nicaragua. More than 227 people were injured in the *disaster*.

Environmental disasters were categorised as (mostly) (M):

(5) But if all 22 million gallons escape, the *disaster* will be twice as bad as the 1988 Exxon Valdez spill off Alaska.
Social, political and economic disasters were split between the (M) and (T) classifications:

(6) If the tests prove positive, the flock is slaughtered: “For many farmers it spells financial disaster...” the association’s chairman said. (M)

(7) The Tories were heading for disaster if they continued to delude themselves that only a little fine tuning of presentation was required to secure a fourth consecutive general election victory. (T)

Personal disasters were sometimes (M) when one or two people died or were injured. But the majority of personal disasters were quite trivial (T), covering household inconveniences, fashion problems or minor social difficulties, as in (2b), also (8, 9):

(8) All other efforts to lose the fat from the offending areas proved to be a disaster. If I lost weight below 54kg my bust disappeared, yet nothing went from my legs or posterior!

(9) The only reason I’m running up these debts is that now I’ve got so little capital left, that I’ve got to keep the capital for sheer disasters like the boiler.

Amidst this plethora of trivia, several topics recurred, especially sports (10, 11) and cookery (12, 13):

(10) The last wicket fell... So it was another blackwash, another disaster for England.

(11) Poor old Tommy had a disaster. He three-putted from three feet and made a double-bogey at the very first hole.

(12) There have been many disasters along the road, Yorkshire puddings you could sole your shoes with... and last Christmas a chocolate log that disintegrated, the proud little Santa on top sinking without trace in a sea of chocolate grunge.

(13) Stephanie likes cooking. I don’t, not since my disaster with the soup.

The question of how speakers use the wide-ranging word disaster appropriately, and how hearers interpret it in the way intended by the speaker is at first sight a puzzle. On consideration, the surrounding context made clear the level of disaster intended, though not always in an obvious way.

Major disasters were the most straightforward. These were often named geographically, and sometimes further explained, as: the Bradford football disaster, the 1986 Chernobyl nuclear disaster, the Hillsborough disaster, the
Kegworth air disaster, the Lockerbie disaster, the Siberian pipeline disaster, the Stalingrad disaster, the Zeebrugge ferry disaster. A geographical location was the major clue that a serious incident involving multiple deaths had taken place.

If the disaster was not a major one, at a well-known location, then the type of disaster was often specified, as: ecological disaster, economic disaster, environmental disaster, financial disaster, industrial disaster.

For trivial incidents, the cause of the problem tended to be noted immediately afterwards, as:

(14) The gravy's a disaster. It's got too much fat in it.

But in addition, as noted above, listeners/readers have by now come to expect that a sport or cookery disaster will be something minor. A sports event could also be a tragedy, though a cookery problem could not: perhaps a cookery tragedy would indicate food poisoning.

In addition, other collocating words often signalled whether the event was a genuine disaster or a social hiccup. In particular, intensifiers often diminished the seriousness of the disaster: each disaster-noun had its own, though with occasional overlaps. The words absolute or total when collocated with disaster tended to indicate a fairly trivial event:

(15) The majority of dinners are very pleasant affairs, but some can be absolute disasters.

Similarly, the phrase disaster strikes or disaster struck typically referred to a minor, unimportant happening:

(16) Even if disaster strikes, as it seemed to for one student of mine who dropped her nearly completed head on the concrete floor and an ear snapped off [the wooden rocking horse she was carving], don't let it worry you unduly. We simply glued the broken ear back in place.

Yet this is not the whole story: collocation indicates not only the seriousness level, but also the factivity of the event. Many disasters discussed are potential, rather than actual. Only a proportion have actually happened, and the remainder are impending or hypothetical.

The hypothetical nature of disasters is shown by the linguistic expressions used with them, as: avert, avoid, court, expect, face, foretell, head for, head off, predict, prevent, save from, warn of; imminent, impending, near, potential; brink of, chance of, doomed to, expectation of, fear of, recipe for; can be, could be, could have been, would be, would have been.
The main characteristic of these hypothetical expressions was their diversity: in the written corpus, only *can, could + verb, would + verb*, occurred more than ten times. For example:

(17) When you rescue the old Christmas tree lights from the loft for the umpteenth time, remember that they *could be* the cause of an electrical *disaster*.

Since major disasters are relatively rare, the hypothetical use of the word *disaster* may be a key factor in its escalating use, which has allowed the word to bleach.

But, to summarise, analysis of *disaster* has showed, first, the importance of an up-to-date data-base which includes samples from both written and spoken language. Second, it has demonstrated that it may be possible to identify the source of bleaching/polysemy. In the case of *disaster*, particular areas, those of sport and cookery, have played an important role in the process. Third, it has highlighted the importance of looking at the surrounding words: particular collocations signify to speakers/hearers whether the disaster is a serious or trivial one.

5. CONCLUSION

This paper has provided an overview of advances in understanding the mental lexicon over the past quarter century. It has shown how a broad understanding, whose roots were grounded in the 1970s has become progressively refined in the 1980s and 1990s.

REFERENCES


