
Contemporary Approaches, Contemporary Issues

This chapter introduces the reductive paraphrase (or Natural Semantic Metalanguage) approach to semantic analysis used throughout this book and compares it with some of the other cognitively oriented systems in current use. It also explains the 'prototype effect' and explores how it may be accounted for within a paraphrase approach to meaning. Finally, it describes some of the concepts about metaphor and bodily 'image schemas' which are important to the new cognitive semantics movement.

3.1 The Natural Semantic Metalanguage approach

The **REDUCTIVE PARAPHRASE** or Natural Semantic Metalanguage (NSM) approach is founded on the principles of clarity and simplicity. It originated in Eastern Europe in the 1960s with the Polish scholar Andrzej Bogusławski, and has subsequently been developed and elaborated by Anna Wierzbicka. Though Polish by birth, Wierzbicka has been based at the Australian National University (Canberra) since the 1970s.

An ideal NSM semantic analysis (often called an **EXPLICATION**) is a paraphrase composed in the simplest possible terms, thus avoiding circularity and obscurity. No technical terms, 'fancy words', logical symbols, or abbreviations are allowed in explications, which should contain only simple expressions from ordinary natural language (e.g. *I, you, someone, do, happen, think, know, good, big, because*). As a true paraphrase, the explication should be exhaustive; that is, it should faithfully portray the

full meaning of the expression being analysed. It is also expected that an explication couched in semantically simple terms will be readily translatable across languages.

One reason for the reliance on natural language is that, as John Lyons (1977: 12) once put it: 'any formalism is parasitic upon the ordinary everyday use of language, in that it must be understood intuitively on the basis of ordinary language.' In a sense, therefore, the NSM approach merely makes a virtue of necessity in seeking a system of representation based as closely as possible on natural language.

The NSM approach accepts a stringent standard of descriptive adequacy—the test of **SUBSTITUTABILITY** without change of meaning. This means that the ultimate test of a good explication is that native speakers agree that the explication and the original expression say exactly the same thing. This is another reason to formulate explications in straightforward, non-technical terms: they must be as intelligible as possible to ordinary language users.

Semantic primitives

Once we adopt the principle of reductive paraphrase it follows that there ought to be a set of expressions—a kind of semantically minimal 'core'—that remains even after a completely exhaustive semantic analysis has been carried out. These are semantically primitive expressions, which cannot be defined any further. The compelling logic that leads to this conclusion has been recognised through the ages by thinkers of many different persuasions. In the seventeenth century, Pascal, Descartes, Arnauld, and Leibniz all saw the need for semantic primitives. For example, Arnauld wrote:

I say it would be impossible to define every word. For in order to define a word it is necessary to use other words designating the idea we want to connect to the word being defined. And if we then wished to define the words used to explain that word, we would need still others, and so on to infinity. Consequently, we necessarily have to stop at primitive terms which are undefined. (Arnauld and Nicole 1996 [1662]: 64)

Leibniz even began a programme of lexical investigation with a view to discovering the primitive notions and rules of composition from which all complex notions were composed (Ishiguro 1972: 36–48)—his *ars combinatoria* or 'universal characteristic'. More recently, similar reasoning has led to the advocacy of semantic primitives ('atomic concepts', 'elementary meaning components') by Sørensen (1958), Greimas (1966), Bogusławski

(1965, 1970), Bendix (1966, 1971), Katz and Postal (1964), Fillmore (1971), McCawley (1968, 1970), Lakoff (1970, 1972), Jackendoff (1983, 1990), and many others.

However, of all the modern proponents of semantic primitives, Anna Wierzbicka has been at once the most persistent, and the most insistent that semantic primitives can and must be embodied in expressions (words, bound morphemes, or fixed phrases) from ordinary, natural language. In all her studies, Wierzbicka has attempted to work with a small inventory of hypothesised semantic primitives in mind, with a view to testing the adequacy of the set as a whole. In 1972, with the publication of her first book, titled *Semantic Primitives*, the proposed set numbered a mere fourteen. Since then, the list has been expanded to nearly sixty items. They are listed in Table 3.1 (cf. Wierzbicka 1996).

The main 'discovery method' which has led to the current NSM inventory has been experimentation (trial and error) with trying to define a wide variety of expressions. All the proposed primitives have proved themselves, on the one hand, to be very useful and versatile in framing explications, and, on the other hand, to be themselves resistant to (non-circular)

Table 3.1. Proposed NSM semantic primitives (after Wierzbicka 1996)

Substantives: I, YOU, SOMEONE, PEOPLE/PERSON; SOMETHING/THING
Mental predicates: THINK, KNOW, WANT, FEEL, SEE, HEAR
Speech: SAY, WORD
Actions, events, and movement: DO, HAPPEN, MOVE
Existence: THERE IS
Life: LIVE, DIE
Determiners: THIS, THE SAME, OTHER
Quantifiers: ONE, TWO, SOME, ALL, MANY/MUCH
Evaluators: GOOD, BAD
Descriptors: BIG, SMALL
Time: WHEN/TIME, NOW, BEFORE, AFTER, A LONG TIME, A SHORT TIME, FOR SOME TIME
Space: WHERE/PLACE, HERE, ABOVE, BELOW; FAR, NEAR; SIDE, INSIDE
Interclausal linkers: BECAUSE, IF
Clause operators: NOT, MAYBE
Metapredicate: CAN
Intensifier, Augmentor: VERY, MORE
Taxonomy, partonomy: KIND OF, PART OF
Similarity: LIKE

explication. Ultimately, the only way to show that something is NOT an indefinable element is to succeed in defining it. It is never possible, strictly speaking, to prove absolutely that something is indefinable. The best we can say is that as various attempts are made and seen to fail—as in the case of elements like I, YOU, SOMEONE, SOMETHING, THIS—the claim to indefinability becomes stronger and stronger.

Semantic primitives as universals

An important NSM principle is that a semantic primitive ought to be a so-called LEXICAL UNIVERSAL, in the sense that it should have a counterpart—an exact translation—in every human language. It has to be stressed, however, that the term 'lexical' is used in a broad sense to include not only words, but also bound morphemes and fixed phrases. In many languages there are primitives which are expressed by bound morphemes, rather than by separate words. For example, in Yankunyjtjara the primitive BECAUSE is expressed by the ablative suffix *-nguru* (see § 10.1). In some languages, there are primitive meanings expressed by means of fixed phrases (also known as phrasemes) composed of several words. The English expression A LONG TIME provides a convenient example: notice that the meaning cannot be broken down into the words *a*, *long* and *time* in their ordinary senses. In many (perhaps most) languages the meaning A LONG TIME is conveyed by a single word; for example, Malay *lama*, Yankunyjtjara *rawa*, Lao *don*.

Even when semantic primitives do take the form of single words, there is no need for them to be morphologically simple (though very often they are). For example, in English the words SOMEONE, MAYBE, and INSIDE are morphologically complex. But, and this is the crucial point, their meanings are not composed from the meanings of the morphological 'bits' in question. That is, *someone* ≠ *some+one*, *maybe* ≠ *may+be*, and *inside* ≠ *in+side*.

Semantic primitives may have variant forms (allolexes or allomorphs). This is the phenomenon of ALLOLEXY. To illustrate from English, in some combinatorial contexts the word *thing* is equivalent in meaning to SOMETHING. It sounds odd to combine *something* directly with determiners or quantifiers (e.g. *this something*, *one something*), but the relevant meaning combinations can be expressed quite naturally if the word *thing* is used in place of *something* (e.g. *this thing*, *one thing*). Another kind of allolexy found in English involves the pronoun I, which occurs post-verbally as *me*, because of a language-specific rule of English whereby most pronouns

have post-verbal variants (*I/me, he/him, she/her, they/them, etc.*). NOT also has several allolexic variants, including *don't* and *no*.

All these factors, as well as the fact that exponents of semantic primitives are often polysemous, mean that testing the translatability of semantic primitives is no straightforward matter. Research on this is still going on in a variety of languages, cf. Goddard (1991a), Goddard and Wierzbicka (1994b), Goddard (1997c). Although the existence of lexical counterparts for the NSM primitives has been confirmed for languages as diverse as French, Thai, Yankunytjatjara, Ewe, and Japanese, there are some problem areas and it is too early to be conclusive. It is safe to say, however, that the NSM primitives are RELATIVELY more translatable than the vast majority of other English words.

A natural semantic metalanguage

The set of semantic primitives is supposed to be a complete lexicon for semantic analysis. It should contain only expressions which are indefinable or incapable of further explanation, and it should contain all such expressions, making it powerful enough to take on the full range of complex meanings capable of being expressed in the language as a whole. The primitives constitute a kind of 'mini-language' with the same expressive power as a full natural language, hence the term NATURAL SEMANTIC METALANGUAGE.

A full account of the NSM metalanguage needs an explicit description of its syntax as well as of its lexicon. It is hypothesised that certain patterns of combination of primitives are found universally. For instance, given the primitives SOMEONE, SOMETHING, SAY, BAD, and YOU, it is hypothesised that one could put them together to say, in any language, the equivalent of SOMEONE SAID SOMETHING BAD ABOUT YOU. Other examples of sentences embodying hypotheses about NSM syntax are as below:

Maybe something bad happened.

I want to do this.

These people lived for a long time.

I did it like this.

That place is far from here.

This thing has two parts.

If you do this, people will think something bad about you.

It is not necessary for us explore the syntax of the NSM metalanguage in any detail at this point (see § 12.2), but the basic claim should be clear

enough: that there is a set of correspondences between the semantic primitives of all languages and also between certain combinations of primitives, so that, essentially, anything that can be said in one NSM can be precisely translated into any other. The viability of a universal semantic metalanguage is an empirical question, but not one we can delve into deeply here. In this book we use the reductive paraphrase approach primarily for its practical and heuristic value. There is more information about the NSM theory in § 12.1 and § 12.2.

3.2 Doing reductive paraphrase explications

It is not always necessary to resolve an explication right down to the level of semantic primitives. An explication can still be reductive—and still be valuable—even while containing some semantically complex terms, provided that none is more complex than the original term being defined and provided none needs to be defined in terms of the original word. It is usually helpful to work on a group of related words at the one time, because this helps sensitise you to the subtleties of meaning involved. Collect examples of different uses of the words you are interested in. It is also helpful to find some contexts where a word CANNOT be used felicitously. You then begin to draft paraphrases, checking to see if they can be substituted into the examples and if they have the right entailments. Usually many drafts and re-drafts will be necessary before a satisfactory explication is found.

There are a couple of rules of thumb to safeguard against circularity. Try to avoid using words which come from the same semantic field you are working in. For instance, do not use kinship words to define other kinship words; do not use colour words to define other colour words. If it is convenient to use certain field-internal words to define others, make sure these words are themselves adequately explicated beforehand. For instance, in the kinship field it is very useful to use the notions *mother* and *father* to help explicate other terms like *uncle*, *grandmother*, *cousin*, and so on. This is safe only if *mother* and *father* are first independently defined.

Some semantic fields, such as emotion words and speech-act verbs, seem to have a direct foothold in the inventory of primitives. Emotion words like *sad*, *angry*, and *homesick*, for instance, all include components based on FEEL, THINK, and WANT. Speech-act verbs like *demand*, *promise*,

and *complain* include comparable components with *SAY* and *WANT*. In such cases, the safest thing to do is to try to cast the explication directly into primitive, or near-primitive, terms.

When we try to follow these procedures, it turns out that it is still quite possible to work out definitions and they are often more descriptively adequate than definitions using obscure terms. However, they are usually very much longer, often running to a dozen or more component clauses. Even quite simple sounding words often turn out to have complex meaning structures. Let's see some examples.

Reductive paraphrase analysis of mother

We've already seen that the standard componential analysis for *Y's mother* as [-MALE, PARENT OF Y] is open to the criticism that *parent* is not a prior and more intelligible term than *mother*. Nor, incidentally, is *parent* any more translatable than *mother* or *father*. On the contrary, it is easy to find languages without any such word. In such cases the requisite meaning is expressed, not surprisingly, as 'mother and father'.

How would a reductive paraphrase tackle the meaning of *mother*? The most promising starting point would be a biological characterisation. My mother is the one who gave birth to me. The fact that this is analytically true is evidence for a semantic link between the notions of 'mother' and of 'birth-giver'. Of course, we would not want to use the term 'birth' in the explication itself. For one thing, it is too complex. It also doesn't seem right to have 'giving birth' as a process included in the explication of *mother*. But the idea that I 'started out', so to speak, inside my mother's body before I was a person in my own right seems a viable basis for a meaning component of *mother*.

Then there is the question of the expected social role of a mother, roughly, that of a 'caregiver'. Evidence that some reference to this ought to be included in the meaning of *mother* is provided by the fact that the verb *to mother* refers to protective, nurturing behaviour. The explication below combines components of both biology (birth-giver) and social expectation.

X is Y's *mother*=

at some time before now, Y was very small

at this time Y was inside X's body, Y was like part of X

because of this, people can think something like this:

X wants to do good things for Y

X doesn't want bad things to happen to Y

It has been argued (Lakoff 1987: 83-4) that the concept of motherhood does not require any biological component, because of the existence of *adoptive mothers* and so-called *donor mothers*, who provide eggs for *in vitro* fertilization. This overlooks the fact that without modifiers the usual sense of *mother* is clearly that of birth-giver, and that the expressions *the real mother* and *X's real mother* are confined to birth-giver. It is true that the words *real mother*, and even *mother* itself, can occur in reference to caregiver only, as in *She gave birth to me, but she was never a (real) mother to me*, but there are subtle syntactic and semantic factors to be taken in account; for instance, the difference between *a (real) mother to me* (caregiver) and *my real mother* (birth-giver). Combining both biological and social expectation components paves the way for an explanation of these subtleties. The expected caregiver role also helps account for the use of *mother* in similes (*She was like a mother to me*), and even to explain some of the secondary meanings (e.g. in relation to nuns).

Reductive paraphrase analysis of chase

Katz's analysis of *chase*, which we saw in § 2.6, comes down to this: '(an activity of) fast (physical) movement (in the direction) towards Y with the purpose of catching Y.' This formulation is marred by obscurity since the word *catch* is presumably of comparable complexity to *chase* itself. There is also a question about its descriptive adequacy. As various critics have observed, one can *chase* something without necessarily wanting to catch it: one might want to kill, to hit, or just to touch it. We cannot get out of trouble simply by replacing *catch* with *catch up with*. Not only is this expression even more idiomatic and obscure than *catch*, it is still subject to the objection that one can chase something just for the fun of it, without necessarily wanting even to catch up with it.

The solution has two parts. First, we must invoke the concept of 'likeness'—when chasing something one moves towards it AS IF one wanted to do something to it. Second, we have to be vague about what the projected action is—we cannot go further than saying that the projected goal of the chaser is just to DO SOMETHING TO Y. These ideas are built into the explication below, which also incorporates a detail overlooked by Katz (or perhaps implicit within the verb *catch*), namely that the person or thing being chased must itself be moving away. As well, the explication does without the complex notion of *quickly*, by bringing in the idea that the motive (or imputed motive) of the chaser is to get near the thing in A SHORT TIME.

X was *chasing* Y=
 at some time before now
 Y was moving away from X
 at the same time X was moving towards Y
 as if X wanted to be near Y a short time after that
 because X wanted to do something to Y

Admittedly, this explication uses some concepts like *away from* and *towards*, which are complex (see § 8.1) but even so it is clearly moving in the right direction, so to speak. *Away from* and *towards* are certainly simpler than *chase* (i.e. the explication is reductive) and they will not require *chase* in their own eventual explications (i.e. no circularity is incurred). Overall, the explication constitutes a set of clear, testable hypotheses about the meaning of *chase*.

3.3 An abstract metalanguage: Ray Jackendoff's conceptual semantics

Ray Jackendoff is the major semantic theorist associated with the dominant school of generative grammar led by Noam Chomsky. He has been a staunch defender of a conceptualist approach to semantics; that is, he believes that word meanings should be thought of as composed of what 'ordinary language calls *concepts, thoughts or ideas*' (1990: 1). Like Wierzbicka, he sees the 'indefinitely large' stock of possible word-meanings (lexical concepts) as built up from a finite set of 'conceptual primitives' and principles of combination. Unlike Wierzbicka, however, Jackendoff does not see conceptual primitives as anchored in the meanings of ordinary words. His system can be seen as an **ABSTRACT SEMANTIC METALANGUAGE**.

Developments in Jackendoff's 'conceptual semantics'

Jackendoff (1983) proposed that among the innate concepts is a set of conceptual categories which are 'semantic parts of speech'. These include Thing, Event, State, Action, Place, Path, Property, and Amount. Each of these can be elaborated into a function-argument organisation, by means of 'conceptual functions' such as GO, STAY, TO, FROM, VIA, and CAUSE,

among others. For example, the rule in (a) below says that a constituent which is an Event can take the form of either of the two Event-functions GO ('motion along a path') or STAY ('stasis over a period of time'). Each of these functions takes two arguments, the first of which is in both cases a Thing. The second is a Path in the case of GO (*Bill went to New York*) and a Place in the case of STAY (*Bill stayed in the kitchen*). An Event can also be constituted by the function CAUSE, as shown in (b). Similar rules stipulate how each of the other constituent types (Thing, State, Action, Place, Path, Property, and Amount) can be elaborated.

a.

$$[\text{EVENT}] \rightarrow \left\{ \begin{array}{l} \left[\begin{array}{l} \text{Event} \\ \text{Event} \end{array} \text{ GO } ([\text{THING}], [\text{PATH}]) \right] \\ \left[\begin{array}{l} \text{Event} \\ \text{Event} \end{array} \text{ STAY } ([\text{THING}], [\text{PLACE}]) \right] \end{array} \right\}$$

b.

$$[\text{EVENT}] \rightarrow \left[\begin{array}{l} \text{Event} \\ \text{Event} \end{array} \text{ CAUSE } \left(\left[\begin{array}{l} \text{THING} \\ \text{EVENT} \end{array} \right], [\text{EVENT}] \right) \right]$$

More recently, Jackendoff has moved in the direction of an even more abstract, feature-based metalanguage. Whereas in 1983 he viewed functions like GO, STAY, and CAUSE, and categories like Thing, Path, and Place as conceptual primitives he now sees value in decomposing them further. The stage illustrated above, he now says, can be compared to that stage in the history of chemistry in which the elements of the periodic table had been identified but before the internal structure of the atom had been described. For instance, the category Thing as used above is intended to denote individuals only. Jackendoff (1991) argues, however, that individuals need to be brought under a larger supercategory which also takes in groups, substances, and aggregates. He proposes to call the supercategory Material Entity (Mat for short), and to recognise two binary features $\pm b$ (bounded) and $\pm i$ (internal structure) so as to decompose the notions of individual, group, substance and aggregate as follows:

- Mat, +b, -i: individuals (e.g. a pig, someone)
- Mat, +b, +i: groups (e.g. a committee)
- Mat, -b, -i: substances (e.g. water)
- Mat, -b, +i: aggregates (e.g. pigs, people)

The earlier primitives Place, Path, State, and Event are also regarded as decomposable. Place and Path are now seen as instances of the supercategory Space, and State and Event are seen as instances of the supercategory Situation. The discrimination between them is achieved by a

'abstract' meanings; for instance, it might be claimed that CAUSE and LIQUID don't really necessarily mean exactly the same as the English words *cause* and *liquid*. However, as emphasised by various critics (e.g. Kempson 1977; Lyons 1977; Wierzbicka 1980a: ch. 1), a semantic analysis can only be tested and improved on the assumption that it bears a straightforward relationship with natural language.

To see this, let us suppose that someone were to analyse *kill* as: [INTEND] X ([CAUSE] X ([DIE] Y)). The evidence of ordinary usage would be against this because it is not contradictory to say *John killed Bill without intending to*. That is, we can test and disconfirm the proposed analysis by reference to what is and isn't acceptable in ordinary English. On the other hand, if the elements of a semantic analysis are regarded as 'merely abstract constructs' then we deprive ourselves of the simplest way of testing the analysis.

We can illustrate further with another example involving *kill*, this time a real one. In the 1970s, linguists such as James McCawley and George Lakoff proposed the analysis *kill*=X CAUSE (Y DIE). It was quickly pointed out by critics that *cause to die* doesn't necessarily mean *kill*. Katz (1970: 253) made up a little tale about a Wild West sheriff whose six-shooter is faultily repaired by the local gunsmith, as a result of which the weapon jams at the last moment and he is gunned down. Clearly the gunsmith caused the death of the sheriff, but, equally clearly, the gunsmith did not kill him, showing that the causative relationship inherent in *kill* must be somehow 'direct'. Fillmore (1972) pointed out that *Peter killed the cat in the attic* and *Peter caused the cat to die in the attic* were not synonymous, highlighting the fact that some 'unity of place' is required. Fodor (1970) pointed out that unity of time was also required. It is OK to say *John caused Bill to die on Sunday by stabbing him on Saturday*, but there is no way that the two time specifications can be indicated using *kill*.

These objections should have led to the original analysis being revised, but instead McCawley (1972) proposed that there were two underlying 'abstract' semantic components CAUSE₁ and CAUSE₂, corresponding roughly to direct and indirect causation respectively. Neither, he said, could be identified with the English word *cause*; nor could they be understood as *directly cause* and *indirectly cause* either. I hope you can see how this manoeuvre makes the analysis completely unverifiable. Whenever a counter-example is pointed out, the analyst can just say 'Oh, I didn't mean that. That component is abstract, you see. It doesn't mean the same as any English word.'

3.4 New approaches: frames and scenarios

So far in this chapter we have looked at two contemporary approaches to semantic metalanguage, Wierzbicka's NSM semantics and Jackendoff's Conceptual Semantics. There are some other noteworthy contemporary systems as well, but before we come to those it will be helpful to ask: What kinds of meaning structures can we expect to find in a language? Most people assume that word-meanings must be pretty simple; that one could expect, for instance, to be able to define a word in terms of half a dozen or so other words, like a dictionary does. Traditional approaches assumed that a meaning was a list of features. Lately, however, semanticists of different persuasions have come to see that many word-meanings involve complex cultural information best described by reference to what are variously called frames, scenarios, and scripts.

The basic idea is that a language provides its speakers with a stock of idealised situations with a narrative-like structure—that there are countless little 'cultural stories' about life and human nature embedded in the vocabulary of any language.

Frames

Charles Fillmore is the main theorist behind the development of what is sometimes called 'frame semantics'. His work is driven by the conviction that semantic theory must be linked directly to people's comprehension processes, that is, to how we understand texts in context. A good description of a word-meaning should therefore fit into a theory about how people apply their lexical knowledge in interpreting and producing real discourse. This implies finding ways of integrating information about a word's meaning and grammatical properties both with information about related words and with our general cultural knowledge about the world.

According to Fillmore, the meaning of a word can only be understood against a background FRAME of experience, beliefs, or practices that 'motivate the concept that the word encodes'. One of his favourite examples is the set of verbs *buy, sell, charge, pay, cost, charge, and spend*.

To understand any of these calls for an understanding of a complete 'commercial transaction frame':

in which one person acquires control or possession of something from a second person, by agreement, as a result of surrendering to that person a sum of money. The needed background requires an understanding of property ownership, a money economy, implicit contract, and a great deal more. (Fillmore and Atkins 1992: 78)

For another example, consider the names for the days of the week (*Monday, Tuesday*, and so on). Fillmore sees their meanings as depending on a whole set of interconnected notions, including knowledge about the natural cycle created by the daily movement of the sun across the sky, the standard means for reckoning when one day begins and another ends, the existence of a conventionalised calendric cycle of seven days, with a subconvention for specifying the beginning member of the cycle, and the practice in our culture of assigning different portions of the week to work and to non-work (Fillmore and Atkins 1992: 77).

Scenarios

The term SCENARIO (or 'script') is best reserved for representations with a dynamic, time-based structure. Many contemporary semanticists use scenarios. For example, Lakoff and Kövecses (1987: 210–14) proposed a five-stage scenario for *anger* which opens as follows:

Stage 1, Offending Event: Wrongdoer offends S. Wrongdoer is at fault. The offending event displeases S. The intensity of the offense outweighs the intensity of the retribution (which equals zero at this point), thus creating an imbalance. The offense causes anger to come into existence.

Stage 2, Anger: Anger exists. S experiences physiological effects (heat, pressure, agitation). Anger exerts force on the Self to attempt an act of retribution.

Subsequent stages portray an attempt to control the anger, a loss of control leading to an outbreak of 'angry behaviour', and a final stage of retribution such that the intensity of the retribution balances that of the offence and the anger disappears. This formulation leaves a good deal to be desired (for example, *offending event* and *retribution* are just as complex as *anger* itself, and the use of *angry behaviour* is circular), but there does seem to be something basically correct and appealing about viewing the meaning of *anger* in terms of an ideal or prototypical scenario involving someone else doing something (seen as) bad and the consequent desire to do something bad in return.

Scenarios are used extensively in the NSM approach to emotions, Wierzbicka's earliest proposals (1972) pre-dating those of Fillmore and Lakoff by some years. A reductive paraphrase explication for *anger*, which incorporates a prototypical scenario is as follows:

X is *angry* at Z=

X feels something

sometimes a person thinks something like this:

this person did something bad to me

I don't want this

I want to do something bad to this person because of this
because of this, this person feels something bad
when X thinks about Z, X feels something like this

We will see other examples of scenarios for emotions in Chapter 4.

3.5 New phenomena: prototypes

In recent times new meaning phenomena have been recognised which contemporary semantic theory is expected to deal with. Chief among these is the prototype effect.

The prototype effect

The term PROTOTYPE EFFECT refers to the phenomenon, first studied by the cognitive psychologist Eleanor Rosch, whereby some members of a category appear to be more typical and more salient members than others. Rosch (1977, 1978) asked people to rate to what extent particular items could be regarded as 'good examples' of certain category-words such as *furniture, fruit, vehicle, bird, toy, and clothing*. People were very definite that some things were good examples of the kind of thing in question—for instance, a robin was a 'very good' example of a *bird*, a chair a very good example of *furniture*—but equally that other items were not good examples—for instance, a pelican was judged as a not very good example of a *bird*, a telephone as a not very good piece of *furniture*.

Other measures aside from direct subjective rating produced similar results. For instance, it was found that people list the high-rating members