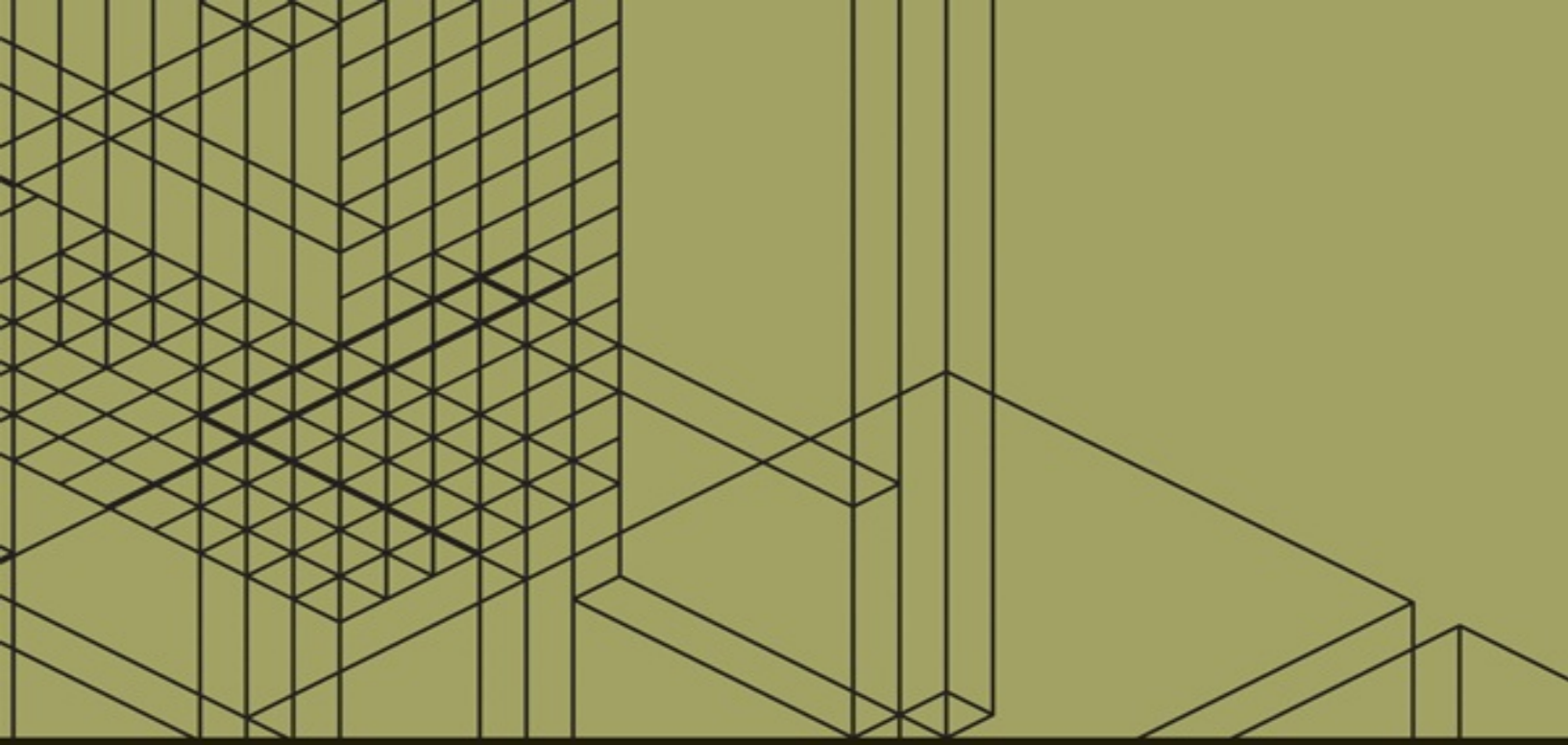


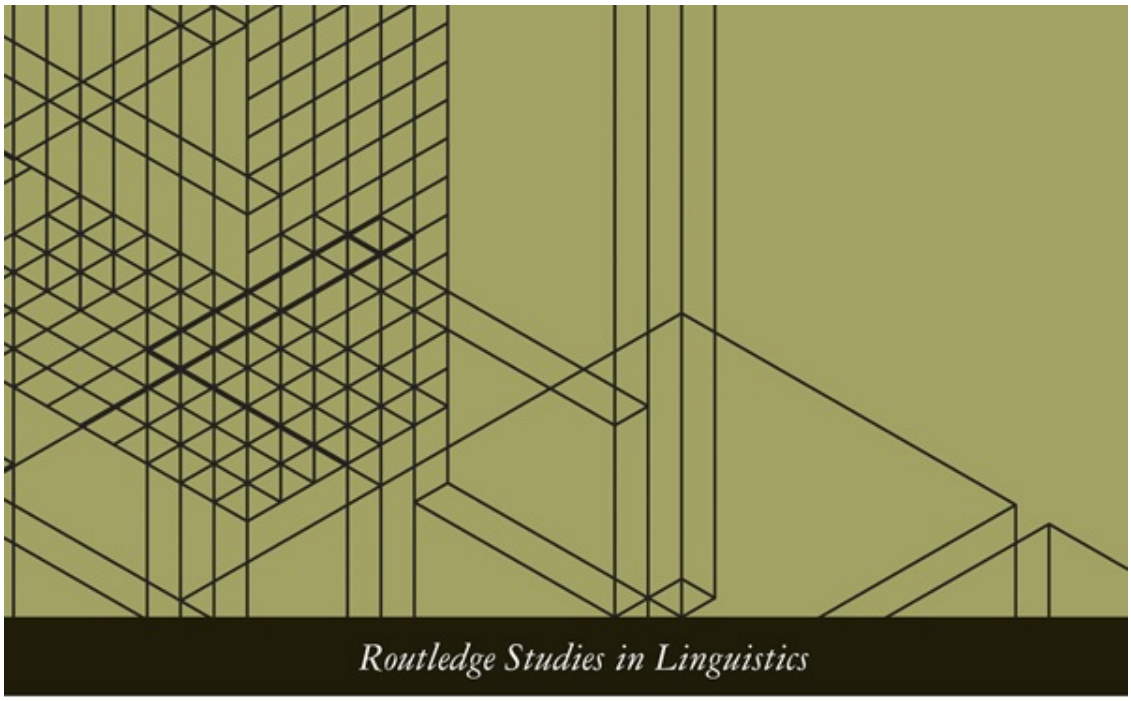
Routledge Studies in Linguistics

SIGNIFICANCE IN LANGUAGE

A THEORY OF SEMANTICS

Jim Feist

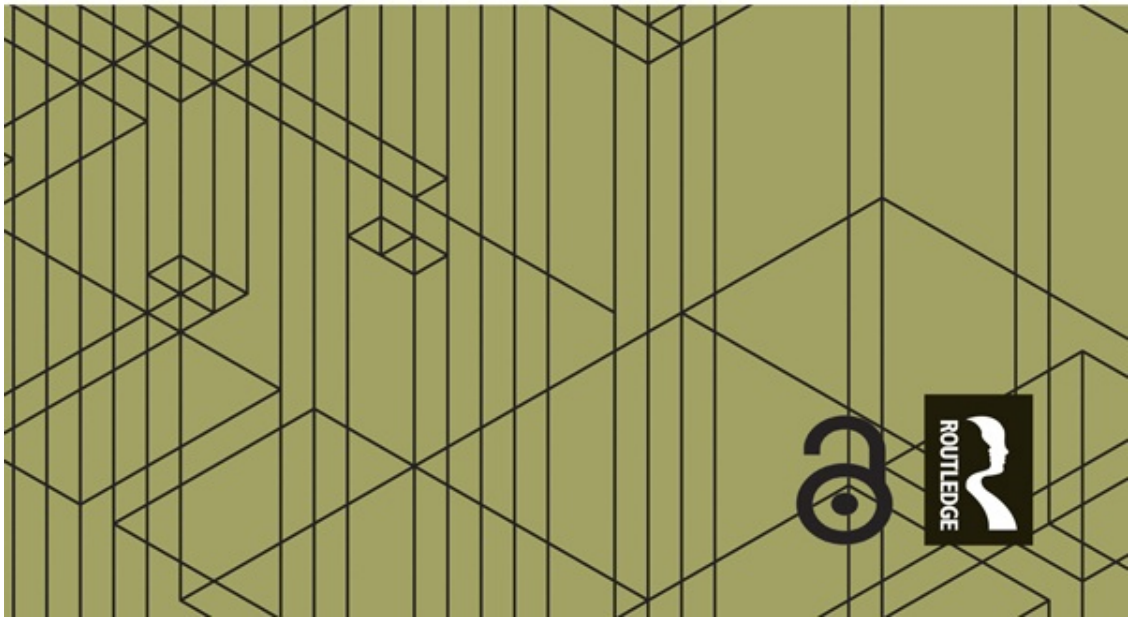




SIGNIFICANCE IN LANGUAGE

A THEORY OF SEMANTICS

Jim Feist



Significance in Language

This book offers a unique perspective on meaning in language, broadening the scope of existing understanding of meaning by introducing a comprehensive and cohesive account of meaning that draws on a wide range of linguistic approaches.

The volume seeks to build up a complete picture of what meaning is, different types of meaning, and different ways of structuring the same meaning across myriad forms and varieties of language across such domains, such as everyday speech, advertising, humour, and academic writing. Supported by data from psycholinguistic and neurolinguistic research, the book combines different approaches from scholarship in semantics, including formalist, structuralist, cognitive, functionalist, and semiotics to demonstrate the ways in which meaning is expressed in words but also in word order and intonation. The book argues for a revised conceptualisation of meaning toward presenting a new perspective on semantics and its wider study in language and linguistic research.

This book will appeal to scholars interested in meaning in language in such fields as linguistics, semantics, and semiotics.

Jim Feist is an independent researcher, previously affiliated with the University of Auckland, New Zealand, where he received his PhD in 2008. His previous publications include *Premodifiers in English* (2012) and *Semantic Structure in English* (2016).

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Significance in Language
A Theory of Semantics

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Routledge
Taylor & Francis Group
NEW YORK AND LONDON

First published 2022
by Routledge
605 Third Avenue, New York, NY 10158

and by Routledge
2 Park Square, Milton Park, Abingdon, Oxon, OX14 4RN

Routledge is an imprint of the Taylor & Francis Group, an informa business

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Library of Congress Cataloging-in-Publication Data
A catalog record for this book has been requested

ISBN: 978-1-032-19477-6 (hbk)
ISBN: 978-1-032-19478-3 (pbk)
ISBN: 978-1-003-25938-1 (ebk)

DOI: 10.4324/9781003259381

Typeset in Sabon
by Apex CoVantage, LLC

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1

Introduction

DOI: 10.4324/9781003259381-1

1 General

The main purpose of this book is to present a comprehensive theory of the semantics of language, integrating various approaches and existing understanding, and extending common understanding of "meaning" to the wider area of "significance". (For example, the expression of emotion and attitude, and the social significance of greetings, will be included.) A second purpose is to persuade readers, where necessary, to accept the semiotic and functional approaches used. Finally, the book is intended to provide stimulating insights into unfamiliar topics, and fresh insights into familiar ones.

2 Language; English and Other Languages

Language, as studied here, is natural human speech and writing, constituting a conventionalised system. (That excludes forms of "paralanguage", such as laughter and sighs.) Sign language will also not be considered.

The language considered is not limited to any variety or form, such as formal language or writing, or to any specific function or content, such as passing on

information. Consequently, it will include informal conversation, greetings, interjections, poetry, and toddlers' utterances like "Daddy home".

The theory is applied primarily to English, because that is the only language in which the writer claims expertise, and because key semantic concepts used have not yet been applied to other languages. However, cross-linguistic comparison is used where the writer has felt it possible to confirm the theory by showing semantic similarities in languages that are typologically quite different in morphosyntax, and by showing semantic differences in typologically similar languages.

3 Semantics

GENERAL

Semantics is not a "natural kind", like iron, which would make obvious what we are talking about. Nor is there any consensus as to what it is; Riemer (2016: 1) notes that it "could hardly be more protean and ambiguous". Consequently, I will begin with a characterisation of semantics, leaving definition to the end of the book. We start from the assumption that language is (among other things) a system of signs. The signs have significance, and their significance is taken here to be equivalent to meaning. ("Significance" is a key term in the book; it will be developed gradually.)

SPECIFICS

According to the Shorter Oxford English Dictionary (2002); "SOED" hereafter), semantics is either (a) "the branch of linguistics that deals with meaning", (b) "the relationship between linguistic symbols and their meanings", or (c) "the study or analysis" of those relationships. The primary concern of this book is with (b), "the relationship between linguistic symbols and their meanings". The other aspects of semantics, as in (a) and (c), are of secondary concern.

The relationship between symbols and meanings in language is wide-ranging. It provides for "meaning" to include both the fact and the emotion in remarks like, "I saw a wonderful film!", although some linguists have asserted that emotive utterances are meaningless. Also, meaning will include, for instance, the significance of farewells, which are neither fact nor feeling, but social ritual.

Being about the nature of meaning, semantics here does not study the content of meaning. Thus, it studies the difference between approximate synonyms, and even the difference between "salt", "sodium chloride", and "NaCl". It does not study the scientific knowledge that goes with the word "salt".

Just as linguistics is separate from science, it is taken to be distinct from several other studies. It is not logic, as in studying logical and illogical inferences, and in being concerned only with propositional meanings. It is not epistemology, as in whether a statement satisfies the conditions for being true. It is not metaphysics, as with whether certain words, such as nouns, represents things which are real in the world.

Further, the study of semantics is taken to be pursued for the sake of knowledge; it here excludes practical applications like making systems for processing language by computer, just as the study of biology excludes making heart pacemakers.

Within linguistics, semantics is restricted to significance that depends on language conventions alone. That excludes significance that is dependent on social or other conventions, as when a bridge player says "One club" to mean "I have an opening hand, but I haven't got a five-card major; I don't necessarily have any clubs". That uses certain speakers' conventions for the game, contract bridge, not only linguistic conventions. Semantics here also excludes "meaning" that is "reliant on mutual understanding of intentions, goals and social relationships" (Saeed 2016: 177); for example, the maxims of Grice (1975), such as "Do not say more than is needed". All those issues are excluded as part of pragmatics, which is here understood as including study of what speakers choose to say, whereas linguistics deals with how they choose to say it.[1] Semantics here also excludes – a little arbitrarily, perhaps – "dynamic semantics" e.g. Discourse Representation Theory. That studies meaning as it changes in a hearer's mind while the speaker keeps on talking, which is close to being psychology, and which entails complexity that would hinder the purpose of the book. "Semantics" also

excludes both “discourse analysis” (studying the structure of dialogue, for example), and “conversation analysis” (studying personal interaction, such as taking turns). Both of those are sociological rather than linguistic.

4 The Theory, as Explanation of the Phenomena

There is no attempt here to define what a theory should be – no theory of theory. There is, among scholars, no consensus on what a theory is or should be, even within the physical sciences; still less is there consensus on what a theory might be in semantics. The difficulty of defining it is highlighted by some past proposals that have entailed unacceptable assumptions. For example, according to Allan (2016), Katz’s proposals for what a semantic theory requires include providing a metalanguage of semantics, covering all languages, and defining the form of lexical entries; those proposals are not requirements for all semantic theory, but are parts of one specific and limited theory. Even simplicity, a very common criterion for theory, is hardly relevant here or in any human science: where the facts are complex, being faithful to the facts may well require a complex theory.

What the book offers – which may or may not turn out in future to be justifiable theoretically – is an explanation of the phenomena of meaning. (I use the term “phenomena” to highlight my commitment to examining everything that should be included as meaning, without assumptions that could bias the conclusions.) The explanation is to be based on description, covering both the basics and the subtleties of meaning, with generalisations supported by cited data. Assumptions made are to be as few as possible, and to be simple and clear; clearing away unjustified assumptions made in the past is to be given particular attention. This is supported by Van Valin and LaPolla (1997: §1.1), for example. They say that linguistic theory should describe the phenomena, explain them, and give understanding of “the cognitive basis of language”. They assert that the majority of linguists would agree – which is encouraging. However, the perennial problem of unjustified assumptions appears despite their empirical emphasis: they assert that language is based on cognition, but that is something that the theory must demonstrate.

Explanation will come from any field that offers further understanding. In particular, it will be both internal, from other areas of language or other languages, and external, from such fields as neurolinguistics and psychology.

5 The Theory, as Underlying Principles

The phenomena of life are extraordinarily diverse: animals may have two eyes, three eyes, five eyes, or none; some live without oxygen, and at temperatures above boiling point. The situation is simple and rational, however, when understood through the evolutionary principles of random variation, survival of the fittest, and adaptation to environment. The phenomena of meaning are also very varied, and can also be understood through underlying principles. A suggested list of these follows.

One principle is implicit in the way language and meaning were char-acterised earlier, namely, that language carries meaning through a system of signs: language is semiotic. We should expect a sign for every meaning, and a meaning for every sign. The signs are very variable, including concrete and obvious ones, such as words, and rise and fall of the voice; others are "invisible", being abstract, such as word order. They gain extra importance from the linearity of language, since there must be signs to signify how the hearer is to construct hierarchic structures such as those within a clause.

The semiotics of language is one system; fairly obviously, there are others, such as tense, number, and modification. We know that the systems in language commonly become more complex and consistent as time passes, and that language seems often to restore structure when a system does break down. The oddities of language stand out because of that regularity, contrasting with the background. Systematicity is an underlying principle.

The systems and the signs are not simply abstract. As language is uttered, the signs take the form of sound waves or marks on paper: a further principle is that meaning is instantiated or "embodied" – as physical, observable phenomena. In taking that form, they are processed in the mind, and therefore (we must assume) in the brain. Consequently, we must assume that a theory of semantics must be

psychologically and neurologically realistic. That is another application of the principle of instantiation.

Along with the words and syntactic structures thus formed, meaning changes. We must presume that it evolved as the human race evolved; it also develops in historical time; and it develops in all of us, as we grow up. Meanings may become more or less differentiated, and more or less complex. The principle of development underlies semantics also.

As with biological evolution, the changes are to be explained partly by apparently random variation, and partly by cause and effect; and just as biological evolution results in diversification, filling every available niche, so semantics comes to serve more and more purposes, and to serve them more effectively, through greater precision, variety, and economy, for example. There is a strong principle of expressiveness.

Biological organs and processes are functional, in that they have value for the survival and reproduction of the species. Similarly, the semiosis, the systems, the expressiveness, and so on are functional, in that they have value for individuals and society. The value may be for the speaker, the hearer, or both; an utterance may have more than one function, just as our mouths and our hands have more than one function. The principle of functionality is more profound than those listed so far.

The most fundamental of all, however, is the principle that language – and semantics with it – is a human activity. Because the activity is human, meaning may be conscious, or below consciousness; language may be rational, or emotive, or part of brute striving; it is subject to the biological and social constraints of human life. In being an activity, it is first of all something that occurs, in a place, and at a time, producing phenomena; only second is it communication of "information".

Considered as a series of assertions, that statement of principles makes many assumptions about language, and about how to study it. Accordingly, the principles are to be treated as hypotheses to be confirmed by their power to explain the generalisations and details set out in the body of the book. They will be developed gradually throughout the book. We will see applications in all areas of semantics; and sub-principles will appear, instantiating the basic principles. As noted above, they will constitute one expression of the theory to be presented,

paralleling the expression in forms more commonly used in linguistics.

Nevertheless, I consider them less weighty than their confident formulation here might suggest. I am not certain that those are all of the principles; and there may well be better ways of formulating and relating them.

6 Comprehensiveness of the Theory

The theory is intended to be comprehensive. Section 2 earlier specified that the theory should apply to all varieties of language. Similarly, all semantic structures, types, and forms should be covered, going beyond the limitations of much past work, which has often been limited to the semantics of formal language and, especially, limited to conceptual meaning.

It is intended to be comprehensive also in dealing with past semantic work. I will argue that past theoretical views can be integrated, since the varied "theories" or "approaches" are mostly complementary, emphasising one approach or one principle. Formalists, for example, have concentrated on abstract concepts allowing mathematical treatment; corpus linguists have been preoccupied with one source of data; structuralists have made a theory out of paradigms and syntagms.

To be satisfying, and for the theory to be comprehensive, the explanation should come from a wide range of approaches. That can be shown by analogy. If you see photographs of a mountain taken from different points of the compass, its shape may seem to vary a great deal, and one perspective may reveal features that are simply invisible from other perspectives. Again, seeing a front elevation, a side elevation, and the plan of a house makes its design both clearer and more complete than one perspective alone can.

The fact that language is processed in the mind suggests that a psychological approach will be rewarding. Its implementation in the brain suggests a neurological approach. Our using it for social interaction suggests a sociological approach. Explanation from the linguistic levels of syntax and phonology should also be considered, as should explanation from the contexts in which we use language.

The book gives so much attention to function that it may seem to be following a functionalist approach; moreover, it relies to an important extent on Halliday's Systemic Functional Grammar (Halliday 2004). However, I believe that the text will show that other approaches have been used, and that Halliday's work has been accepted on its merits, not adopted beforehand as a theory to be followed. I rely on Cruse (2011) similarly.

7 Outline of the Book

CONTENT

The book explains meaning as structures of units; to that extent, meaning somewhat resembles syntax as a structure of words and morphemes. The explanations constitute the theory; there is no grand, programmatic statement embodying the theory, which might be worked out deductively. Chapter 2 presents the structures. The basic ones parallel syntactic structures, with statements expressed in syntactic clauses, for example, and constituting a hierarchy – again like syntactic structures. There are also network structures, related to the hierarchies in various ways.

Chapter 3 begins the study of senses, which are the paradigmatic units of the structures discussed in Chapter 2, and which are typically the semantic substance expressed in individual words. It sets out the types of meaning that senses consist of, such as conceptual meaning and emotive meaning. The types stand alone, or combine in various ways, affecting the structures in which they occur and affecting syntactic and phonological expression. Chapter 4 sets out the dimensions of meaning, such as generality, vagueness, and intensity; just as the dimensions of height, width, and depth define a physical object, so do these dimensions define semantic "objects", i.e. senses. Chapter 4 also sets out uses of meaning, such as literal and figurative use. The types, dimensions, and uses control the overall nature of senses (and thus their combination into larger structures). Chapter 5 deals with the internal structure of senses, since senses do have internal structure, although they act as units in the large-scale structures

(e.g. sentences), just as atoms have internal structure although they are units in molecules. Chapter 6 discusses broader issues, which have been spread across the previous chapters. Chapter 7 summarises the theory; it provides some comments on semantics as the study of meaning; and it argues for acceptance of the theory, in general ways transcending the detail in the previous chapters, the detail being intended to be convincing in its own right, as explanation of the reader's own experience of language.

CONVENTIONS OF PRESENTATION

The examples used are mostly presented in the text, not formally with numbering and indentation; they seem too numerous, and often too brief, for that. Reference to the source is generally given in a footnote, to mini-mise interruptions in the text. (The examples are all attested, except for very minor instances, and except for where their being invented is shown by expressions like "That would mean …").

I have used the SOED, rather than any other dictionary, as the source of meaning definitions. As well as being recent, authoritative, and well known, it uses layout and sequencing of senses that are very helpful for analysing sense relationships and change in word meaning.

For quotations, "…" is used for the examples to be discussed, and for words quoted from previous text. Single quotation marks ('…') are used for meanings. Italic type is used to mark a word being discussed as a word in the language, not as a quoted use. SMALL CAPITALS indicate concepts as units of knowledge, which may be elements within the meaning; for example, 'large' and 'small' both include SIZE – that is, those two meanings include the concept of size. Underlining is used for emphasis – to draw the reader's attention to the word to be discussed, or to replace spoken stress on a word I am emphasising.

As the reader will be well aware, choice of terms is usually difficult in linguistics, and I have found it particularly hard, since an important motivation for writing the book has been the conviction that many important concepts in semantics now need to be modified. That requires either redefining familiar terms or using strange terms for familiar but redefined concepts. I have done

both, according to situation, and have sometimes used initial capital letters to indicate that words are intended as technical terms, often with new definitions. Some terms, such as “semantic class”, denote concepts that will not be fully explained at first use, but will be developed in stages, from different perspectives. In particular, the nature of significance in language needs most of the book for explanation, so “significance”, “meaning”, and “semantics” will be given strict definition only at the end. Some other terms, such as “noun” and “verb”, have been used because they are so familiar as to be almost indispensable, even though they are inadequate in the understanding to be expounded here.

Note

1. Semantics here does include “pragmatics” in the sense that approximates “information structure”.

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2

Semantic Structure

DOI: 10.4324/9781003259381-2

1 Introduction to Semantic Structure

This chapter sets out to identify and describe different types of semantic structure. Hierarchic structures will be discussed in section 2 – structures like those in syntax, where clauses are composed of phrases, and phrases are composed of words. Network structures are discussed in section 3, and other structures in section 4. Section 5 deals with the realisation of those structures; that will help explain them, and the realisation has a structure of its own.

Different kinds of semantic structure occur because, as noted in the general principles (Chapter 1, §5), language serves different functions (which in many cases need different structures), and because language changes readily enough to develop new structures.

It is not assumed that all languages have the structures discussed in this chapter. In particular, it seems to me that some languages do not have group structure, and I expect that some do not have a linguistic structure above that of the clause, and the linguistic structure may be only that of words in an utterance. That would entail limitation of the semantic structure, as well as limitation of the syntactic structure. If English is as complex in semantic structure as any other language, then this account should cover the range of general structures; that is, any semantic structure not accounted for here should be an instance of one given

here, e.g. a type of alignment other that accusative, ergative etc.

2 Hierarchic Semantic Structures

2.1 Introduction

In formal language (in English at least), each syntactic clause expresses ("realises") a semantic unit; the phrases within a clause realise smaller semantic units. As well as having a primary intention, such as conveying some information, speakers have secondary intentions, one of which is to guide hearers in how to relate the information to their existing knowledge. That creates another kind of structure, commonly known as "information structure", usually analysed into Topic and Comment, and so on. The information structure does not coincide with syntactic structure; Topic, for example, cannot be equated with Subject, or any other syntactic unit – it is a content-unit. Consequently, we must distinguish between the semantic structures expressed as syntactic units ("syntactic semantic units"), to be dealt with in §2.2, and semantic structures expressed only as content units ("content semantic units"), to be dealt with in §2.3.

2.2 Structure of Syntactic Units

2.2.1 Introduction

Semantic structure mirrors syntactic structure, for the basic and simple reason that syntax serves to express meaning: complementary phrases represent complementary ideas, such as actor and action; a word that is syntactically subordinate to another as its head is semantically subordinate to it as a modifier; words and phrases co-ordinated with *and* are semantically co-ordinate. (There are some exceptions to those generalisations, in marked use.) The three types of structure just described can be defined as follows. A structure with units with

equal status and the same function is “co-ordination”; if units of equal status have different functions, the structure is “complementation”, as with verb + complement in syntax. A structure with units dependent on another unit is “subordination”.

Complementation is the structure of clauses, both syntactically and semantically – the structure of the Subject, Predicator, Complement, and Adjunct; it will be studied in §2.2.2. Co-ordination occurs in both clauses and phrases; it will be studied in §2.2.3. Subordination structures phrases, with heads and dependents; it will be studied in §2.2.4.

2.2.2 Complementation

2.2.2.1 INTRODUCTION

The semantic equivalent of a clause is a “figure”, which is the meaning expressed by a single phonological contour, with its characteristic pattern of rise and fall at the end, and typically followed by a pause. In formal English, it is typically made up of “groups”, the equivalent of syntactic phrases (Halliday 2004). Figures have developed as the expression of general situations or “states of affairs”, which are differentiated to varying degrees. In “It’s raining”, there is no differentiation: the concept rain is not specified semantically as either an entity, as it would be in “Rain fell”, or as an event, as in “It rained a late November drizzle” (British National Corpus). (*Rained* has tense and time of occurrence; *raining* has no tense and time of occurrence, so is not an event.)

The structure of figures varies similarly; for example, “Tomorrow night”, in answer to “When is she getting here?”, would create a figure, just as “She’s getting here tomorrow night” would. So does “again” in the following: “In trying to hurt the Guards[,] Mr Trump could be helping them, again”,[1] meaning, by ellipsis, ‘and he has done it before’. However, in this section, I assume formal structure, as informal structure can usually be understood from it, e.g. as a reduction by ellipsis. The presentation in this section will be fairly brief, since it is set out in full by Halliday (2004), and it follows my account in Feist (2016).

The section concentrates on structure as the relationships among the units, but inevitably deals with the units themselves as well. The units will be called "semantic classes"; they are treated incidentally in the first three subsections, and treated systematically in the fourth (§2.2.2.4).

2.2.2.2 TYPES OF COMPLEMENTATION AND TYPES OF FIGURE

Formally, a figure is a "configuration of a process, participants involved in it, and any attendant circumstances", which are in complementary relationship (Halliday 2004: §5.1.1). The three types of unit noted there (process, participants, and circumstances) correlate with syntactic units and constitute semantic classes, which are named here as words with initial capitals, as follows. (1) Processes correlate with the "verb" or Predicator.[2] (2) Participants correlate with Subject, and any "objects" or Complements. (3) Circumstances, if any, correlate with adverbials, and with what some would call "indirect objects", and Adjuncts. Examples are given in Table 2.1, taken from a daily newspaper report.

Table 2.1 Units in figure

Participant	*Process*	*Participant*	*Circumstance*
The car	hit	a tree.	
He	died		on his niece's birthday.

There are several types of figure; Halliday (2004: chapter 5) lists six of them, but I will deal with only three, since Halliday's types overlap, and explicating them all adds needless complexity. Moreover, the types are not well defined; Halliday (2004: 301, in table 45) gives 11 criteria, rather than definitions. This account is for English; some differences in other languages will be discussed in §2.2.2.6.

Material-Process figures denote an action or event in the material world, expressed in the verb. The Process has an input of energy, is situated in time, and produces some change. It is conceptualised as having phases, such as a beginning, a duration, and an ending. The Participants may be an Actor and an Undergoer, the relationship being that of transitivity, with the Undergoer affected by the

change; but there may be only an Actor. The conceptualisation is based on physical events, but is often applied loosely, by metaphorical extension to abstract events.

A note on the terms: Participants, Processes, and Circumstances are denoted by whole groups; the terms apply in figures. Individual word senses are different, in a way to be explained more fully later. The nominal senses heading Participant groups are "Entities"; the "verb" senses heading Process groups, apart from copulas, are "Events"; the corresponding Circumstance heads are typically "Properties". (Those three types of sense are realisations in syntax of lower-level entities, events, and properties – a distinction that is also to be explained more fully later.)

Mental-Process figures denote processes in the inner world of cognition, perception and emotion. They are conceptualised as happenings, without input of energy, and without phases. Examples include 'want', 'know', 'worry', 'remember', and 'regret'. The Participants are a Senser and a Phenomenon. The relationship is like that of transitivity, in that there is a sense of "going over", but the second Participant is produced rather than affected; the direction of the Event can usually be reversed, as with 'she liked the gift' and 'the gift pleased her'. The Process typically allows a propositional noun clause as the Phenomenon, whereas material-Process figures do not: "Bill thinks [mental Process] that he is right", but not "Bill jumps [material Process] that he …"). The Phenomenon may denote the same reality as the Process, as in "They sang a hymn", and "Police allege Smith is the murderer".

Relational-Process figures denote abstractions – abstracted from either the outer or the inner world; the Process is a relation, rather than a happening or action. There are three subtypes: (1) intensive relations with a Carrier and an Attribute as Participants ("It is heavy", "Joan is the woman in the middle"); (2) possessive relations, with a Possessor and a Possessed; and (3) circumstantial relations, with a Carrier and an Attribute ("This story is about a lost baby"). As the examples show, the Process word is often a copula, but may be a verb such as *possess, weigh*, or *represent* – denoting relations, not happenings; as noted previously, the Process sense is not an Event.

The types of Process are distinct in the semantic nature of their constituents, and their relationships. More important, they provide alternatives for expression,

since a happening can often be construed in different Processes.[3] For example, 'He exceeded his work quota' is a material Process, and is transitive; "His output exceeded his quota" has a relational Process, and it is not semantically transitive, although it is so syntactically. Halliday (2004: §5.1.2) gives "My head is hurting me" as a material Process, "I feel a pain in the head" as a mental Process, and "My head is painful" as a relational Process. Those clear semantic distinctions also correlate to some extent with morphosyntactic distinctions, such as whether the figure maybe expressed in passive form, what present tense forms are allowable, and whether the pro-verb *do* can be used for questions and ellipsis. (See Halliday 2004: §5.7.4, Table 5 (45).)

However, those distinctions are not consistent or rigorous, so we should conclude that the Process types have been only partly grammaticised, and are not (yet) fully distinct as linguistic categories. (Grammaticisation is the Process of making an item part of the grammatical structure of language; it contrasts with lexicalisation and semanticisation, which will be explained later.) For further detail on Process types and other aspects of figures, see Halliday (2004: chapter 5).

The types of Participant given in the discussion of Process types earlier are what have often been called "semantic roles", as will be clear from the terms Actor and Undergoer. Some of the familiar semantic roles have been omitted, such as Patient and Beneficiary. That is because they are based on content distinctions, not grammatical ones, there being no forms correlated with them in the grammatical system. (One might say that Beneficiary is distinguished by the use of *for*, but that changes the syntax and the information structure, not the role.)[4]

A conjunction is syntactically part of the following clause, since it is dependent for its presence on the rest of the clause. However, it is semantically not part of the figure, since it denotes a relationship that is independent of both of the figures it links, and of which the two figures are terms; it is bonded to them both, equally, by that grammatical relation.

This analysis of figures, and the implied analysis of clauses, does not follow the common assumption that structure is binary, as in Subject + Predicate. The analysis here shows that the semantic structure varies with the utterance, having two or three or more units. Syntax is generally aligned with semantics, since it generally serves to symbolise or "represent" semantics. (Even presentative clauses

such as “There | is | a man at the door” fit that generalisation, since *there* has significance in information structure.) We should therefore take syntax to be binary only where there is clear evidence for that.

Garcia and Ibáñez support the main distinctions here neurolinguistically, showing that there are neurological differences between Processes and Participants (Garcia and Ibáñez 2016: §4.1), and between material Processes and others (Garcia and Ibáñez 2016: §4.2).

2.2.2.3 FURTHER EXPLANATION OF COMPLEMENTATION

Complementation calls for further explanation. How do hearers know that the units are complementary, when there is no conjunction or preposition to indicate it? Why are the units generally in fixed order? (Discussion, here and later, will be divided into “syntagmatic structure”, which is the relationship between the semantic units, and “internal structure”, which is the semantic structure internal to each unit that makes the syntagmatic structure possible.)

Syntagmatic Structure in Complementation In part, the explanation of complementation is extremely simple: we know before we hear any utterance that (in English) words in a group will be related by subordination, and that groups in a figure will be related by complementation. Further, signalling that structure is one of the functions of syntax. In a basic material-Process figure, the first nominal group represents the Actor; a nominal group immediately after the Process group will represent the Undergoer. The set order of groups in a clause signals those relationships.

Internal Structure: Bonds “The CEO” can be syntactic Subject for “has decided to cancel the new share issue”, but not for “equals 12 + 4”; the reverse is true for “16”. The reason lies in the internal structure of the nominals, and of the Process.

‘Decided’, as a purposeful Event, implies an agentive Actor; ‘equals’ applies only to quantitative abstractions. ‘The CEO’ includes the element ‘agency’ (in denoting a human referent), so it can relate to the purposefulness in ‘decided’; ‘16’ is abstract and quantitative, so it can relate to the relationship, ‘equals’. That semantic link between figure constituents will be called their “bond”, by analogy with chemical bonding, where a shared electron provides the bond between

atoms in a molecule. (This is much the same concept as "valence" and "valency" used by some authors; "bond" is preferred because it highlights the specific meaning elements on which the relationship is based.) For 'the CEO', the bond is its agency; for '16', the bond is being quantitative; for the material Process 'has decided', it is the group's inherent transitivity; for the relational Process 'equals', it is the group's inherent relationality.

The concept of bond is a powerful explanatory one. Consider, for example, the puzzle of different "constructions" considered by Pylkkänen and McElree (2006): "The stylist combed the hair straight" ("resultative construction"), "The stylist combed the hair wet" ("depictive construction"), and "The stylist considered the hair straight" ("small clause construction"). The clauses are the same syntactically; the differences are semantic, but not obvious. The third is distinct in being a mental-Process figure. The first two differ in their bonds: 'combed the hair straight' uses the transitivity of 'to comb'; transitivity implies a result, which is specified by the Circumstance 'straight'. 'Combed the hair wet' uses the time property implicit in the material Process 'comb', and the stative nature of 'wet' – the hearer construes it as "combed the hair while it was in the state of being wet". The hearer understands the meaning from the standard structures of figure types and the word sense, which create the bonding; there is no need to conjecture special "constructions".

Note, as a semi-digression, that the transitive relation includes such Circumstances as the one just illustrated – "combed the hair straight". That is acknowledged in standard grammar, when such units are identified as Complements; but adjectives do not represent Participants, so do not seem to be part of transitive structures. "They shot him dead" clearly has a transitive Complement; "He set the meeting for Tuesday" is less clearly transitive. Even in "He set the meeting on Tuesday", the Circumstance, "on Tuesday", should also be rated as included in the transitive relation; there is no "transition" or "carrying over" of affectedness, but 'on Tuesday' carries over the time element in 'set'. In grammar, "transitivity" is a metaphorical term.

Types of Bond in Complementation The type of bond varies with the type of Process, and with the unit being bonded. Material-Process figures and mental-Process figures have Participant and Process bonded by transitivity. In "He fought

the fire for twelve hours", the agency entailed in *fought* makes a strong bond: see Diagram 2.1.

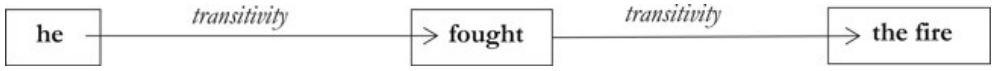


Diagram 2.1 Bonding in a material-Process figure

That bonding can be explained more precisely as follows. The Subject of a transitive figure is conceptualised as an Actor (that is the Subject's "thematic role" or "semantic role"); the Predicator is conceptualised as the corresponding action, which will affect something else; and the Complement is conceptualised as the thing affected. Accordingly, we can represent the bonding more precisely in Diagram 2.2.

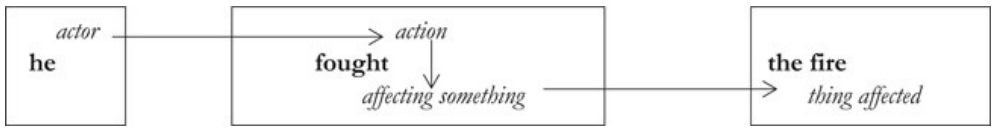


Diagram 2.2 Bonding in a material-Process figure, in detail

In "The cable struck the tail rotor", there is no intentionality, although the figure is transitive; so the bond is weaker. In the mental-Process figure, "They admired him greatly", the bond is still that of transitivity, but it is weaker still.

In relational-Process figures, the bond accords with the type of relation (see earlier in this section). In "He has very good reason to keep in shape", the bond is possession, identified in the Process word "has". Sometimes, the bond is identified elsewhere – as in a possessive inflection – and the Process word is a semantically empty copula; for example, "The new Ferrari is Peter's"; compare, "Peter has a new Ferrari". The bonding in "He has very good reason …" is shown in Diagram 2.3. (Since "has" is a grammatical word signifying the relation between the content items, it is excluded from the content boxes.)

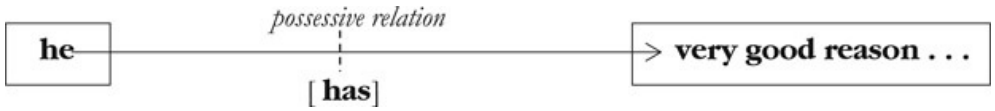


Diagram 2.3 Bonding in a relational-Process figure

The bonding of Circumstances to the rest of the figure varies, but typically the Circumstance specifies the TIME OR PLACE or cause and so on of the Event that constitutes the Process. Process and Circumstance are therefore bonded by the concept of time or place, etc. That bond may be explicit, in a preposition (e.g. "He fought the fire for twelve hours"), or merely implicit, in the Circumstance itself (e.g. "He fought the fire later").

The nature of transitivity will be expanded in several later sections of the book, and the basis of bonding in the internal structure of senses will be expanded in Chapter 5, §3.

2.2.2.4 SEMANTIC CLASSES

This section brings together, and expands, points made in the previous three subsections.

Process In "The car hit a tree", "hit" links the two Participants (the car and the tree), making a "complete thought", in traditional grammatical understanding, and a "proposition", in logical understanding. Being finite (with past tense, not participial "hitting"), it signals to the hearer that something is being asserted and is not merely a proposition or possibility. That amounts to signalling that the hearer should do something about the utterance – accept it as fact, in this case; in other cases, such as "Did the car hit the tree?", the hearer is "told" that he should reply. Being finite makes "hit" a Predicator syntactically, by making it semantically a Process, which is its semantic class. (Semantic class is a central concept in the theory being presented; it will be developed in stages in later sections.)

Being a Process is thus different from being a "verb". Relational Processes like copulas and *owns, has*, and *exceeds* (in many uses) do not denote Events or actions. Their tense, number, and person inflections are secondary to their prime function of constructing a figure, as an utterance. Similarly, the central importance given to verbs in many grammars, of establishing argument structure, is not significant here, since argument structure is not a semantic issue (or a syntactic one), but a cognitive one, coming from our conceptual knowledge, not linguistic knowledge. (The issue will be discussed later, but it should be noted

here that cognition in this book is our knowledge of the world; it does not include such other mental faculties as imagination and emotion.) In particular utterances, it is the speaker who assigns primacy to one part of the figure (chiefly through information structure), not logic.

Participant Participant here is also a semantic class, complementary to Process. It is realised by a nominal (typically a noun phrase, a pronoun, or a noun clause); e.g. "another big change", "he", and "what I mean". However, it is more than a bare nominal, being a nominal in its role in a figure; that is, it has a relationship to a Process and perhaps to another Participant and a Circumstance; it is the semantic unit correlated to the Subject or Complement of a clause. "Seeing is believing" has two Participants that are not things. ("Nominal" here means "related to Participants/Entities", not "related to nouns").[5] The subclasses of Participant were given earlier, but to summarise: in a material-Process figure, they are Actor and optional Undergoer; in a mental-Process figure, Sensor and Phenomenon; in a relational-Process figure, Carrier and Attribute, or Possessor and Possessed.

Circumstance Circumstance is the third and last of the semantic classes at the figure level; it correlates approximately with syntactic "Adjunct" and "adverbial". The explanation was given in the definition of figure earlier: "configuration of a process, participants involved in it, and any attendant circumstances", with "circumstances" as an everyday word; it covers groups denoting time, place, and so on. Its definition, however, lies in its relation to Participant and Process, not in its content. As noted previously, the time or place element constitutes its bond in a typical material-Process figure, where the process consists of a physical Event. Obviously, Circumstances are usually optional, whereas Participant and Process are not. (They are required sometimes as syntactic Complements in relational figures, as in "The meeting will be on Wednesday".)

Its precise relation to the Participants and the Process varies and will be developed in later sections. For the moment, we may simply note the structural ambiguity of statements like the following, cited from Hintikka and Sandu (1991: 12): "This street is so dangerous that someone is hit there every month". The Circumstance ("every month") must be related to the whole of "someone is hit there" (Subject, Predicator, and Circumstance), not to "is hit there" alone.

Conclusion Those three semantic classes exist at the figure level; at group level, the semantic structure is different. For example, "another big change in his life" makes a single nominal syntactically as a clause unit, and a single Participant semantically. However, "change" and "life" are both nominals at the phrase level; they have different properties from the phrases as units and constitute a different semantic class – Entity, not Participant. The differences will be set out systematically in Chapter 5, §3, after the discussion of the nature of word senses.

2.2.2.5 SIGNALLING SEMANTIC STATUS

Sometimes, semantic status is signalled explicitly and clearly by a grammatical word, just as syntactic status often is, but complementary status is not. (In "on Wednesday" earlier, the preposition is a signal, but a weak, ambiguous one.) The signals or "markers" of semantic-group status include the following:

- being a syntactic group, since in English only syntactic groups have complementary relations;
- the content – denoting something of the type that can be a Participant, or that can be a Process, in its context;
- syntactic order: (a) being initial suggests that the group will be a Participant (being nominal will confirm that); (b) coming after a Process suggests that the group is a second Participant; (c) coming after a second Participant suggests strongly that the group is a Circumstance (and beginning with a preposition will confirm that).

In English, then, the marking of semantic structure in figures is rather weak, being subordinate to the marking of syntax with its requirements for Subject–Predicator structure, for example, and the flexibility of Adjunct position.

2.2.2.6 DISCUSSION: COMPLEMENTATION

Ambiguity Complementation can create structural ambiguity, as in "North Korea

marked the anniversary of its army's creation on Wednesday, with its biggest ever artillery exercise".[6] 'On Wednesday' is a Circumstance – 'North Korea marked the anniversary on Wednesday', but can be read as subordinate to 'creation' as a postmodifier ('The army was created on Wednesday'). Leech (1969: §12.1) makes a useful distinction between polysemy and homonymy as subtypes of structural or "grammatical" ambiguity. He illustrates grammatical polysemy with, "The centre forward, Smith, kicks hard"; the present tense of "kicks" has two senses: 'momentary action in the present', and 'habitually repeated action'. He illustrates grammatical homonymy with "I like moving gates"; where the *–ing* + noun construction can represent modifier + head, or finite verb + Object. The Korean army instance just given, however, is not quite either subtype, being a result of error; the two senses are the intended meaning (speaker aspect) and the actual linguistic meaning (hearer aspect). *Ambiguity* itself is perhaps too ambiguous to allow for profitable argument about how to classify its forms. (Note in passing that a whole sentence can have a single sense – composed of several smaller senses – just as a word has a single sense, composed of several concepts.)

Cross-Linguistic View In languages other than English, the signals are sometimes much stricter, through morphological forms such as case and verb agreement. Other languages also contrast in transitivity. In languages such as English, it has been grammaticised as the basic semantic and syntactic relationship – in material-Process figures; other figures are felt to be weakly transitive, rather than different in kind, with the infrequent copula figures understood as marked uses.

Ergative languages not only have a different morphosyntactic pattern, but express in their clause structure a different construal of the way the world works.[7] That will be discussed in a later chapter, since traces of the ergative construal appear in English but have not been grammaticised into linguistic structure. Some scholars now take the transitive/ergative issue more widely, as "alignment"; they identify construing the situation as stative or active as alignment, also; see the various works in Donohue and Wichmann (2008), for example. Details vary, then, but the alignments just listed are all patterns of Participants and a Process; and it seems (from Donohue and Wichmann 2008) that other alignments are also. It seems very widespread indeed, in various parts of the world, and in languages of different morphosyntactic types, that the basis

of articulated semantics is "a configuration of a process, [and] participants involved in it", which is the core of our definition of figure in English.

The chapters in Caffarel and others (2004) show that figure structure and process types are much like those of English in a wide typological range of languages: French (Caffarel and others 2004); Japanese (Teruya 2004); Tagalog, a Western Austronesian language (Martin 2004); Chinese, and a group of Sinitic languages (Halliday and McDonald 2004); Vietnamese, and various Austro-Asiatic languages (Thai 2004); Telugu, a Dravidian language (Prakasam 2004); and Pitjantjatjara, a Pama-Nyungan of Western Australia (Rose 2004). They differ, however, in such ways as which process types are "dominant" or "primary", and as noted previously (§2.2.2.2, footnote), Japanese can use nominal and adjectival groups as Predicators.

Construal Construal, as in the remodelling of a Process into a different type (noted earlier), will be important in the book. Meaning is not a mirror of the world, or an image of knowledge, but a product of the mental process of construal; it is shaped according to the situation or the speaker's purpose – language is a human activity, and it is functional. In these structures and in others, the function is often to focus the information appropriately, and sometimes to make the information conform to a cultural concept (compare Croft 2007: §2.2). As with the semantic classes, a semantic unit may be reconstrued after its initial construal.

Support Research reported by Pulvermüller (2010: §7) shows that the Participant–Process structure has a basis in the brain. There are bundles of neurons ("sequence detectors") that identify (for example) sequences of "nouns denoting human subjects and verbs referring to specifically human actions", and "nouns referring to flying objects and verbs related to flying".

2.2.2.7 CONCLUSION: COMPLEMENTATION

Complementation is one fundamental semantic structure; it characterises figures. The semantic structure is created by a syntactic structure, with signals set by the principle of instantiation; i.e. (in this instance) clauses as syntactic units instantiate figures as semantic units. The syntactic order is not merely a

necessary consequence of words having to be uttered in sequence; by the principle of expressivity, it has been exploited for semantic significance. The complementary units that make up the structure are linked by bonds, with elements within the units exploited for that bonding function.

2.2.3 Co-ordination

INTRODUCTION

As already noted, semantic co-ordination is a structure with meaning units of equal status and having the same function, just as syntactic coordination is the linking of units to give them the same syntactic function.

As noted in §2.2.1, complementation operates in figure structure, and subordination operates in sentence structure and group structure, but co-ordination occurs at any level. We find co-ordinated figures, e.g. "I came, I saw, I conquered", all with the same function, as main clauses; co-ordinated groups, e.g. "Both the boy and the old man went", with the same function as heads of a compound Participant; and co-ordinated words, e.g. "a hazy, out-of-focus, three-dimensional image", with the same function of modification.

RELATIONSHIP BETWEEN SEMANTIC STRUCTURE AND SYNTACTIC STRUCTURE

In co-ordination, syntactic and semantic structures are quite different. The spoken and written order is linear. But in syntax, the co-ordinated units are in the same structural slot (which is what "co-ordinated" means), so are parallel, because the modifiers modify the head directly (in parallel), as shown in the bracketing of the phrase, "[a [hazy,] [out-of-focus,] [three-dimensional] image]". In semantics, however, the comma after *hazy* (like the phonological pause) signals to readers that they must mentallydouble back to put "out-of-focus" in the same slot as "hazy", and again for "three-dimensional".[8] The structures are illustrated in Diagram 2.4: in part (a), the modifiers form parallel "lines" in the syntax,

ordaining a parallel "flow"; in part (b), they ordain in the semantics a doubling-back flow.

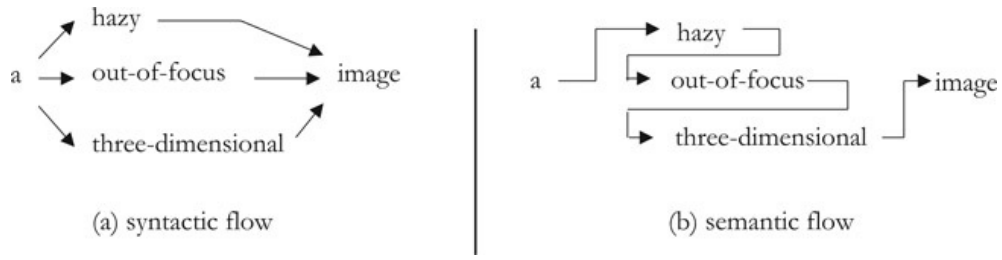


Diagram 2.4 Syntactic and semantic flow through co-ordinated premodifiers

In a phrase like "a shabby black city suit",[9] however, the modifiers are not co-ordinated, and the structure is "[a [shabby [black [city suit]]]]"; so the semantic flow is linear: "a → shabby → black → city suit".

INTERNAL STRUCTURE, SYNTAGMATIC STRUCTURE, AND SEMANTIC CLASS

The co-ordinated units, having the same function, have the same internal structure, just as in syntax they must all be clauses or nominal groups or adjectives. Semantically, they must be of the same semantic class, as with Participants and Processes earlier, and as explained further in the following.

In "Jack and Jill went up the hill", for example, the co-ordinated names function independently as Participants for the Process 'went'; they have no direct semantic relation with each other, so have no semantic bonding element, as coordinates. (The direct bond between them is syntactic; their semantic bond is to "went", in the figure's complementation structure.) The same point applies to co-ordinated figures and co-ordinated word senses.

SIGNALLING

The obvious way to represent co-ordination is to use conjunctions such as *or* and *but*. For co-ordinated modifiers (e.g. "red, white, and blue") and apposition (e.g.

"She visited the grave of her mother, Lilika"), the written comma and the spoken pause signal the co-ordination.

DISCUSSION

Co-ordination occurs very widely in the world's languages – in creole, African, Caucasian, Indo-European, Tibeto-Burman, Oceanic, and North American languages (Haspelmath 2004).

2.2.4 Subordination

2.2.4.1 INTRODUCTION

As noted in passing earlier, subordination operates in sentence structure and group structure, whereas complementation operates in figure structure – an arrangement that is itself complementary.

Combining words syntactically builds a phrase, in parallel with the words' senses building a group. Combining phrases makes a clause, and combining groups makes a figure. In each case, the structure of the combined group is different in kind from the structure of its elements; for example, being a Participant + Process + Participant complementation structure, a transitive figure is quite different structurally from Participant groups and Process groups, which are structured by dependence.

A combination of figures does not usually make a new kind of structural relation, as a combination of words or groups does. (For example, combining groups creates a complementation structure, different from the subordination structure of each group.) Accordingly, combinations of figures are just that – "figure complexes" – not a different kind of structure, as a sentence is different from a clause (See Halliday 2004: §7.1). In speech, however, combining figures sometimes does make a new structure, a "paratone", equivalent to a paragraph (to be discussed as content-unit structure, in §2.3).

In syntax, subordination is the dependence of a word on its head for its

position in the phrase, or dependence of a clause on the main clause in a clause complex. In semantics, subordination is the use of a sense to adjust another sense.

2.2.4.2 SUBORDINATION OF FIGURES, IN A SENTENCE

There is little that needs to be said here on subordination in sentences, since it is well understood in traditional grammar through main and dependent clauses, and incurs little disagreement.

The semantic bond of adverbial clauses is like the bond of Circumstance to Process, in §2.2.2. Its nature is suggested by the traditional classification of adverbials. In "He had been helping to unpack his brother's car, when he saw his niece crying", the "when …" figure links to, or depends on, the time element implicit in "saw". Being a material Process, 'saw' has time, place, and manner as "attributes"; "helping to unpack" specifies the value (precise nature) of the time attribute. (The attribute-value analysis is from Barsalou 1992). The subordination is signalled by the conjunction ("when"), in combination with juxtaposition to the main clause.

That bonding is illustrated in Diagram 2.5. 'When' aids the bonding, because it carries the conceptual element time (although it is a grammatical word).

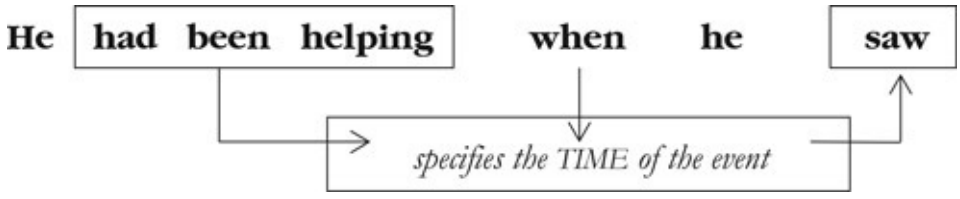


Diagram 2.5 Bonding by value–attribute relation, in an adverbial clause

Adjectival clauses are bonded to the main clause differently. In "For those of us who knew him, he was honest", "who" and its antecedent "us" denote the same people, so the two expressions share a Participant. That is illustrated in Diagram 2.6. (The same applies to "who knew him, he was", of course.)

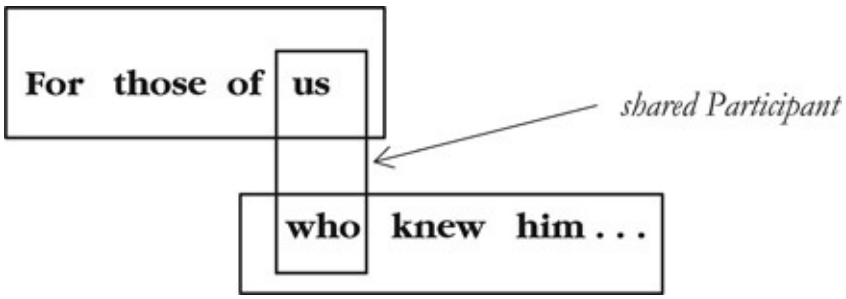


Diagram 2.6 Bonding by shared Participant, in an adjectival clause

2.2.4.3 SUBORDINATION OF SENSES, IN A GROUP

A. Participant Groups

INTRODUCTION Participant groups in English are particularly complex, entailing semantic principles that are not illustrated elsewhere in English; and I believe that they illustrate all the forms of semantic subordination used in all groups in English, and in groups in other languages, so they will be given considerable space here. We need to explain why their word order is in principle fixed, explain why the order can nevertheless be varied in some circumstances, and explain the use of conjunctions (*and, or*), which is mostly prohibited but sometimes required. For more detail on all this section, see Feist (2016).

Readers will be aware that Participant groups have structural positions for determiners, which may or may not be filled in a particular utterance, just as clauses have positions for Subject, Direct Object, Indirect Object, and Adjunct, even if not all are filled. Similarly, Participant groups have structural positions for different kinds of premodifier. Table 2.2 gives attested examples.[10]

Table 2.2 Positions in Participant groups

Determiners	*Premodifiers*			*Head*
a	*shabby*	*black*	*city*	*suit*
a	*lissome*	*young*	*TVNZ*	*reporter*
the	*beautiful*	*sunny*	*winter*	*weather*

	smooth	*panning*	*camera*	*movements*

It is fairly clear intuitively that the words in each column are semantically alike in some way, and belong in the position shown even if the other positions in the group are not filled, as in Table 2.3, which gives the same phrases as in Table 2.2, but with some words omitted.

Table 2.3 Unfilled positions in Participant groups

Determiners	*Premodifiers*			*Head*
a	*shabby*	*black*		*suit*
a		*young*	*TVNZ*	*reporter*
the	*beautiful*		*winter*	*weather*
			camera	*movements*

Those positions are unique to Participant groups and will be called "zones" (from Quirk and others 1985: §17.94 ff.). I emphasise these structural positions, because almost all of the voluminous research on premodifiers since 1985 has ignored the zone structure that Quirk and others demonstrated.

ZONES: DETERMINERS English Participant groups consist of semantic and syntactic zones. First comes a zone of determiners, e.g. "all those three grammar books". It is divided into subzones of "predeterminers" (e.g. *all*), "central determiners" (e.g. *those* and *the*), and "postdeterminers" (e.g. *three, second*); see Quirk and others (1985). They are subordinate to the head, serving to limit or "determine" its reference, by strict quantification (predeterminers), by deixis (central determiners), and quantification in a looser sense (postdeterminer numerals). Note that although being a determiner is usually thought to be a syntactic matter, it is in fact a semantic one, since determination is a semantic process; similarly, the subzones are semantic, although having a syntactic order.

ZONES: PREMODIFIERS

PREMODIFIER SUBZONES

After the determiners comes a zone of premodification (Quirk and others 1985), with four subzones, to be named as in Feist (2016) and illustrated in "A mere 250,000 live television audience".[11]

- The first zone, that of "Reinforcers" – not illustrated in Tables 2.2 and 2.3 – has grammatical words (*mere, sheer, utter, total*, and so on), that have the semantic function of intensifying or reinforcing (e.g. "sheer desperate necessity", "a complete bloody fool"). Note that they are meaningful, although they do not add any content that we would usually called a "meaning". Just as *very* strengthens or emphasises the word it modifies, Reinforcers strengthen a quality element that is named in the head, as in "complete folly", or that characterises the head's referent, as in "a complete fool". That relationship constitutes their bond to the head.
- The next zone consists of "Epithets", for example *shabby, lissome, beautiful*, and *smooth* in Table 2.2. They denote gradable qualities and often express the speaker's feeling, as with *shabby* and *lissome*. The quality or feeling bonds to the head being modified, as the value of one of its attributes. For example, *shabby* specifies the appearance attribute of the head; *smooth* specifies the value of the head's surface-quality attribute. That is a cognitive explanation, however; linguistically, Epithets bond to attributes of the head that are gradable (inherently, or as conceptualised by the speaker).[12] Being semantically gradable, they take the morphological inflections, *more*/*most* or – *es*/–*est*.
- In the next zone, "Descriptors" (as in "a mere 250,000 live television audience", "an old retired philosophy teacher") are like Epithets but are not gradable (inherently, or as conceptualised by the speaker); for example, *black, young, sunny*, and *panning*, in Table 2.2. They bond to non-gradable attributes of the head.
- Closest to the head, "Classifiers", such as *city, winter*, and *camera*, are nominals,[13] with a quite different relation to the head from the adjectival relations of the other zones. This zone has subzones, with the order usually set by qualia (semantic relations specific to this zone), which

constitute their bond to the head. Example: "a Jayline Classic [Origin quale] 17 kw [Size quale] black enamel [Constituency quale] clean air [Type quale] wood [Use or Function quale] fire".[14] (See Table 2.4 for that phrase, and Table 2.5 for a range of other examples.) Sometimes, the order is set differently, by an implicit Participant–Process relationship, as in "UK EU exit",[15] which is semantically equivalent to the figure, "the UK exits the EU". That analysis is supported psycholinguistically (Murphy 1990: 282) by processing-time data. (There are other Classifier constructions, and Classifiers are often used without any construction – a frequent cause of ambiguity; see Feist 2012: §5, for a full treatment.)

Table 2.4 Quale relations between Classifier and head

	Classifier	*Relation*	*Head*
1	*Jayline Classic*	IS the source or origin of	*fire*
2	*17kw*	IS the size of	
3	*black enamel*	IS the material of	
4	*clean air*	IS the type of	
5	*wood*	IS the function of	

Table 2.5 Examples of the qualia

Modifier: Origin quale	*Modifier: Dimension quale*	*Modifier: Constituency quale*	*Modifier: Type quale*	*Modifier: Function quale*	*Head: Participant*
Kingston	*3-piece*		*recliner*	*lounge*	*suite*
Fisher & Paykel	*7.5 kg*		*excellence*	*washing*	*machine*
Elite	*110 cm*	*stainless*	*double oven*		*range*
Smeg	*690 L*	*stainless*	*automatic*		*dish washer*
	254 mm		*electric*	*mitre*	*saw*
Roman			*winter*	*fertility*	*festival*

Iranian	*16th century*	*brass*	*boat shaped*	*vessel*

PREMODIFIER ORDER

The order of premodifiers in different zones is fixed: we cannot say "a television live 250,000 mere audience", for example. The order is controlled by each modifier's type of sense and its function. In "the splendid silver plastic suitcase",[16] for example, the nominal sense 'plastic' is closest to the head, because it helps to identify the referent by classification. 'Silver' comes next, because, as a concrete descriptive sense, it describes both the plastic and the suitcase. 'Splendid' precedes them all, because, as a more abstract and gradable descriptive sense, it gives a subjective judgement on the rest of the group; and because it is related to each of the other modifiers, since the suitcase is splendid in being silver, and in spite of being made of plastic. That explains the scope of premodifiers, usually treated as a syntactic matter and illustrated by bracketing or tree diagrams.

The order is functional in another way: it constitutes a series of signs as to how the modifier is to be understood. Words can be repeated, invoking different senses, as in "high high heels" where the first occurrence of *high* must be interpreted descriptively as an Epithet ('with a good deal of height'), and the second must be interpreted as a Classifier defining the type of heel. Similarly, we can have "a moving [Epithet] new English book", "powerful moving [Descriptor] magnetic fields", and "a beat-up white moving [Classifier] van" (Feist 2012: 62).

There is still more complexity here – in the order. Although the order is fixed in general, variation is allowed in two ways. First: because the nature of a zone is the type of meaning it takes, words of the same type occur in the same zone, and there may be several of them, as in "a [determiner] hazy, out-of-focus, three-dimensional [three Epithets] black and white [two Descriptors] TV [Classifier] image".[17] See table (2.6).

Table 2.6 Several words in one zone

Epithets	*Descriptors*	*Classifiers*	*Head*

A	*hazy, out-of-focus, three-dimensional*	*black and white*	TV	*image*

Words in the same zone may grammatically be varied in order ("outof-focus, hazy" or "hazy, out-of-focus", and so on): their order is free, syntactically. (As noted above, modifiers in the same zone are related to each other by co-ordination; subordination relates them to the head.)

Second: in "These were celebrated, American breasts, engineered by silicon to be as broad and bountiful as the prairie",[18] *American* must be understood as an Epithet, because it is co-ordinated to the Epithet "celebrated"; it must therefore be interpreted with an abstract and approving sense, to be constructed from "engineered", "broad", and "bountiful" in the context. The change in position signals a change in meaning. That breach of the rules of order is a marked use: it relies on the remarkable rule of English semantics that you can break the rules, giving a special force to the expression.

STRUCTURE OF PREMODIFICATION

The subordinating semantic structure of premodification commonly follows the syntactic structure, in contrast with the co-ordination of premodifiers, discussed earlier in §2.3.3. Thus, in the invented sentence, "The new president and the old president appeared together", the structure of the first phrase is "the [new president]", both syntactically and semantically; and the structure of "a new international economic order" is normally "a [new [international [economic order]]]", in both respects. In this structure, a modifier modifies the remainder of the group, not the head alone.

The semantics of sub-modifying adverbs similarly follows syntax, as in "a [[totally new] [international [economic order]]]". Sub-modifiers may also be adjectives or nouns, and the structure may be very complex: "[[Apollo [[block II]] [fuel system]] [storage capacity]]". (For that example, and further discussion, see Feist 2012, §5.6.3 in particular.)

However, the structure is quite different when the modifiers are used descriptively; that will be explained when the nature of descriptive use is set out,

in Chapter 4. There is also a somewhat idiomatic variation to be set out later, in §3.3.

DISCUSSION OF PREMODIFIERS

The zone structure is an important cause of ambiguity. For example, a news item reported that a noted politician was "struggling to shake a brewing scandal".[19] "Brewing" was intended as a Descriptor, meaning 'increasing', but it is naturally read as a Classifier, meaning 'to do with making beer'. Note that this is not simply a matter of the word's sense; the sense is controlled by the zone, which is signalled by the order of modifiers, and in speech by the stress – the Descriptor reading has roughly even stress on both words, but the Classifier reading has strong stress on "brewing". Other instances include "a baby monitor", "a reading dog", and "a charcoal burger".

There is one type of premodifier that does not conform to the zone structure: modals such as *fake, alleged*, and *former*. They are placed before the words they are to modify, so appear to shift zones; in "the former British welterweight champion", the modal precedes the Classifier *British*, but in "his British former wife" it follows that Classifier. There is a corresponding difference in nature from other modifiers. "Former wife" does not denote a quality of the wife, as "working wife" does, and does not add content. It is, in effect, the writer's comment on his or her use of words – "It is not valid now to call her 'wife', although it was once". This is language about language, characterised by function rather than "meaning"; these premodifiers have modal senses.

Pulvermüller (2010: §6–§8) gives a neurolinguistic explanation of premodification. The "assemblies" of neurons representing word meanings are combined by other assemblies; in "swine flu" for example, "flu" is activated fully, with its "full set of semantic features", but "swine" is activated less strongly, with only the features that are relevant to its modifying function.

Correct understanding of Classifiers, with the proper analysis of their subzones, resolves a very extensive debate on "compound nouns" and "noun + noun nominals" like "TV image". As those names indicate, the main cause of the confusion was primarily the assumption that part of speech dominates syntax

and therefore semantics, and a corresponding inability to see the fact that the first "noun" is a premodifier.

The account of premodification given here, and especially of bonding as an explanatory concept, obviates many "problems" and clumsy concepts discussed in the literature. In particular, it does away with the discussion of "categorematic" / "syncategorematic" modification, "intensional" / "extensional" modification (e.g. Frawley 1992: chapter 10); and"intersective" / "subsective" adjectives (Kamp and Partee 1995). (Chapter 3, §2.6.2, gives further discussion of intersective and subjective adjectives.)

It also helps to do away with the debate about ambiguities like "criminal lawyer". In the sense, '(lawyer) in criminal matters', 'criminal' is bonded to the 'occupation' element of 'lawyer', but in '(lawyer) who is a criminal', it is bonded by the 'character' element. The selection of the bond is controlled partly by the modifier's zone; the 'occupation' bond is activated when *criminal* is a Classifier, and the other bond is activated when it is an Epithet; see Table 2.7. It is controlled partly by the lexical item: "a British lawyer" – a Classifier – is bonded by the Origin quale, and "a handsome lawyer" – an Epithet – is bonded by 'appearance'.

Table 2.7 Criminal, as Epithet and as Classifier; invented phrases

Epithets	*Descriptors*	*Classifiers*	*Epithets*
totally criminal	*young*	*British*	*lawyer*
skilful	*young*	*criminal*	*lawyer*

ZONES: THE HEAD ZONE As noted previously, the heads of Participant groups are Entities, which are senses that are treated in the language as denoting what can have predications made about them. They typically denote what we take as things, but they may denote actions ("To work is to pray") or properties ("The worst season here is the wet"); they are thus "nominals", in the broad sense. They seem to have originated as senses denoting physical things; but speakers have treated abstractions like honesty, qualities like whiteness, and happenings like running as "things" we can talk about – as Entities. Phrases, as well as words, can denote Entities.

The semantic head of a group is not always the syntactic head. In "He drank

two cups of tea", "tea" is the semantic head: (a) it is co-referential with the whole of its phrase ("two cups of tea"); and (b) it denotes what "drank" bonds with – he drank tea, not cups. However, "cups" agrees with the determiner ("two") and has "of tea" syntactically dependent on it; so it is the syntactic head.

ZONES: POSTMODIFIERS Syntactically and semantically, adjectives and prepositional phrases can modify the heads of Participant groups, as postmodifiers or post-modifying groups. There are no subzones. The order is not set syntactically; it is affected, and possibly controlled, by two constraints, as follows. (1) "End weight": longer phrases and phrases more important in information structure should be placed later. (2) Phrases should be arranged by the nature of their bonding (to be explained later, particularly in Chapter 5, §2.3.7) – groups that are semantically "close" to the head should be close syntactically.

ZONES: CONCLUSION The term "zone" is roughly equivalent to "position"; but it is preferable, because it includes several elements that "position" usually does not. There may be several units occupying the zone; there may be sub-zones; and (most important) zones have both syntactic and semantic properties.

B. Process Groups Modification in Process groups needs little discussion here, because the principles and relations are the same as those in Participant groups, because the semantic structure is relatively simple, and because it follows the syntactic structure, which is well known. For more detail, see Halliday (2004: §6.3); I pass over the details of tense forms and types of auxiliary as more grammatical than semantic.

It is perhaps worth noting that premodifiers in Process groups are either grammatical words (auxiliary verbs, including modals) or content words (adverbs), usually in that order, as in Participant groups. Postmodifiers are typically groups, but sometimes single words. There is less structure than in Participant groups.

C. Circumstance Groups Circumstance groups do not need much discussion here. They are most often prepositional phrases syntactically, consisting semantically of a grammatical sense (carried by the preposition) and a Participant group, related by complementation. They can also be nominal or verbal phrases syntactically (thus resembling Participant and Process

groups), converted to being Circumstance groups by their role in the figure. They may have only one word, as in "They did it through their craft work instead".

D. Semantic Classes in Groups Traditional linguistics makes little distinction between "nominals", "verbs", and "adverbials" in groups and the same units in figures, but semantically the differences are important. Nominals acting as units of a figure are necessarily related by complementation to a Process, and therefore are Participants, having different properties from the same nominals as units of a group (where they are typically Entities, as head of the group). They are also structured with a bond appropriate to the Process type, as explained earlier. The differences in properties and bond define them as Participants. Many nominals do not act as a unit in a figure; some are modifier groups, and some are part of a prepositional phrase; as such, they are subunits in the figure and different from Participants in both semantic function and semantic structure. They must therefore be identified as belonging to a different semantic class. As noted above, they will be called "Entities" (with a capital E). Participant is the semantic class of the whole group; Entity is the semantic class of the head word. A Participant may be thought of crudely thus: Entity + role in a figure.

The term "Entity" is chosen to relate it to the corresponding semantic class of "entities" expressed in single words (see later). (It also relates the class to the traditional class of "nouns", which have been thought to name real-world entities.) But the term is a technical one, not a descriptive one, because they may name unreal "entities" such as holes and shadows, or real-world events (in nominalisations), and so on. Similarly, the head of a verbal group belongs to a different semantic class from a verbal group acting as Process; it is an "Event". Crudely, a Process is an Event + a role in a figure.

There is no such simple relationship between Circumstance as a semantic class in figures and a semantic class in groups. Circumstances are often rendered syntactically as prepositional phrases ("Tom put the parcel on the table"; "the meeting is on Thursday"). But they are often

realised by adjectives ("It is heavy"), or adverbs ("He ran slowly"), or adjectival and adverbial phrases. That gives us a clue to the semantic nature of these expressions. In everyday terms, adjectives and adverbs denote properties or "qualities"; they are Properties by semantic class (§2.2.2.2). When given a role in clause (e.g. as a time or manner circumstance of the Process), they act as Circumstances. Adjectival and adverbial phrases are often used in the same way: "It is heavy" = "It is of great weight"; "He ran slowly" = "He ran in a slow manner". Property + role in a figure = Circumstance.

Obviously, there is a link between everyday metaphysics and these semantic classes: Tom and parcels are people/things and also are expressed as Entities; putting and running are actions/events and also are expressed as Events; being heavy and slow are properties and are expressed as Properties. But the semantic classes are linguistic, not metaphysical, being subject to construal. Nominalisation construes a real-world action as an Entity; "running water" and "disabled skiers" construe real-world events as Properties; "an emerald necklace" construes a real-world thing as a Property.

The nature of semantic classes will be developed further in Chapter 5, where we consider the internal structure of senses.

E. Incorporation in Groups The structure usually known as "noun incorporation" has become increasingly common in English in the 21st century. That use has barely been noticed in the linguistic literature, probably because it is usually colloquial, as in the following: "I came up to this apartment building and I door-knocked these very kind people".[20]

The example cited seems to be ambiguous, as most instances of the structure do. The second clause is equivalent to, "I knocked on the door of these very kind people"; that structure forms one meaning. The condensed form ("I door-knocked") implies, by the principle of isomorphism, that "door-knock" denotes a different activity from "knock"; and its transitivity signifies that it affects people – rouses them, perhaps – which forms a second meaning of the utterance, and presumably the intended one.

In the semantic structure of the equivalent sentence, ‘door’ is the head of the Circumstance (‘on the door’). In the example cited, it is in the Process, and is a modifier,[21] not the head. That striking difference is represented graphically in Diagram 2.7. The underlying meaning is represented on the top line, and the attested sentence with incorporated “door” on the second line. The arrow indicates how ‘door’ has been moved, as it were, from head of the Circumstance to modifier of the Process. (“These people” is also moved, from Circumstance to Participant.)

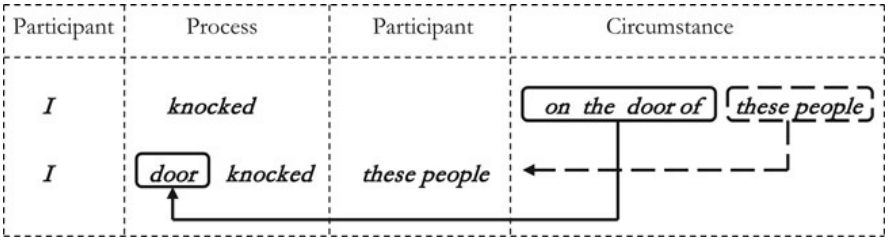


Diagram 2.7 Noun incorporation, in “I door-knocked these people”

In present-day English, especially in colloquial use, verbs, adjectives, and adverbs are “incorporated”, as well as nouns, and the semantic structure just analysed is now quite common. Examples include the following. “Gabby Douglas victim blames Aly Raisman”.[22] “Thirty minutes rainfast guaranteed”;[23] i.e. ‘will not by spoilt by rain falling within 30 minutes’ – noun + adjective compound incorporated into an adjective. “Work green-lit for leaky classrooms”;[24] i.e. ‘work given the green light’ – adjective incorporated into an adjective. “The Productivity Commission has called for big emitting agriculture to be”[25] – adjective incorporated into a verb. For more detail, see Feist (2013) on noun incorporation, and Feist (2016: §8.3.6.3) for a wider but brief account.

F. Discussion of Subordination in Groups To take a cross-linguistic view: French, which has somewhat complex modification of nouns but has most modifiers after the head, is subject to much discussion. According to Waugh (1976), post-position is standard; the word then takes its standard sense, being the same for all lexical items; in pre-position, it takes a sense specific to the particular lexical item being modified. For example, “un menteur furieux” means ‘an angry liar’, and “un mangeur furieux” means

> ‘an angry eater’; but “un furieux menteur” means ‘a compulsive liar’, and “un furieux mangeur” means ‘a prodigious eater’. (Other French words affected by position include *simple, grand, vrai*, and *pur*.) Other scholars disagree, Bouchard (1995) for example; but the semantic structure does seem to be significantly different from that of English, though like English in having an established unmarked use, with meaning changing according to a the word’s position. French can be seen as having an incipient zone structure, premodification being a position that affects the sense a word will convey, although the nature of that sense is not specified precisely.

Taking the historical perspective reveals an interesting link between the order of nominal premodifiers and their history. “Severe frequent bloody diarrhoea” has *bloody* in its oldest sense (dating from Old English), and in last position among premodifiers (i.e. in the Classifier zone). “The traditional bloody reprisal killings” has *bloody* as a factual Descriptor, in a Middle English sense; it is second oldest of these examples, and second last in position. “All this bloody modern British poetry” has an emotive Epithet, in a 17th-century sense; that is most recent, and first. (Feist 2012: 35.) The pattern is almost universal in English: premodifiers begin with factual senses, and new senses move forward through the zones. They lose some referentiality, in steps, as Descriptors and then Epithets; a few (such as *complete, utter, sheer*, and *absolute*) lose descriptive content altogether, becoming grammatical words, as Reinforcers. The pattern is that of grammaticalisation. (That historical development will be amplified in §3.)

2.2.4.4 DISCUSSION: SUBORDINATION

There is a more general sense of “subordination”, in which groups are subordinate to figures, and senses are subordinate to groups; those levels parallel the syntactic levels. Halliday (2004) calls such levels in language “ranks”. A whole clause can, then, be “subordinated” within a larger clause; for example, a noun clause may act as Subject, by “rankshift” (Halliday 2004: §5.5.2); semantically, a whole figure thus becomes a Participant within a larger figure. Similarly, a group can be rankshifted from functioning as a Circumstance to functioning within a larger group as a postmodifier.

"Subordination" is approximately equivalent to "dependency", but is used here more precisely than "dependency" usually is. In dependency grammar, as instanced by Hudson (2007), dependency includes a wide range of relationships, which should, however, be distinguished. According to Hudson (2007: 161), the underlined words in each of the following phrases have both the previous and the following word/phrase dependent on them: "John saw Mary"; "big book about linguistics"; "very happy to see you"; and "just before Christmas". We should, for example, distinguish the relation of "very" and "happy" from the relation of "happy" and "to see you".

The nature of subordination will become clearer in Chapter 3, §7, where grammatical meaning is discussed, and in Chapter 5, §3, where the internal structure of senses is discussed.

2.2.5 Discussion: Structure of Syntactic Units

There are several topics that are relevant but are not discussed here. Compositionality arises in the structuring of syntactic units, but explanation requires an understanding of meaning types in Chapter 3, and of sense structure in Chapter 4, so discussion will be provided in those chapters.

Negation is passed over here because it is well enough treated in the literature on syntax and on grammar in general. The discussion there is on the significance of negation and the area of meaning that falls into its scope, which shows that the discussion concerns semantics as well as syntax. Semantic scope is not discussed for the same reason; that includes such ambiguity as "I only cracked the vase", where the scope of "only" may be "cracked" or "vase".

Ambiguity has been encountered in passing and will not be considered here further, except to note that it has all been structural ambiguity, and that lexical ambiguity will be dealt with in Chapter 4.

2.2.6 Conclusion: Syntactic Semantic Structures

This section has described the obvious structures in semantics – those that correspond to clauses and phrases in syntax. It has explained how semantics

overcomes the severe limitation on structure imposed by the linearity of speech and writing. By making some words or groups serve the same function as a previous one, it makes hearers interpret those units as parallel, not successive. By making some units subordinate, it makes hierarchic structures. The section has not, however, shown how those reworkings of structure are achieved. That remains to be discussed in section 5 of this chapter, on realisation.

2.3 Structure of Content Units

2.3.1 Introduction

THE PHRASE "STRUCTURE OF CONTENT UNITS"

This section deals with what has commonly been referred to as "information structure", or as "information packaging", and so on; the most familiar form is that of Topic and Comment. The variety of names reflects the lack of consensus as to what these structures are and how they are related to the rest of grammar. The relationship is as follows. As speakers, we have a primary intention (noted in §2.1), such as conveying information; we have secondary intentions, also, such as being interesting, and helping hearers manage the information. We do the latter by signalling, for example, that a certain piece of information is the topic of what we are talking about. An obvious example would be the following: "That woman we met yesterday [Topic], she is …". The distinction between Topic and Comment does not correlate directly with any syntactic structure; here, "that woman" is "subject" in a loose sense, but "she" is the Subject of "is" syntactically. Those information structure units therefore are not syntactic units, but units of content, or "information"; they are most often used in information units,[26] which are realised as intonation units, phonologically, and as clauses (in formal English) syntactically. That is why this section is headed "structure of content units"; it could be headed "semantic structures not realised syntactically".

"Structure of content units" is preferable to "information structure". That is because the structure is always one of content, but not always of information: the

content may be neither information as knowledge of the world, nor informative as new to the hearer. That will be demonstrated in the following.

POSITION IN GRAMMAR

The place in grammar of this content-unit structure, or "information structure", should now be clear. First, it is part of semantics, because it is a matter of meaning; it is not part of syntax or phonology or morphology but is realised by them, as meaning is. Second, it is the part of semantics that is structured, not by the chunks of information that are realised syntactically in phrases and clauses (which was set out in §2.2), but by units of content as such (to be set out in this section, §2.3).

The relationship between content-unit structure and syntactic semantic structure can be clarified by considering the way the structures are signalled. The Subject–Predicator structure is signalled by the Predicator's agreement with the head of the Subject. But the Topic, which often coincides with the Subject, is signalled by a resumptive pronoun or some other device, quite distinct from morphological agreement.

MOTIVATION OF THESE STRUCTURES

The similarity between Subject–Predicator structure and Topic–Comment structure makes the latter seem redundant. It has developed – relatively recently in the history of English – by the expressiveness principle: speakers want language to express as much as possible. (See Halliday 2000 on the expansion of "meaning potential" in the modern English period.) It has developed also because language, as a human activity, is necessarily interactive; and it is interaction that makes speakers want to guide their hearers.

BASICS OF CONTENT-UNIT STRUCTURE

There are three content-unit structures in English, and I have seen no evidence

that other languages have more. As just noted, they are mostly substructures of the basic unit, the "information unit", which is often assumed to be realised as a syntactic clause, but which may be a sentence, or phrase, or word (e.g., "Heck!", "Fire!"). That syntactic variation is irrelevant: the information unit is realised as an intonation unit, with its phonological contour). That is what those contours are for (in English, at least).

The three substructures conform to the fundamental structural types we have seen previously: complementation, co-ordination, and subordination. They are also functional types, complementation having the function of setting out Topic and Comment, for example. (The functions for which the basic structures are used do vary across languages; some discussion is given in §2.3.5)

OUTLINE OF THE SECTION

The three types are discussed in successive sections. Complementation, creating Topic–Comment structure, is set out in §2.3.2, co-ordination in §2.3.3, and subordination in §2.3.4. As usual, discussion and a summary conclude the section.

Since the existence and importance of information structure is now widely accepted, I will not give many supporting references. I will, however, emphasise that it is now accepted in much formal linguistics, which at first rejected its claim to linguistic reality; see, for example, Maienborn and others (2011: section XV). The extension of this account beyond what is generally accepted, in §2.3.3 and §2.3.4, is based on Halliday (2004).

2.3.2 Complementation: Topic and Comment: Relevance Structure

GENERAL

The writer of a mountain-climbing story began his third paragraph as follows. "The ice cliffs had been pretty quiet during the previous days. They stretched across Mount Tasman's shoulders. They were a couple of hundred metres high".[27] Although the cliffs had been central to the previous paragraphs, the writer used a

full noun phrase for them in beginning the new paragraph, but used pronouns in the following sentences; that shows us that we are to take the information in the sentences just quoted, and what is still to come in the paragraph, as all relevant to the cliffs as the topic of the author's description. That structure (full noun phrase + pronouns referring back to it) acts as a linguistic sign of Topic, and of the writer's intention behind it; 'the ice cliffs' is thus a linguistic structure – that of a Topic (what the information unit is about); it is complemented by a Comment (what is said about the Topic, as description, narrative, and so on). That relation of "aboutness" is the relation of relevance; the structure should accordingly be described as "relevance structure".[28]

That structure contrasts with the lack of structure in the paragraph that follows in the story, which begins as follows. "Another ice fall. This time it makes the previous one seem like just foreplay. If I was to describe the sound …, I would describe it as a crack of lightning. This was the big one. Stu shouted to me, 'run!'" There are no signals indicating Topic, and no such structuring of information – the author is narrating a story, not describing a thing or idea. We observe, then, that not all sentences or other utterances have a Topic and Comment structure (cf. Lambrecht 1994: §4.1). In "If I was to describe the sound", we might regard the sound as the subject being written about, but it is not the grammatical Subject. Similarly, there are "topics" (in the everyday sense) in the passage quoted, but no Topic (in the linguistic sense) for the paragraph, or most of the sentences. What functional linguists call creating a "Topic" is also called inviting the hearer to "open a file", by the formal linguist Heim (1983), by Givón (2001: §10.8), and by others.

SCOPE OF RELEVANCE STRUCTURE

Note that strictly it is not syntactic units as such (sentences or clauses) that have Topic–Comment structures. Being structures of information, Topic – Comment structures typically inhere in information units, as noted above.

In present-day English, they occur also in larger units – groups of information units, extending over one or more written paragraphs, or their phonological equivalents (Tench 1996: 23–24; Halliday and Greaves 2008); the larger units are

"paratones". They are established phonologically. In unmarked form, speech paratones, in their simplest form, begin on a high pitch, with the pitch falling fairly steadily to the end; in formal speech, they are often followed by a pause. Speech paratones are therefore not distinct when speech is written down; readers must rely on associating what they read with what they hear. (See Feist 2016 for more detail.)

In some written genres, however, the Topic–Comment structure (and other content-unit structures) are often clear, for sections or a whole text. Newspapers and magazines, for example, commonly use headlines to specify the Topic of an article, and to summarise the Comment. The mere fact of being a headline or heading is an indicator of the information's status, and so are type face and type size.

There is a general parallel to Topic–Comment structure within the scope of groups, also: semantically, modifiers are "about" the head, which is their topic, though not marked as Topic. Groups sometimes have a formal Topic and Comment, in expressions such as, "he was reproached by an angry Sally-Anne".[29] Informationally, that consists of two assertions – that he (Topic) was reproached by Sally-Anne (Comment), and that Sally-Anne (Topic) was angry (Comment). The second Comment has been rankshifted down to the position of premodifier ("angry") within the Comment of the first assertion; that structure is marked by the normally ungrammatical determiner for the proper noun ("Sally-Anne").

DISCUSSION

There are many devices used for marking items of information as Topic. One little noted device is using an anticipatory pronoun, as in the following first sentence of a paragraph: "Understanding the aero-engine business is made harder by the fact that as they compete ferociously in one part of the market, manufacturers work together … in other parts".[30] Using pronouns before the noun they stand for is a marked use; it raises a sense of anticipation in the reader, a sense that the topic being discussed is still coming; the markedness of the use establishes the following noun as the linguistic Topic – the Topic of the whole paragraph in this instance.

I believe that Topic-hood is becoming more complex in present-day English. Consider the following beginning of a paragraph. A television news report about the second-in-line to the British throne, Prince William, mentioned his newly born son and went on to say: "In spite of being just two days old, Prince William wished to attend the ceremony".[31] In traditional standard English, such an introductory phrase was ludicrously ambiguous (as to whether it was William or his son that was two days old); but now such misrelation is accepted in such contexts, because (in this instance) "being just two days old" is taken as further Comment on the previous Topic.

The issues described here as matters of relevance are often described as matters of "new" and "old" information. That is based on a confusion, however. Denoting old information is a common quality of Topics; but old information and Topic cannot be equated because a Topic can consist of information new in the context, as it is the Sinn Fein passage, and a Comment can consist of old information (see also Feist 2016: §9.5.1). There do not seem to be signs for being old or new apart from the signs for being Topic; the distinction between them is not linguistic.

There is another confusion, in the common treatment of Topic as being an independent structure. But being what the clause or utterance is about necessarily implies a correlate – the information that is about the Topic. There must be a Comment, if there is a Topic.

The relation between Topic and Subject can be explained usefully through an analysis (based on Halliday 1970: 164) of the four functions that have variously been identified as "subject". (1) The "logical subject" is the actor in the real-life situation. (2) The "modal subject" (Halliday's term) is grammatical Subject, i.e. the syntactic unit that controls mood (imperative, interrogative etc.) in languages like English. (3) One kind of "psychological subject" is the Theme – the subject that underlies the Participants' current discussion. For example, "As to poison, you'd be better off using a trap". "This field, the rice is very good" (from Lahu, a Lolo-Burmese language, and cited Li and Thompson 1976: 462). (4) The last function is to be another kind of "psychological subject", the Topic, as discussed above; it is the source of the grammatical Subject, by gram-maticalisation (Lehmann 1976). (Subject (1) is not genuinely linguistic, as the others are, since it has no linguistic realisation.)

Mason and Just (2006) describe a brain network dedicated specifically to

interpreting referents as actors or protagonists; that supports the psycholinguistic reality of Topics.

2.3.3 Co-ordination: Theme and Remainder: Orientation Structure

GENERAL

The Theme (Halliday 2004) of an information unit is information that orients the reader or hearer to the information that is to follow. It may orient the hearer semi-literally, by specifying the place or time of the action or description; it may orient figuratively by specifying a connection with the previous text (Halliday's "textual Theme"). It may orient personally, as with vocatives and many discourse particles, such as *well* and *look* ("interpersonal Themes"), guiding personal interaction. Those interpersonal Themes explain why clause types are structured as they are: questions start with either verb and Subject inverted, or with a question word; commands start with a verb without Subject; exclamations start with *what* or *how*; statements start with anything else. The hearers are thus oriented immediately to how they should respond. Knowing the Topic of the utterance is naturally a good start point: "Topical Theme" is a third type of orientation – orientation to the development of information. The remainder of the information unit simply is the material the hearer is being oriented to; it has no more specific relationship to the Theme.

As with Topic and Comment, the interpretation of initial material as Theme is evidently set by the nature of thinking, rather than by the nature of language. That has been shown by Frazier and Clifton (2018).

Note that "Theme" here is distinct from "theme" in its common vague meaning, which approximates "Topic". The distinction is reinforced by the fact that Ojibwa (Tomlin and Rhodes 1992) often has both, as distinct units: Topic at the end of the clause, and Theme at the beginning. (Note that Tomlin and Rhodes refer to Topic as "Theme".) So do Cayuga, Coos, and Ngandi (Mithun 1987; see §2.3.2).

The sign that a certain word or phrase carries the Theme is only that the orienting information comes first. For centuries now, speakers of English have

grown up with that pattern from childhood, so that it has become conventionalised; the first item of information is taken as the Theme by default. That is so strong that the following is now acceptable: "In another generation from now, Statistics New Zealand estimates that we'll have grown by another third" (newspaper article). In traditional grammar, the underlined phrase is misrelated, since it relates syntactically to "Statistics New Zealand estimates"; but it was intended to modify "we'll have grown". That unusual structure and the initial position signifies that what happens in future generations is to be the underlying subject of discussion (Theme), with the grammatical Subject ('Statistics New Zealand') as the immediate subject (which was developed as the Topic of the paragraph).

SCOPE OF ORIENTATION STRUCTURE

Themes are most obvious at figure rank but occur also at higher and lower ranks. In the news article discussed earlier in §2.3.2, the larger-type heading provides, for the whole text, a Topical theme (the Sinn Fein) and a theme to orient the reader to long struggles (and to catch interest) with the allusion to the communist Chinese Long March. In figure complexes, the first figure acts as Theme.

In Participant groups, the initial article or demonstrative signals that an Entity is coming, orienting the hearer by definiteness or deixis. In Event groups, the initial finite element signals that an Event is coming (as in "has often been going") and orients the hearer by aspect and tense. See Halliday (2004: chapter 3) and Feist (2016: §9.3.3). There is a second sense in which English and other languages "orient" the hearer to the information being given. The use of modals (the English auxiliary verb *might*, for example) orients the reader to caution, in effect – caution against accepting the information being offered as fact – as do words such as *alleged*.

DISCUSSION

Theme illustrates why "content-unit structure" is preferable to "information structure". As noted under "General" previously, Themes often have conceptual

content but do not carry information (material that advances the hearer's knowledge).

2.3.4 Subordination: Rheme: Salience Structure

INTRODUCTION

The Rheme (Halliday 2004: chapter 3) consists of the information hearers are oriented to; accordingly Halliday (2004: §3.6) links it to the Theme. But it has its own function and structure – that of leading by steps of increasing salience to the "focus" at the end (in most uses of English). The structure is one of subordination, with less salient information subordinate to the focused information; so it should be rated as a distinct structure. Psychologically, salience is prominence in consciousness; semantically, it is importance of the content to the speaker's intention, forcefulness of argument, vividness, or strength of feeling.

EXAMPLE

The following passage is from a newspaper interview with a solo sailor who abandoned his sinking yacht in 6-metre swells in the Pacific but was rescued. As printed, it consists of one sentence; as spoken, it evidently consisted of several intonation groups, constituting a paratone. (The same passage will be used again later in the book to illustrate other features.)

> When you're alone, hundreds of miles from anywhere, floating around in something that is literally 5 foot square and it's just plastic sitting on the water, to see an aircraft come over and just keep going over you hour after hour – in fact I put in earplugs – it is the most reassuring thing in the world.
>
> (From *New Zealand Herald*, 20 November 2017, p. A3)

The speaker began with the Theme, "when you're alone" – loneliness is the theme of the whole passage. Then he spoke what must have been half a dozen

intonation units, which rose steadily in strength of feeling, to "hour after hour", which forms a minor climax. That is followed by a deliberate drop ("I put in earplugs"), making an apparent anti-climax. "It's the most reassuring thing" both concludes the little story and is what the speaker felt to be the main point; it constitutes the focus.

BASIS OF SALIENCE STRUCTURE

The structure appears to have grown out of the natural communicative strategy of putting what is most important at the end. Consequently, an item being at the end is in itself a sign indicating its salience; similarly, items with complex syntactic structure have for centuries been put at the end, for much the same reason, so that "end weight" is a sign of being in focus. In speech, there are much clearer signs: Rhematic structure is marked phonologically by steps of rising pitch and increasing stress, particularly in informal English. (However, those signs can be overridden by marked stress; they are indicators or "markers", not signs with a fixed, invariable meaning.)

SCOPE OF RHEMATIC STRUCTURE

The news article cited in §2.3.2 and §2.3.3 also illustrates rhematic structure in a whole text. The content is arranged in historical order, but it is also presented as a series of steps up in drama and political significance, each paragraph making one step. The emotionless beginning ("All they had to do was give up the armed struggle") leads to "The party's rise … has been steady and impressive" in the fifth paragraph, to "an impressive front bench and a strong spread of candidates" in the sixth paragraph, and then to the last sentence, "Both [the other political parties] insist they will not go into coalition with Sinn Fein, but few expect these promises to be kept if the arithmetic after the next election suggests otherwise". That sentence provides the focus of the article, prefigured in the heading, "The IRA's old partner could one day enter government".

Groups in English also now default to rhematic order. That is particularly clear in nominal groups, with determiners + one-word modifiers + head + phrasal

modifiers, which are normally more important that one-word modifiers. Speakers and writers can modify that, of course. The news article just quoted has: "its old rival as the main alternative to Ireland's other main party of government, the prime minister, Leo Varadkar's Fine Gael (descended from the winning side in that long-ago civil war)". "Long ago" as premodifier is rather unidiomatic, but that use put "civil war" in focus (emphasising that the issues are more serious than of being "rivals" or of the conflict's being a mere "struggle"), and it reduced the importance of "long ago".

GENERAL DISCUSSION

Several familiar grammatical structures seem to exist to allow us to control Rhematic structure. By using the passive voice, we can put the Agent in focus – not in the Subject, but at the end. In the dative alternation, we can say "gave John the money" or "gave the money to John". With phrasal verbs, we can say "put the book down" or "put down the book". The flexible order of Complements and Adjuncts also gives us control of Rhematic structure.

Like the other information structures, salience structure is commonly used in units both smaller and larger than the intonation unit. In para-tones, it is created in the standard way, by intonation. In Participant groups, in English at least, modifying phrases have more weight than single-word modifiers and are put after the head; determiners have much less "weight" than modifiers and come first; thus complex Participant groups have an inherent salience structure. Subordinate and main clauses are usually arranged Rhematically. Note that the issues for clause order are those of content-unit structure, although they are usually treated as syntactic.

"Information structure" is usually described as being "old" or "given" information leading to new information. We have seen that not all Topics are "old" information (§2.3.2). The rescue passage cited previously in this section ("When you're alone, hundreds of miles from anywhere") shows that the focus need not be new, since all the information in that passage had been given previously in the interview – the build-up was not in novelty or "newness", but in the author's feeling. The issue is not being new, but what the speaker deems

newsworthy.

Salience also explains the use of the genitive case in full noun phrases in modern English. We have seen that changing the form and position of a referring phrase changes how salient the referent will be in the hearer's understanding; and form and position of the phrase change with the type of genitive used. Compare the following examples (all from the Corpus of Contemporary American English), noting that in each case it is a specific university that is referred to.

a. Students can complete their general education coursework through the community college and then complete the university degree coursework without having to attend classes on the main campus of the university.
b. Sandra sent emails to principals and guidance counsellors of New York City public and private high schools within the same borough as her university, advertising free SAT vocabulary support sessions to take place on the university campus in the fall, 2011 semester.
c. In a second study, home-schooled children visited the university's campus weekly with their parents over a 10-week period.

In (a), the university is made salient by being put last in the figure, and in a full nominal phrase; the university is kept salient because it is to contrast with the community college earlier in the sentence. In (b), the university is already prominent because of "her university" earlier in the sentence, and the focus in the last 20 or so words is on the time of the sessions, not their place; the minimal form of the noun is used (i.e. the uninflected form) and is placed as a modifier, out of semantic and syntactic focus. In (c), a definite full noun phrase is used, but it is kept out of focus by being put at the beginning of the phrase.[32] That description of changing salience will be amplified in Chapter 4, §1.2.3, in the discussion of boundedness. (The genitive is used differently in pronouns; see Hristov 2013.)

That analysis of case is based on Jakobson (1936/1990), dealing with Russian and Indo-European languages more widely; but it goes further, in treating noun premodifiers (as in "the university campus") as forms of the genitive. The discussion of case will be extended beyond the genitive in Chapter 6, §3.4.2.

INFORMATION MANAGEMENT

The structures just described manage the salience of information. Language offers several structures controlling other aspects of information, which I will call "information management". Rhematic structure manages the salience of a whole item of information; we can also manage the relative salience of its constituent details. For example, if we reduce "automatic telling machine" to "ATM", most hearers will not conceptualise automatic, telling, and machine; that is, those concepts will not enter consciousness on most occasions, although they will be available deeper in the mind to be brought into consciousness if needed. By use of the acronym and its reduction of conscious content, the information load is reduced. Similarly, we choose between transitive and intransitive constructions to manage which information we are to load the hearer with, and how much. We can say, "He fed the cattle", or "The cattle fed on lush clover", or "The cattle fed".

We can reduce information load in another way, by making a syntactic position semantically empty, as with dummy Subjects, as in "It's raining", and "There's a". (Anticipatory pronouns have a different but related function, as in "It is obvious that".) This operates on a larger scale in Du Bois's "Preferred Argument Structure" (Du Bois and others 2003): in many languages, speakers prefer to avoid having two full noun phrases in one utterance, reducing one of them to a pronoun.

These devices illustrate again the importance of construal: we are not tied to "coding" our knowledge in specific ways, but can restructure it in many ways. The alternatives cannot appropriately be called "information-management structures", however; they are pre-existing structures turned to an information-management use.

PSYCHOLINGUISTIC SUPPORT

Frisson and Pickering (2016) report that readers spend longer processing the last word of a sentence, which reflects "additional higher-order integrative processing of the sentence as a whole" (Frisson and Pickering 2016: 509). Mason and Just (2006) give evidence that the brain has several networks for discourse processing,

working in parallel with the basic network for words and sentences.

2.3.5 Discussion: Structure of Content Units

WHETHER THE CONTENT-UNIT STRUCTURES ARE LINGUISTIC

"Information structure" is now accepted so widely as part of the grammar of language that there is hardly a need to demonstrate that it is linguistic rather than simply cognitive. We may note, however, that we have seen it to be created by such strictly linguistic signs as various "topicalising" constructions, intonation contours, initial position, and final stress. Its linguistic nature will be made clearer by the explanation of grammatical meaning (in Chapter 3, §7), since that type of meaning is the mechanism for constructing both syntactic structure and the structure of content units.

On the other hand, these units are sometimes weakly marked and, in some instances, not marked at all (by any linguistic form). These are content units, and the structural relations are sometimes only those of content, i.e. knowledge. For example, the relation of Theme to what it orients us to may be of time, causation, contrast, or many other things: hearers are left to infer it from their own knowledge. To that extent, content-unit structures are cognitive, not linguistic. The explanation for that, and for the fact that this content-unit structure has been recognised in linguistics only recently, is that it has developed relatively recently in English (see later). Its history suggests that development will continue relatively quickly, however.

WHETHER THE CONTENT-UNIT STRUCTURES ARE SEMANTIC

To my knowledge, no other writers have explicitly deemed information structure to be semantic,[33] so I will here expand my assertion (§2.3.1 earlier) that it is so. We can see that by considering the implicit messages about content relationships that typical utterances carry. The Topic of a figure can be construed as signifying,

"This is what the message is about; the information should be related to this cognitive topic in your knowledge". The Theme says, in effect, "This is what you should orient yourself to, as you begin grasping the rest of the message". The Rheme says, "This is how the items of information grade in importance". All of that has meaning; it has content (implicit content about the explicit content); it is semantic.

Note that the guidance to the hearer on how to absorb the information can be formulated as tacit instructions from the speaker: "Treat this part of your knowledge as the topic to attach the rest to"; and "Use this time (or place, etc.) as orientation to the coming events (or description etc.)". Vallduví and Vikunen (1998) give a similar explanation. "This phrase is an instruction to treat the information as the topic of the utterance" could be formulated as "This phrase is the Topic". Both provide grammatical descriptions; the former explains much more.

CONTENT-UNIT STRUCTURES AS SEMANTIC CLASSES

Topic, Comment, Theme, and so on can reasonably be said to be classes – semantic classes – in content-unit structures, paralleling Participants and so on as classes in syntagmatic-unit structure. However, it seems better to describe them as "functions", since that is more useful and more accurate – because these units do not constitute a paradigm and are chunks of content rather than linguistic forms. (The lack of a sharp distinction between class and function implicit there is messy as theory; but we are describing a human – even biological – system, not an abstract one.)

SYSTEMATICITY

The growth of information structure seems to be a recent historical development. Halliday (2000: 228–229) describes its development as part of a trend over the last 500 years towards organising discourse as a flow of information developing as the speaker continues (as opposed to a static and timeless structure), and towards regarding all language – even writing – as personal interaction between speaker

and hearer (as opposed to the formulation of knowledge displaced from context). It may have had origins in the relatively free order of Old English, which was destroyed by the much more fixed order of Middle English; see Los and van Kemenade (2012: §3–§4).

Being recent would explain why these structures are much less systematic (consistent, and with clear syntagmatic and paradigmatic structure) than the syntactic structures studied in §2.2; and it would explain why the signs are weak, sometimes ambiguous, and sometimes absent. Similarly, all the structures are strongly linear; they are only weakly hierarchic. Being recent, they have not had much time to evolve. (Chapter 6, §3.4.2, will develop that argument, and an argument that there has been an overlap with the function of case.)

On the other hand, the three structures (relevance, orientation, and salience) make a coherent system to an important degree. They arise from the widely acknowledged discourse principles that what is already established comes first, that what is most urgent comes first, and that what is most important comes last. (See Croft 2003: 66, for example.) The structures embody those principles completely. They are parallel and complementary to the syntactic ones: where the latter are informative, these are evaluative. The guidance to the hearer on how to handle the information covers how to prepare for it (Rheme), how to evaluate its parts as they come in (Rheme), and how to relate it to existing knowledge once it is absorbed (Topic and Comment); they are complementary to each other and seem to cover all the advice to be given.

CROSS-LINGUISTIC VIEW

MEANINGS

The significance of content units seems to vary across languages. Payne (1992: 4–5) gives what she calls a "provisional" list of four universal meanings (as "cognitive and pragmatic principles that motivate order variation"): (1) "cognitive status" (such as being Topic or focus, in my terms); (2) contrastiveness; (3) initiating or ending a "discourse chunk" (which includes my Theme); (4) temporal sequencing of information. That work, and others in the same volume, illustrate

those meanings. We have seen that English expresses the first ("cognitive status"), and part of the third (initiating discourse chunks, as Theme), by content units; it typically expresses the third (contrastiveness) differently, by phonological stress.

SIGNALLING

Where languages do have the same meanings, they often have different ways of signalling them. There are markers, such as the special purpose marker for Topic following a noun in Japanese, and prepositions to mark the focus value of each Entity group in Tagalog and related languages. Ojibwa signals Topic by putting it last (Tomlin and Rhodes 1992). So do the three languages studied by Mithun (1987): Cayuga, an Iroquoian language of Canada; Coos, a language of Oregon, USA; and Ngandi, a language of Arnhem Land, Australia. Quechuan languages (South America) mark Topic with a suffix (Muysken 1995). Some signal focus by marked order, or by placing the focus before a marked order i.e. inverted Subject and verb (Büring 2010).

Increasingly, linguists see cases as having this significance. For example, Pustet and Rood (2008: 335) observe that "foregrounding" is conveyed by nominative case in nominative-accusative languages, and by absolutive case in ergative languages, foregrounding being a form of information status between the extremes of focus and low importance. For English speakers, constituent order is a more obvious signal. We have seen that, in English, free order of sentence elements (where it exists, as with adverbials) has been given significance, as orientation, or as rhematic structure; even fixed order has gained significance according to the length of the units (end weight), in both figure units and group units (premodification versus post-modification).

STRUCTURES

It seems likely from the typological literature that the structures of complementation, co-ordination, and subordination are very widespread, if not universal, in syntax. It also seems likely that they are widespread in the structure of content units, but so little work has been done on information structure in

other languages that we do not know how widespread it is. It was for long not noticed because linguists were not looking for it, seeking morphosyntactic explanations of language instead. In particular, they have failed to see the significance of so-called free order of constituents ("word order"). By contrast, linguists who have approached the world's languages to describe them afresh – not to check them against European syntax or prove a theory – have frequently seen significance in the "free" order, noting that the order is free syntactically but constrained by information structure.

To Matthiessen (2004: §10.2.2.2.4), if the intention to convey conceptual meaning is dominant in an utterance, it sets "word order" (i.e. order of phrases) syntactically; if the intention to create information structure is dominant, it sets word order informationally (by Topic, Rheme, and so on). The various works in Payne (1992), on the "pragmatics" (roughly, information structure) of "free" word order, illustrate that. The work on various languages in Caffarel and others (cited earlier in §2.2.2.6), show that even many "fixed-order" languages have clear and regular structures of content units – just as English does – for Topic/Comment and Theme/remainder at least, although they vary in how the structures are realised. For further discussion, see Givón (2001: §5.6.3), referring to Bantu languages, Biblical Hebrew, Classical Arabic, Spanish, and German; he also gives useful references to other authors. Fang Yan and others (1995) argue that Theme–Rheme structure gives a better account of Chinese than traditional analyses based on Subject.

There is also a good argument to be made that the so-called "verb-second" order in Germanic languages was in fact an order for content-unit structure; they should perhaps be thought of as "Theme-first" languages, not "verb-second" ones. That can be seen in a passage of Old English, which many modern scholars rate as a "verb-second" language. It is from Aelfric's "Catholic homilies", XXIII, 336, the paragraph beginning at "Nu se halga Gregorius" ("Now says the holy Gregory"). The paragraph has 35 clauses. Two of them are not "verb second" by any analysis, and others are "verb third", beginning with an adverbial and the Subject; thus, a third of the clauses are not "verb second". All of them, however, are "Theme first". In the majority of clauses, the orienting is to time sequence, using adverbials, or *and*, as a narrative link. Others orient through topic continuity (the Subject first, as Topical Theme), or through logical connection ("if,

"because"), or through mood (warning that the clause is to be imperative or interrogative). That analysis of one passage does not prove that Old English used constituent order for information structure, of course; but it does, I trust, make the argument clear, so that it can be tested against other texts. Cummings (1995) shows from a variety of texts that Old English followed Theme–Rheme structure.

RANGE

The previous paragraphs show that the range of the world's languages that use content-unit structure is very wide. That geographic range, and typological range, are shown also by the various works in Adamou and others (2018).

PRINCIPLES

The structure of content units demonstrates two of the fundamental principles of language quite strikingly. Since it arises from the speaker anticipating the hearers' needs and providing help beforehand, it consists wholly of human behaviour as interaction – not impersonal representation of knowledge. Since it has loaded existing forms with extra significance, it demonstrates the expressiveness principle of achieving as much as possible with given resources. Semiosis has suffered somewhat, however; signs are lacking at times, and the signs used are not always clear-cut in significance. Similarly, content-structure meaning is not as systematic as syntactically structured meaning; but what I believe has been rapid development of "information structure" in the last few decades has resulted from the systematicity of English reasserting itself, as it were.

IMPORTANCE FOR LINGUISTICS

Content-unit structure has long been ignored by many linguists, evidently on the assumption that is it is not part of the grammar of languages and is therefore either irrelevant or unimportant. The previous discussion has shown, I trust, that

it is real in languages around the world, and that it has a good deal of importance, both in itself and in that it affects syntax and morphology. Two points may be added: it has been shown to be the basis for a universal typology of languages (Li and Thompson 1976); and it has been shown to be part of the historical development of languages (Li and Thompson 1976: 484–485; Lehmann 1976).

2.3.6 Summary: Structure of Content Units

The structure of content units can be summed up in a hierarchy, as in Diagram 2.8. Information structure, at the top, has three substructures. The first, relevance structure, has two subunits – Topic and Comment. Orientation structure has two subunits – Theme and the remainder; and it has three types – interpersonal, textual, and topical. Salience structure has a varying number of subunits – information units culminating in the focus.

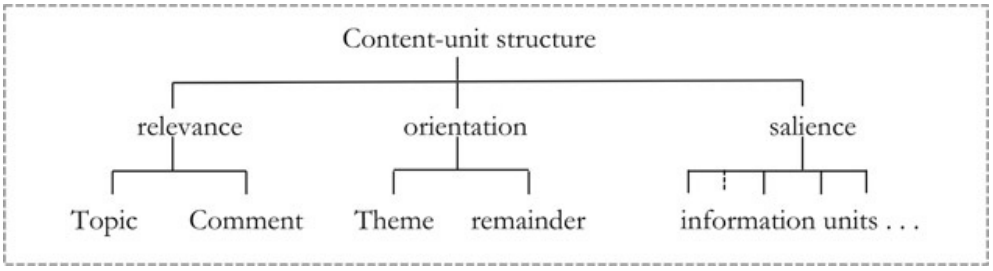


Diagram 2.8 Content-unit semantic structure as a hierarchy

2.4 Conclusion: Hierarchic Semantic Structures

SUMMARY

The most obvious structure in semantics is the hierarchic structure in which senses are organised into groups, groups into figures, and figures into para-tones. That matches the syntactic structure of words, phrases, and clauses, whose function is to mark off the semantic units, in unmarked use. That structure of

syntactically marked units carries the message. It is paralleled by a second structure, of content as such, which guides hearers in interpreting the message and applying it to their existing knowledge. That information structure has three forms: showing the relevance, giving orientation, and evaluating the importance of information items. That content-unit structure is less fully grammaticised than the syntactic-unit structure.

These structures embody several of the principles set out in Chapter 1. They are moulded by instantiation: since language is uttered in speech or writing, the structures are necessarily linear in form; some structures use that linearity (e.g. Rhematic structure), but most overcome the linearity and build hierarchies. That remarkable feat illustrates the principle of expressivity: language both exploits its limitations and overcomes them, to create varied but precise resources for expressing meaning. The structures also embody systematicity, being complex, yet interconnected and consistent.

INCIDENTAL CONCLUSIONS

The explanation of hierarchic structures has needed the use of several explanatory concepts that are not specifically structural, and that will be important elsewhere in the book, as follows.

- Marked order is order that differs from the standard, default, or "unmarked" order, and appears to contradict the principle establishing the rule for unmarked order; however, it has its own principle and its own rule.
- Misleadingly named "free" order is order not subject to syntactic rule; however, it is subject to information-structure constraints in English and many other languages.
- Semantic classes, such as Entity, Event, and Property, are important in structuring language; later chapters will show their nature and importance further.

3 Network Structures

3.1 Introduction

We have seen in §2 earlier that the familiar semantic structures are hierarchic; they need to be, to enable us to render faithfully the hierarchic structures of knowledge. On the other hand, there must presumably be basic network structures, since meaning is instantiated in the neural network of the brain. The fundamental resolution of that apparent contradiction will be given in Chapter 3, where it will be argued that the senses combined in the hierarchic structures are themselves networks.

In this section, we examine some partial resolutions, where networks of meaning have formed within the hierarchies of figures and groups. They seem to be compromises: clumsily formed, badly signalled, or underlying other structures – and the reader may even be unconvinced that they exist.

Little psycholinguistic and neurolinguistic support will be cited. That is because it is now universally accepted that mental structures are instantiated in networks, which are distributed across various areas of the brain, and that language, for example, is not simply localised in Broca's area and Wernicke's area. Research debates are now about such things as the number of layers needed in a network modelling a particular function, and whether the networks organise themselves.

3.2 Networks in Figures

Quirk and others (1972: §8.42) discuss the figure, "He buried his children bitterly". We read that sentence as having an Actor Participant ("he"), a Predicator ("buried"), an Undergoer Participant ("his children"), and a Circumstance ("bitterly"); we structure the four units by complementation, as discussed in §2.2.2, and interpret the statement accordingly. However, most readers will, I expect, accept the assertion by Quirk and others that those who read the statement will commonly form other connections as well, even without the force

of context. They will probably link "he" and "bitterly"; the statement implies 'He felt bitter'. They will quite likely link "his children" with "bitterly": 'He felt bitter because they were his children'. There is thus a series of secondary relationships or "dependencies", as well as the basic ones established by the syntax. That constitutes a small network of semantic connections. (The relation of Circumstances to the rest of the figure is often ambivalent in that way.) That network, combining the basic relationships set up by syntax with secondary associative relationships, is illustrated in Diagram 2.9. The bold lines represent the basic relationships (among "he", "buried", "children", and "bitterly"); the fainter lines represent the associative relationships.

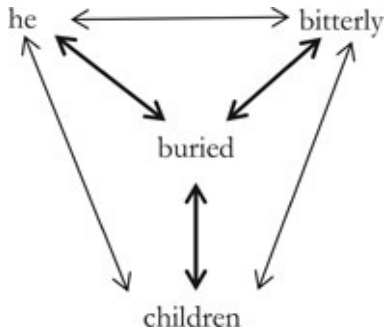


Diagram 2.9 Semantic network, in "He buried his children bitterly"

Such secondary networks of associations are common. Examples include the following.

- "In September, he told staff there were almost 400 individual submissions, totalling close to 1000 pages – which he had personally read".[34] "Personally" is linked to "had … read" by the syntax, but also to "he", because both words refer to the same person.
- "Antonia raised negligently her hand, holding an open fan".[35] "Negligently" is linked to "raised", since the raising was negligent, and to Antonia, who was negligent. Since the style of the source is strongly imaginative, it is also natural to link "negligent" to "hand", imagining the hand and wrist as relaxed and floppy.

3.3 Networks in Groups

CLASSIFIERS AND ENTITY HEAD

The part of §2.2.4 earlier on Classifiers mentioned the implicit Participant–Process relationship they sometimes use, as in "government farms buy-up" – 'the government [Actor] buys up [Process] farms [Undergoer]'. Such groups build a small-scale network. The group, "consumer fuel purchases", has its two Classifier modifiers as Properties, restricting the reference of "purchases" as an Entity, in the usual serial structure – "[consumer [fuel purchases]]". But we also understand an underlying figure – the consumers (Actors) purchase the fuel (Undergoer); that relies on using the Process, 'to purchase', not the Entity, 'purchases', and the transitivity of the Process links them as complementary. The hierarchic connections of modification combine with the linear complementation connections, making another kind of small network.

OTHER MODIFIERS AND ENTITY HEAD

Small networks also develop among the other premodifiers in Entity groups. For example, in "a good thick rod of very hard wood",[36] "good" has the basic semantic function of modifying the whole of "thick rod of very hard wood"; but it also intensifies "thick" ('quite thick'), and expresses approval of the thickness. Structurally, it is both a modifier (of "rod", basically), and a sub-modifier (of "thick").

In elliptical expressions, the network can spread widely. When a reviewer wrote, "The film is a rewarding watch", readers would have understood, 'The film will reward you, if you watch it'. The various relationships within and between those two figures were condensed and projected asthe single short group, "a rewarding watch"; "reward", for example, is linked with both "you" and "watch" – 'reward you' semantically, and 'rewarding watch' syntactically. Diagram 2.10 shows the structures. Section (a) represents "the film is a rewarding watch". Section (b) represents the understood statement, 'The film → *will* reward → you, *if you* → watch → it / the film'. (In the diagram, roman type indicates content nodes, and italic type indicates links between the nodes.) Section (c) represents the combination of (a) and (b), which is what we must form in our minds as we

read the sentence. Section (c) is rather obscure and potentially confusing; it is intended to illustrate the power of the expressiveness principle, seeking ever more finely adjusted semantics – adjusted, in this case, to a literate audience and the desire for brevity.

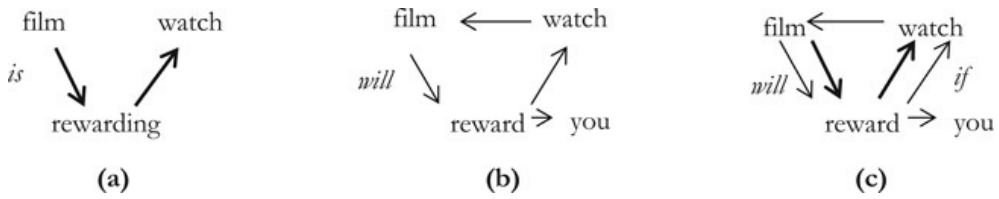


Diagram 2.10 Network in an elliptical expression, "The film is a rewarding watch"

3.4 Networks Across Semantic Structures

COHESION

Halliday and Hasan (1976) present the concept of cohesion, as congruity in linguistic expression, comparable to coherence in content; it creates a network across the figures within a paragraph, or within some larger part of a text. (For further discussion, see Fetzer and Speyer 2012). It is primarily congruity in linguistic content, rather than in linguistic form; since we are concerned with semantics as linguistic structure, not content as such, it is only marginally relevant.

However, cohesion is relevant here to the extent that it is achieved partly by the types of meaning to be discussed in Chapter 3, and by word choice. Consider the following short passage.

> Mr Abe [the Japanese Prime Minister], though a nationalist, is not in the macho mould of the often bare-torsoed Mr Putin [the Russian President]. Nevertheless, he hopes to get the [Kurile] islands back in a naked man-to-man session with the Russian president in a hot spring in his home prefecture.[37]

The words underlined all convey approval, have similar associations, and are

nearly all monosyllabic Anglo-Saxon words, to help those associations. There are conceptual links also, as between MACHO, BARE-TORSOED, and naked. Those all create networks of links across the passage. Imaginative English can be still more cohesive, especially through the use of figurative language, which activates more of the potential links.

SENSE RELATIONS

Sense relations, such as synonymy and antonymy, make another kind of network, extending through the lexicon of a language, and sometimes extending across figures in a text. Explanation of these needs the concept of meaning types to be presented in Chapter 3, so discussion of them is deferred to that chapter. Note that the issue is one of relations between senses, not between words. That is shown by the fact that different senses of a word often have different synonyms and antonyms. For example, the antonym for *positive* can be not only *negative*, but also *natural* (for SOED's sense <1> 'conventional'), or *implicit* (for sense <2> 'explicitly laid down'), or *uncertain* (for sense <3> 'confident').[38] Because the relations are between senses, not words, the common term "lexical relations" is unsuitable; "semantic relations" is accurate, but "sense relations" is more precise.

3.5 Discussion: Network Structures

NEUROLINGUISTIC SUPPORT

It is now generally accepted in neurolinguistics that language is instantiated by a brain network, or set of networks. Pulvermüller (1999: 253) sets out the basics as follows. A linguistic network consists of strongly connected cell assemblies, each representing a word or its meaning. The assemblies form when neurons in different areas of the brain cortex are frequently active at the same time, making a very small-scale network; repeated activation entrenches the connection, making the assembly likely to fire when the central neuron ("node") is activated. When combinations of assemblies are frequently active together, larger networks

are formed. Assemblies may be in a quiescent state, or be in low or full activation when stimulated; the activation may continue as "reverberation" when the stimulus ceases. The stimulus may come from "below", as sensory experience, or from "above", as the intention to speak. A small network may inhibit a network it is linked to, instead of activating it.

3.6 Conclusion: Network Structures

The nature of a network is in principle quite clear: it consists of nodes and links. For the networks studied in this section, that nature is indeed often clear, but often it is not. I will illustrate that with two examples.[39] The first is, "[We] [thank] [Sandy Thompson]"; it has three groups, which are nodes; it has links between them, consisting of the transitivity relations; that is straightforward.

The second example is not so clear: "We are grateful for the generous support we have received for this project from the Interdisciplinary Humanities Center". "We", denoting a Participant, seems to be a node; but in another sense it is a link – to its antecedent. "Are" is a syntactic phrase, so appears to be a node; but it has no content and acts semantically purely as a link. Similarly, "for" has a syntactic relation with the following phrase "the generous support", so appears to be a syntactic and semantic node; but it also is a linking word and has no significant content, so perhaps it is only a link. The phrase, "from the Interdisciplinary Humanities Center", is linked as a Circumstance to "received"; to that extent, it is a single (rather complex) node. The whole relative clause beginning "we have received" must be a node (modifying "support"); and "the generous support" combined with that dependent clause makes a still larger node.

The structure of that sentence, and of many others, can be resolved, I think, by conceptualising the whole sentence multidimensionally, with some links leading to a different dimension, and with mini-networks within the main network. The mini-networks are senses, as will be explained in Chapter 5. We will also there meet other kinds of network, in discussing the internal structure of senses.

4 Other Structures

4.1 Introduction

Following work by Pike, Halliday (2004: §6.2.4) draws an analogy between forms of meaning and forms of matter. The structures we have been discussing have units, which are analogous to particles of matter. But some meaning, it is suggested, is better understood as waves in a continuum, like electro-magnetic waves or waves in the sea, rising and falling in significance; and some meaning is better understood as a field, like magnetic and gravitational fields, where the force acts on everything within it.

The analogy seems a little too pat, at first; but analysis of the structures referred to shows that it is apt, and that there is good justification for keeping the terms "wave" and "field".

4.2 Wave Structures

In §2.2.3 earlier, Rhematic structure was presented as a series of steps; more precisely, it is a series of small waves. Consider the following sentence (where the bars indicate group endings): "If your mummy | was going to make | a frock, | what material | would she use?"[40] In speech, the underlined words would be stressed, creating a wave structure in the phonology, which is rhythm. Those words are content words, which carry more semantic weight than the others; so there is also a semantic rise and fall in wave structure. As well as the rise and fall within each group, there is a general rise to the focus on "material". (See further Feist 2016: §10.5.)

Wave structures occur on larger scales as well, in rise and fall of news-worthiness through successive Topic–Comment structures and through main and subordinate figures, and in climactic rise through paratones. That was illustrated in the rescue story cited earlier in §2.3.4, where the half-dozen intonation units formed a series of small rising and falling waves, with the whole story making a single large-scale wave The more formal rhythm of poetry and rhetorical speeches, and stanza structure, are intensifications of normal structure, in English and phonologically similar languages.

As noted for rhematic structure, the significance here is sometimes a matter of

the conceptual content, but often a matter of the feeling being expressed by the speaker and aroused in the hearer.

4.3 Field Structures

A football commentator said, "Brian Deane has scored his first goal…. But really he was bought to SCORE the bloody things".[41] [The capitals were in the original.] Syntactically, "bloody" modifies "things"; but semantically it expresses indignation with the whole situation that is expressed in both sentences. So it is like a force field, affecting everything in it – the goals, Deane, and probably the team management. Similarly, in registers of language such as technical, informal, and dialectal varieties, particular colloquial or dialect words create a field that spreads over the whole passage, so that we take the whole passage, not only the individual words, as belonging to the register.

Further, such fields are commonly cumulative. When the example just given was spoken, "really" would have had some sarcastic stress; "SCORE" had strong sarcastic stress (as shown by the capitalisation); and "bloody" continued it. The feeling accumulates in such passages; the field strengthens.

Other instances of semantic field structures include the following. (a) Grammatical mood such as being interrogative or subjunctive; (b) modality, as set by modals such as *probably*; and (c) negative polarity items such as *neither*.[42] For example, initial *what* makes the whole utterance a question; *neither* makes the whole clause negative. (d) When we say that the meaning of a word depends on its "context", or its "frame" or "scenario", we are invoking the field concept. (See further Feist 2016: §10.4.)

4.4 Indeterminate Structures

SYNTACTICALLY WELL FORMED STRUCTURES

Expressions such as "It's raining" and "There was an earthquake" are well formed syntactically, but not semantically. The whole situation is represented at once, as

a schema or gestalt, without being differentiated into specified entities and events, as they are in “Raindrops are falling”, and “The earth quaked”; the semantic structure is indeterminate, although our understanding of the facts is determinate. “There’s a fire” and “It’s hurting” are similar.

SEMI-FORMED STRUCTURES: IDEOPHONES

Ideophones form a loose class of words, combining regular meaning with sound effect; typical examples are *helter-skelter* and *pell-mell*. They are semantically less well formed. They commonly fit into a syntactic structure, as in “He threw a wobbly”, and “She went doolally”, but even there they are idiomatic to some degree, there being little semantic coherence between the Predicator and the Complement or Adjunct. (There is nothing about the abstract word “a wobbly” that justifies “throw”; there is little connection between the movement of going and the state of being doolally.) Other uses of ideophones have no syntactic structure at all: “Oh, hoity-toity!” Some, however, have been assimilated into ordinary words, as in “The house … was decorated with grotesque knick-knacks”. Generally, then, these words are vague in their descriptive meaning, and also in their function, since they serve variously to express a feeling or attitude, to give an interesting sound effect, or to be vivid or playful.

HOLOPHRASES

Holophrases are expressions which seem to condense a whole utterance into one or two words. They are still less determinate than ideophones. A child’s utterance of “dolly dress” might be a statement or a request or a question; the intention might be clear if it were uttered with specific intonation, but morphology and syntax do not make the meaning determinate. Moreover, often children do not formulate their intention precisely, anyway, so that utterances like “my shoe” and “up there” are multifunctional, and the hearer must take several meanings at once, or determine a specific meaning according to context.

As the word itself suggests, a holophrase indicates a whole situation. That makes it very useful: the child can communicate without mastering much

language, and adults, too, can communicate very briefly and quickly. The exclamation "My leg!" gives information, calls for help, and releases feeling. *Whatever*, in the following piece of colloquial conversation, similarly serves several functions at once.

> They send this water all over the country [pause] and it's so full of iron [pause] Germany, they buy it [pause] but er, it's a good [pause] I don't know about cure, but whatever!
>
> (From the British National Corpus)

Parenthetical expressions such as "I think" are also often holophrastic, as in, "Oh, he'll come, I think", compared with definite and precise "I think that India will win", and almost modal qualifying use like "But that, I think, is unlikely". (The point is expanded in a later section.)

One value of clichés is that they often act as holophrases, communicating a good deal, briefly. Thus, "I want answers!" (a voguish expression of outrage, at the time of writing) can convey factual information (the surface meaning), imply another assertion (that someone must be held to account), express a feeling of anger, convey an attitude of disapproval, and express a desire for vengeance, while aligning the speaker with the social group whose cliché it is.

Holophrases affect our understanding of what morphemes are. Taken as the basic morphosyntactic unit of meaning, morphemes assume that there is a single meaning, coded by the single form. With holophrases, that does not apply, since a holophrase with a single morphological morpheme has several meanings.

CONCLUSION

These indeterminate structures remind us that meaning in language is human and functional, so that semantic structures grade off into being unstructured; but they remain acceptable, and may even be more effective for being unstructured.

5 Realisation of Semantic Structures

5.1 Introduction

All of the semantic structures considered in this chapter consist of abstractions; they are conceptualisations in our minds. They become real only when used in an utterance. That is, they become physically real as spoken sounds or writing, in "realisation" – "instantiation" to Halliday (2004). Realisation can be considered as either the relationship between the meaning and the physical form, or the process of creating that relationship. Here, it will be treated as the process, and treated linguistically, as occurring in three main stages (according to the "strata" of language): formulation in words, arrangement in syntax, and expression in speech or writing. I believe that conforms to psychological realism as far as it goes, but the account does not consider such possibilities as sub-processes occurring simultaneously or occurring in a different order; nor does it cover the assembly of the sublexical elements to be discussed in Chapter 5.

Since meaning is distinct from its realisation in words and so on, the theory of realisation is not part of the theory of meaning being expounded in this book. However, the fact that meaning is realised is part of the theory;[43] and realisation is relevant in two other ways. Considering it is necessary for understanding the structures already discussed; and, as a relationship among the three strata, it is a structure in itself.

The issues here are very different from those considered so far; they come with what is perhaps a different approach to semantics. Likewise, although the description here rests on the familiar principles of human activity and embodiment, it rests crucially on a new principle, the semiotic principle that language is a system of signs. Semiotically, realisation is the selection of signs to represent the meaning ("coding" perhaps) or, more precisely, to achieve the speaker's intentions. Intention is fundamental to meaning.

Analysis of the realisation of meaning reveals two patterns, which are overlapping but distinguishable nevertheless. In one, hierarchic structures and conceptual words are used almost exclusively; that is because the intention is to convey conceptual meaning – "ideational" intention. That pattern of realisation is dealt with in §5.2. In the other pattern, hierarchic constructions do occur, but also networks, and the minor structures of waves and fields, and indeterminate structures; that is because the intention is to achieve an "interpersonal" function,

such as sharing feeling, telling a funny story, and being sociable. That pattern is discussed in §5.3. The treatment here is fairly brief; for extended discussion, see Feist (2016: chapters 11 and 12). (Those intentions are called "metafunctions" in Systemic Functional Grammar (e.g. Halliday 2004), and that term will be used later in the book; see Chapter 3, §2.1, for example.)

5.2 Realisation of Ideational Intentions

The following passage is the first sentence of a newspaper report on online-review websites; the report mocked the pretensions and dishonesty of some such sites. Following the quotation is a reconstruction of the linguistic steps that were evidently needed for the journalist to write it.

> For just US$ 95, REVIEWS THAT STICK will post glowing reviews of your restaurant on six websites. [The upper-case letters were used in the original, as the name of the website.]
>
> (From *New Zealand Herald*, 7 January 2017, online, business section)

First (for the core of the sentence), the following words were formulated, to embody the content: *reviews that stick* (a lexical item, being the name of a website), *post, review, glowing, restaurant, your* (= 'belonging to you, the reader'). In the second step, the words were given morphosyntactic form, having grammatical items added (e.g. *will* and *of*), and having the words arranged in order, making a grammatical sentence. In the third step, the sentence was realised physically as typed words.

The steps are rendered graphically in Diagram 2.11. It pictures the steps as movement upward; to emphasise the difference between syntax and its realisation, the written form is replaced by phonological form (rendered in a pseudo-phonetic spelling.)

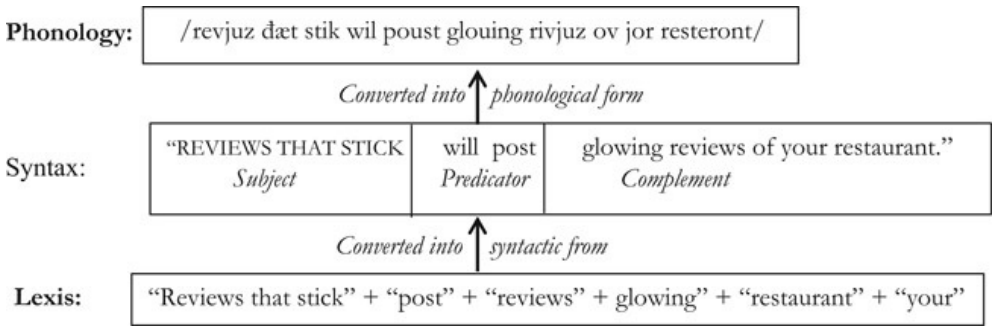


Diagram 2.11 Steps in the realisation of an ideational utterance (simplified)

An amplified version of the steps is as follows. Once the journalist had decided to fill his introductory sentence with that knowledge, most of it must have been put into a form that would provide for expression in words (or other linguistic form); that is, the journalist selected linguistic senses; the knowledge must have been "semanticised". The senses were selected because they are directly related to word forms that would symbolise them. (The conceptual element[44] ninety-five dollars was treated a little differently: it was kept in a form that provided for mathematical expression, as "$95", not linguistic expression as "ninety-five dollars".)

Knowledge of how website managers make things appear on the web-site must have been semanticised into a sense that allowed *post* to be used, but also allowed *put* and *placed*. ("Post glowing reviews" could have been "put glowing reviews" or "place glowing reviews"). From those possibilities, *post* was chosen: the sense was lexicalised, i.e. assigned to a word form. Similarly, the idea of short articles critiquing something was lexicalised as *review*. 'No more than' became *just*, not *no more than*. "Reviews that stick", as the name of the website, was already lexicalised, ready-made. The content words, embodying the knowledge to be realised, were then arranged into phrases (since English syntax requires phrases), which were combined into a clause. That is, the developing utterance was "syntacticised", which is here taken to include the management of morphology. The words, now in order and with their spellings implicit, were typed out sequentially. The flow from stratum to stratum is smooth; there are no significant sub-processes, and no mental module is needed to make transitions. Using the term "interface", as many linguists do, is therefore quite misleading, since it implies that between two strata are forms or processes distinct from those within

the strata. The difference between "lexis" and "syntax" is in the linguist's concepts, not in any reality of mind or brain.

That procedure is far from straightforward, however. The statement, "REVIEWS THAT STICK will post glowing reviews of your restaurant", somehow puts into words the assumed fact that the reader owns a restaurant, and the implied fact that the website staff will "review" it several times. Of that material, the content 'reader owns' does not appear in content words, but appears in the grammatical item *your*. The transitive relation in 'review it' disappears, the reader being left to infer it from the semantically empty linking word, *of* ("reviews <u>of</u> your restaurant"). The implicit content, 'after they receive your $95', appears in the grammatical word *will*. 'Several' is transmuted into the inflection *–s*.

In this process of syntacticisation, then, some content disappears, and some appears in grammatical words, not content words. Grammatical relations appear, as either replacements for real-world relations or additions. Displaced, impersonal information about the website is subsumed into an interpersonal transaction, since the writer is making the reader a promise: utterances can never be purely ideational, since they are necessarily human actions involving a speaker's intention to affect a hearer, if only by adding to his or her knowledge.

The reader will perhaps have noticed that the previous paragraph glossed over some sub-steps, namely, arranging words in order, and arranging groups in order. That is important, because arranging syntactic units entails their having a position assigned, and position is usually a semantic sign. Every word in the sentence is necessarily signalled as modifier or head; syntax is necessarily semantic. Further, the grammatical words inserted have their own significance, such as tense and plurality; they are not merely syntactic "linking" words: grammatical words are semantic, also. Finally, the syntactic structure does not correlate directly with the structure of the knowledge to be conveyed.

Uttering content items on their own would be almost totally ineffective. That is highlighted by their meaninglessness when stated on their own in alphabetical order: "Glowing post restaurant reviews stick US $95 websites". They mean little even when placed in their syntactic order: "US $95 REVIEWS THAT STICK post glowing reviews restaurant websites".

5.3 Realisation of Interpersonal Intentions

Our sample sentence had the ideational intention of conveying some information, but it also had interpersonal intentions. "Just US $95" was apparently expressing praise for the cost but in reality was sarcastic, and "glowing" gives another mockingly emotive touch, since the reviews were to be fake. Furthermore, although the central block of the sentence is ordered by syntactic rule (Subject + Predicator + Complement), the other groups, whose position is at the writer's discretion, are placed for their effect on the reader. "For just US $95" is placed first, to make it the Theme, immediately setting the attacking tone of the sentence (and, in fact, of the whole article). "On six websites" is placed last, as the information focus. Thus, the syntactic order of those groups realises the interpersonal function of guiding readers' response to the sentence; to that extent, syntactic order does not have syntactic function, but semantic function. Some features of the written form also guide readers' response, such as punctuation and capitalisation.

We have just seen lexis and syntax used to realise interpersonal meaning. Phonology is still more widely used. Much of the feeling and attitude we express is realised directly into phonology, in the pattern of the whole intonation group, and particularly in the tone – that is, in the pattern of fall/rise at the end of the intonation group. Each tone has a specific regular meaning, such as questioning, for the rising tone; each also has a different meaning in marked use, such as surprise or doubt, for the rising tone. Even individual phonemes are used at times, in defiance of the "law" that morphemes are the minimum meaningful unit; examples include lengthened or stressed initial consonants ("Not just millions – billions!"), with an individual phoneme being meaningful. Indeed, the whole of phonology carries far more meaning, and is far more systematic, than has usually been recognised; see Halliday and Greaves (2008). Phonological expression of those meanings has syntactic and lexical expression as alternatives: questioning may be made syntactically by inversion of Subject and Predicator, or lexically with the tag, "isn't it", as well as phonologically by the rising intonation.

Several generalisations may be made, in conclusion. The realisation of interpersonal intentions interacts with the ideational intentions; given that language is always part of interaction between speaker and hearer, that is

universal. Realisation usually has alternative forms; lexis, syntax, and phonology are often alternatives, and sometimes reinforce each other. For example, Mitchell (1985: §1146) lists 11 alternatives for intensification in modern English, such as an intensifying modifier, a more emphatic word, repetition, variation in order, and several phonological devices. If we assume that language has evolved gradually as humans evolved gradually from being like other primates, we will see interpersonal intentions as basic to language, just as speech is; accordingly, we will see phonology, not words or syntax, as the basic form of realisation.

5.4 Discussion of Realisation

TYPES OF SIGN

The construction in which a full Subject phrase is summed up with a resumptive pronoun (e.g. "That man we met last night, he …") is a distinct sign with the single and distinct meaning that the phrase is to be Topic, as well as Subject (§2.3.2). It is thus a symbol, carrying meaning in the same way as words do – *platypus* is a distinct sign which always refers to the animal, platypus. There is a one-to-one relation between sign and meaning. Other signs of Topic-hood, however, work quite differently. Inversion of phrases may signify Topic-hood, but it is often merely stylistic. Using pronouns (especially after a full noun phrase) may signify Topic-hood, but often signifies nothing at all, being used simply to avoid repetition of the full phrase. None of those single signs on its own regularly signifies Topic-hood, and, to be reliable signs, they all need confirmation by something else (even if only by content relationships). Such signs will be called "markers",[45] with a one-to-many, or many-to-one, relation with what they signify. (Some languages, e.g. Japanese, use specific words to signify Topic-hood; they are often called "markers", but in my terms, they are symbols.)

We will meet other types of sign in the following chapters, and their nature will be an important part of the discussion of semiosis in Chapter 6.

RELATION OF SEMANTICS TO THE OTHER STRATA OF

LANGUAGE

The nature of the relations between semantics, morphosyntax, and phonology will recur in later chapters and be given extended discussion in Chapter 6; but we can note already that morphosyntax and phonology are not simply fixed forms, like moulds into which meaning is poured. They consist of signs, but the signs are not like those in a computer code, into which intended meaning can be translated automatically. They are highly adaptable and almost always offer alternatives, among which the speaker can choose.

CROSS-LINGUISTIC VIEW

The realisation of the figure–group–sense hierarchy, in morphosyntactic structures, is similar to that of English in many languages around the world, both those that are typologically like English (e.g. French), and those that are much more synthetic (e.g. Finnish). In analytic languages, such as Chinese and Vietnamese, scholars identify semantic elements such as Participant (commonly called "subject" or "object"), although they are not marked formally; e.g. Thai (2004) on Vietnamese. In polysynthetic languages, the elements of a figure may be realised as morphemes within a single word; for example, see Mithun (1997) on Bella Coola (a Salishan language of Western Canada). In some languages e.g. Thalanyji, groups (as semantic units) are not realised by phrases (as syntactic units), but by apparently scattered words linked by shared case (Evans and Levinson 2009–2010: §6).

The various chapters in Caffarel and others (2004) show that the realisation of information structure in content-unit structures is like that of English in a wide typological range of languages, in that the same linguistic forms are used as in English. Those languages often differ, however, in which form is used for a particular structure. For example, Tagalog uses prepositions to mark Theme, and in unmarked use, places it at the end of the figure (Martin 2004). However, Chinese (Halliday and McDonald 2004), Vietnamese (Thai 2004), Telugu (Prakasam 2004), and Pitjantjatjara (Rose 2004) realise Theme in much the same way as English does.

5.5 Conclusion: Realisation

Putting our meaning into spoken or written words is simple in outline – steps through the strata of language – but is complex in the detail, with a wide range of means available. It allows great flexibility and subtlety, and provides for a wide range of intentions to be realised, on their own or simultaneously. As we have seen before, expressiveness is a dominant principle of language.

6 Conclusion: Semantic Structure

SPECIFIC CONCLUSION (1): LINKS WITHIN STRUCTURES

The links within structures are based on cognition, just as linguistic semantics is based partly on cognitive semantics. We make explicit conceptual links in such expressions as "an additional point is", "as a result", and "accordingly". They have been partially grammaticised in conjunctions such as *and, but*, and *because*, and grammaticised more thoroughly and in a more complex way, in prepositions. We make wholly implicit links also; they have been mentioned in this chapter (as "bonds") and will be described fully in Chapter 5.

The links may be summed up in alternative classifications.

- By semantic type: (1) for complementation, the links are grammatical relations such as transitivity; (2) for subordination, there are the attribute-value relationship (as in Participant group premodifiers), and sharing a Participant (as in the relative pronoun in a relative clause); (3) for co-ordination, there are concepts explicit in conjunctions.
- In classification by form of expression, there are (1) explicit bonds (to link figures; relative pronouns and conjunctions); (2) implicit bonds (between word senses; e.g. attribute and value); and (3) mixed explicit/implicit (linking certain groups; prepositions).
- In classification by area of meaning: (1) grammatical bonds (the explicit ones); (2) mixed grammatical and content bonds (e.g. qualia, which have

grammatical form but whose significance is commonly left to hearer inference); (3) content bonds (e.g. value–attribute relations relying on our general knowledge of colour, shape, and so on, and the bonding in waves and fields).

- For the networks on which those structures draw, it will be shown in Chapter 5 that the links cannot be specified, because they are below word level, and below consciousness; further, the distinction between node and link can at that level not be made usefully.

SPECIFIC CONCLUSION (2): PRINCIPLES OF LANGUAGE

One new general principle of language has been introduced in this chapter – the semiotic principle that language works by a system of signs. It will become more important in later chapters, and will be given a section of its own Chapter 6. The principle of instantiation has been important, since semantic structures can only be understood as the embodiment of semantic intentions. The most frequently mentioned principle, however, has been that of expressivity. Language does not have a single and simple set of semantic structures, as it does not have a single function, and its system is not abstract and static. Aitchison (2001: 18) notes "the extraordinarily strong tendency of language to maintain and neaten its patterns". We have seen that it also has a strong tendency to elaborate its patterns – becoming more systematic as well as expressive – and develop new ones: §2.3.5 noted that the content-unit structure has developed in the last 500 years or so (Halliday 2000), constituting a system parallel to the syntactic-unit structure.

SPECIFIC CONCLUSION (3): CORRELATION BETWEEN OVER-RIDING FUNCTIONS AND STRUCTURE TYPES

According to Matthiessen (2004: §10.2.2.3), there is a close correlation between the main functions of language and the realisation structures discussed in §5 (i.e. hierarchy of particles, field, and wave). Those main functions are said to be not only ideational and interpersonal but also textual (to be discussed in Chapter 3, §2.1). The correlation is shown graphically in Table 2.8)(based on Matthiessen

2004: 554).

Table 2.8 Correlation between language functions and structure types

Main function	*Structure type*		
Ideational	*particle/hierarchy*		
Interpersonal		*field*	
Textual			*wave*

That neat correlation highlights a useful generalisation; but instances can be found for each of the empty cells, and, as will be shown in Chapter 3, the textual function should not be rated as a main one, but rather as a subordinate one, serving the other two.

SUMMARY OF SEMANTIC STRUCTURE, PRESENTED ANALYTICALLY

Seen analytically and traditionally, semantics has a structure of units. The simplest structures, holophrases and ideophones, have one or two units of expression but may carry several meanings that are not fully differentiated. Semantic relations consist basically of two "nodes" and the "link" that relates them; they combine into much more complex structures.

Those complex structures include networks of various kinds. In particular, there is the very large network of senses related to words, in the mental lexicon, and small-scale networks of senses and groups in a text. There are also hierarchies, such as those made by figures and their constituent groups and senses; they are not independent of the networks, but consist of particular nodes and links in them. We see a pattern of generality in that selection of nodes, and call it a hierarchy.

That relationship is represented in Diagrams 2.12 and 2.13. Diagram 2.12 depicts a semi-random selection of nodes from a mental network, seen as forming three levels, those of mammals, farm animals, and parent animals with their young. Each rectilinear shape represents a plane, seen from above and to the right; the lines show a few of the possible links; the diagram shows three mini-networks, linked into a larger network. Diagram 2.13 shows the same nodes,

without the planes; instead of the links shown in the previous diagram, it shows links that constitute a hierarchy of animal types. It is thus intended to show visually that hierarchies are patterns that can be detected in a network, and that can occur in mental processing of language and knowledge.

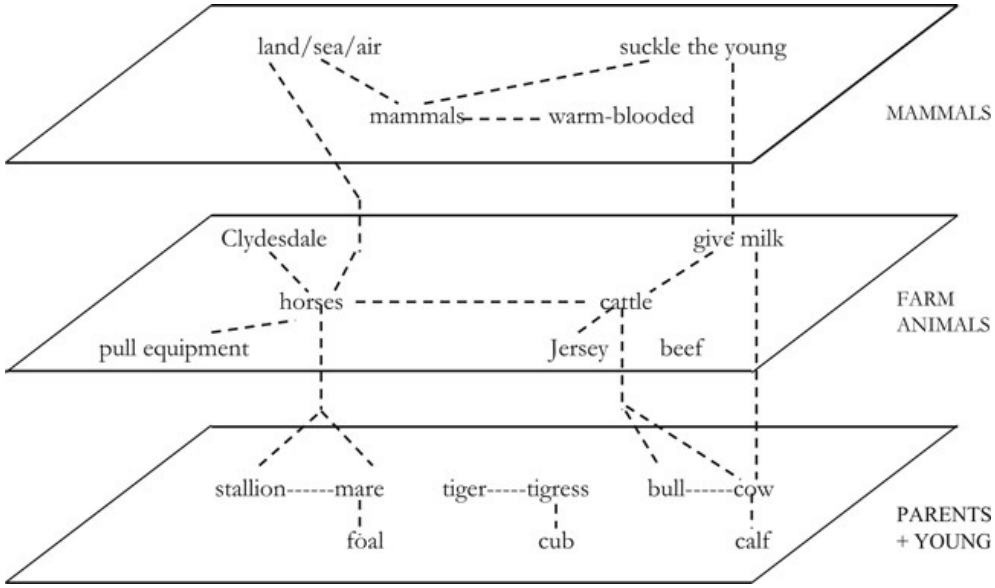


Diagram 2.12 Nodes as network (types of animal)

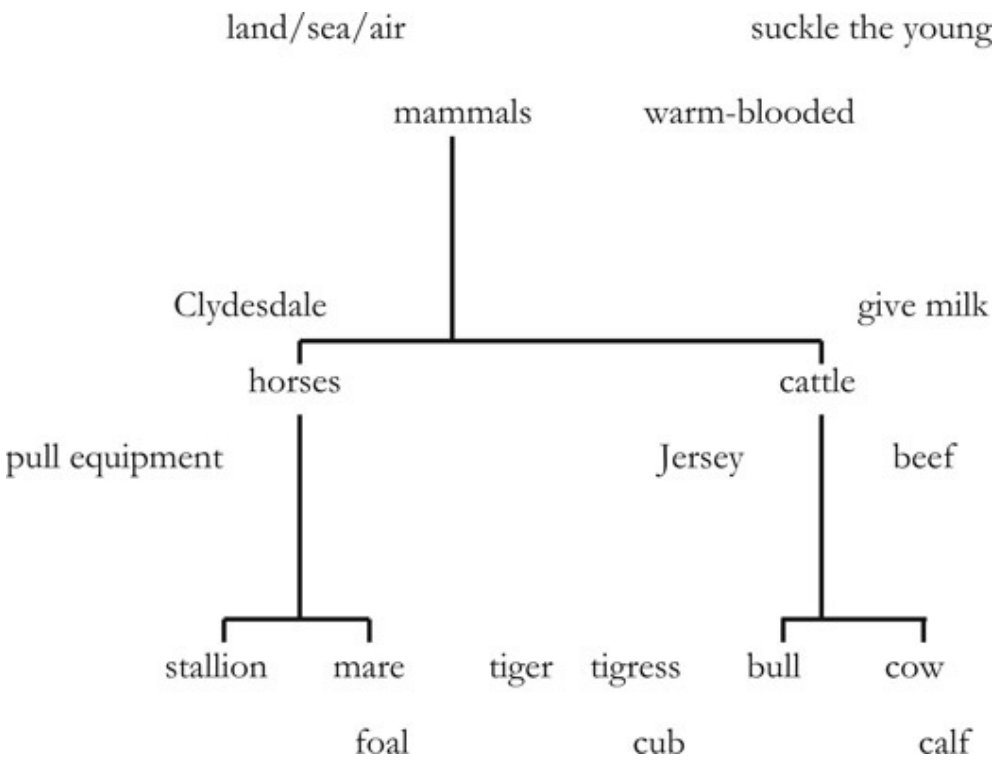


Diagram 2.13 Network nodes as hierarchy (types of animal)

Organising principles structure the hierarchies. The units are organised by dependency, as in the head-dependent relationship. They may be organised as a syntagm, as with Participant, Process, and Circumstance; the units in a syntagm are also members of paradigms, as with Actor/ Undergoer/Senser/Phenomenon (for Participant). Finally, the syntagms each have a standard rank in the hierarchy, but may be shifted to a higher or lower rank.

In the traditional analytic view, but less often recognised, there are structures that do not consist of units, but are patterns in a medium. We have seen two kinds. Semantic waves are realised by rise and fall in the spoken medium by voice pitch and stress and consist of rise and fall in meaning expressed, content relevance, or content importance. Semantic fields are "force fields" that spread out from particular senses, such as those of swear words, adding their force to the surrounding senses. Those structures will be amplified and explained more fully in the following chapters.

SUMMARY OF SEMANTIC STRUCTURE, PRESENTED FUNCTIONALLY

The analytic view just given is useful; but it is rather unreal, being removed from the fundamental nature of language, which is an activity, always carrying out a personal purpose in an interpersonal situation. Seen from that functional view, language is like any other human system, such as the nutrition system. For the speaker, the system input is intention and any message to be uttered; the process is the realisation of the utterance, through lexicalisation, syntacticisation, and so on; the output is the spoken or written text. (That describes the functioning linguistically; it may also be described psychologically and neurologically.)

FINAL COMMENT

Semantic structure as set out in this chapter is different in important ways from the structure usually described, since it has followed a strictly linguistic approach.

The usual approach has been heavily influenced by philosophy, describing the "terms" of logic, propositional structure, and inferences, for example. Even modern linguistic schools such as the "cognitive" approach have not seen semantic structure as truly linguistic, since they have in practice regarded meaning as basically, or even purely, knowledge (see Chapter 7, §2.5.8). This strictly linguistic view of semantics is perhaps the most fundamental characteristic of this theory.

Notes

1. *Economist*, 13 April 2019, p. 43.
2. That statement applies to English and many other languages, but not to some others. Japanese, for example, has nominal and adjectival groups as Predicators (Teruya 2004: 191).
3. Note that "happening" is being used to refer to the real world; "event" will denote our conceptualisation of happenings.
4. In Tagalog, however, semantic roles are distinguished linguistically, by infixes; *-um-*, for example, realises Actor, and *in*-realises Undergoer (Martin 2004: 258).
5. That meaning of "nominal" is the usual one, although its definition is seldom stated; indeed, its being distinct from "related to nouns" is the very reason for its existence.
6. *New Zealand Herald*, 28 April 2017, p. A20.
7. Note that the construal referred to is linguistic, rather than cognitive; it is not being asserted that speakers of ergative languages construe the world that way.
8. More precisely, those three premodifiers are all in the Descriptor slot, which will be described in §2.2.4.3.
9. British National Corpus.
10. British National Corpus.
11. British National Corpus.
12. For different conceptualisations of the same sense, see Chapter 6, §4.1.3.
13. "Nominals": they are usually nouns, but may be adjectives or participles, as shown in the examples that follow.
14. "Wood" uses the Function quale because it indicates 'for burning wood'.
15. *Al Jazeera News*, 29 April 2017.

16. British National Corpus.

17. The phrase is in an invented extension of the phrase cited previously.

18. *Economist*, 17 February 2007, p. 87; the phrase refers to an American celebrity of the time.

19. *New Zealand Herald*, 22 May 2017, p. A2.

20. Corpus of Contemporary American English.

21. The utterance was spoken. In the printed corpus, "door-knocked" is printed with a hyphen, as if it were one word; but the Corpus of Contemporary American English and the British National Corpus both have numerous examples spelled as separate words.

22. *New York Daily News*, 17 November 2017, at www.nydailynews.com.

23. Dow AgroSciences fact-sheet, at www.mafiadoc.com.

24. Given a definition at www.dictionary.com.

25. *New Zealand Herald*, 27 April 2018, p. A3.

26. They are sometimes used in utterances that do not make a regular sentence or intonation unit.

27. From "One longer day", *New Zealand Alpine Journal 2016*, p. 44.

28. The fact that pronouns used this way are a sign of Topic status is made clear by the relatively recent change in how the reference of pronouns works. Writing in the early 1890s, R. L. Stevenson began a new chapter about his hero, Archie, as follows: "Late the same night, … Archie was admitted into Lord Glenalmond's dining room, where he sat … beside three frugal coals of fire". To me and (I presume) to other modern readers, "he" refers to Archie (the Topic). Stevenson clearly assumed that the pronoun would refer to the immediately previous human referent, Lord Glenalmond; to us, Archie is said to be sitting beside the fire while he is being admitted.

29. British National Corpus.

30. *Economist*, 25 January 2014, p. 54.

31. Television New Zealand Channel 1, 6 p.m., 26 April 2018.

32. Note that the three forms used are precisely parallel; therefore, since the *of* and *–s* forms are genitives, the bare noun form must be a genitive also. It has been formed recently in English, in the language's never-ending quest for further expressivity. For full explanation, see Feist (2012), "What controls the 'genitive variation' in Present-Day English?" *Studies in Language, 36*(2) (pp. 261–299).

33. Givón (2001: §5.6.3), however, discusses it as "pragmatic" (which approximately means "to do with

discourse"), without making clear whether that is distinct from "semantic".

34. *New Zealand Herald*, 2 November 2020, p. A5.

35. Joseph Conrad, Nostromo, Part Second, Chapter 3, first paragraph.

36. British National Corpus.

37. *Economist*, 2 November 2016, p. 27.

38. I use "<…> hereafter to mark the SOED's numbered senses.

39. They are random examples, both taken from the preface to Du Bois and others (2003).

40. Cited by Elizabeth Couper-Kuhlen, *An Introduction to English Intonation* (London: Arnold), ch. X, §3.2.

41. British National Corpus.

42. Double and multiple negatives work this way – not logically, but as cumulative items building a field.

43. There is also the implication that what lies below the "surface structure" of syntax is meaning, not a "deep structure" that is also syntactic in nature, as held in the transformational-generative tradition.

44. I use the term "conceptual element" to avoid the misleading implications of "concept" applied to meanings, while acknowledging that these meaning elements are conceptual in nature.

45. "Marker" here is thus quite different from "marker" in generative linguistics.

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3

Senses (1)

Their Types of Meaning

DOI: 10.4324/9781003259381-3

1 Introduction

1.1 Coverage

This is the first of three chapters on senses. "Senses" are here taken to be the units making up the structures discussed in Chapter 2. They are not being defined as members of a strict category, since there is no strict borderline between senses and structures of senses (as we saw in Chapter 2, §4), or between senses and the elements that constitute them (as we will see in this chapter and the next). Often, what we think of as a link between nodes (i.e. senses) can itself be regarded as a sense. (In "That'll be two dollars, please", the implicit element 'cost' links 'that' and 'two dollars', but should perhaps be regarded as a node, as an elided sense.)

Chapter 2 made the convenient assumption that senses can be equated with "the meaning" of particular lexical words; this chapter gives up that assumption and shows why it is a simplification. (For example, one word can have many senses, and senses are carried by both idiomatic phrases and compositional phrases.) The chapter goes beyond Chapter 2 in other ways: it presents senses as

being more basic than the structures discussed there, both evolutionarily and functionally; senses are less distinct and more open to variation than the structures are.

The chapter deals primarily with the types of meaning that can constitute senses. The following chapters will deal with dimensions of meaning (which define the senses), the different uses that vary senses, and senses' internal structure.

1.2 Goals: What Is to Be Explained

As part of a theory, and therefore explanatory, this first chapter on senses must help explain the intuitive and traditional concept of sense relations, such as synonymy and antonymy, and the distinction between "content items" and "grammatical" or "functional" items. It must take a position on the controversy as to whether senses are units of knowledge (concepts) or linguistic units. The account of senses here should also throw light on how words change historically.

What needs to be explained in this chapter can be suggested – in a more thought-provoking way, I hope – by illustration. The following is part of a report of an interview with a leading American politician.

> "But if the issue is handed back to the States," noted [the interviewer], "some women won't be able to get an abortion anywhere near their homes."
>
> [The politician] responded with a shrug: "Yeah, well, they'll perhaps have to go … to another state."
>
> The interviewer sounded sceptical: "And that's OK?"
>
> "Well, we'll see what happens. It's got a long way to go, just so you understand." He repeated, for emphasis: "That has a long, long way to go."[1]

The reporter has put into words some elements of both speakers' meaning that are not in their words as printed, which is puzzling. For example: where was the scepticism in "And that's OK?" (The interviewer "sounded sceptical".) Where was the emphasis in "That has a long, long way to go"? (The reporter wrote, "for emphasis".) Was there a linguistic shrug, as well as a physical one? This chapter sets out to show the nature of such meanings, and how it is that the reporter

could grasp them as he or she heard the words, while we cannot, as we read them.

1.3 Outline of the Chapter

As noted previously, the chapter deals primarily with meaning type, as fundamental to senses. However, there are sense characteristics that must be set out first, since an understanding of them is needed for an understanding of the types. Accordingly, §2 will deal with those characteristics (with more characteristics to follow, in Chapter 4). The following sections will deal with the types of meaning in turn.

2 Characteristics of Senses

INTRODUCTORY NOTE

As just noted, there are several explanatory concepts to be used in the remainder of the chapter, most of which are additional to the concept of guiding principles used so far; they will be explained in this section. They are fairly independent, but have some links between them.

2.1 Functions

IDEATIONAL AND INTERPERSONAL FUNCTIONS

Senses, like other elements of language, serve a function. The functions of language were foreshadowed in Chapter 1. It was said that language may serve both speaker and hearer; that personal interaction will be called the "interpersonal function" (Halliday 2004). The other over-riding function is the familiar one of conveying knowledge – the "ideational function". They have not

been important so far but become directly relevant in this chapter, and we will need to consider various, more specific functions.

Within the interpersonal function, language can serve for humour, in various ways. That includes jocularity (American *absqualate* and *spondulix*), for example, and puns ("agony to the left of him, angst to the right of him; folly and blunder"[2] – = "volleyed and thundered"), and it includes Spoonerisms ("As the evening is clamp and dammy [= "damp and clammy"], the meeting will be halled in the hell [= "held in the hall"] below"). The function can be aesthetic, within a wide range that includes Shakespeare and modern poetry and American blacks' street talk (Abrams 1989). The types of meaning to be set out in this chapter have evolved to serve such functions. Indeed, many languages have fundamental grammatical structures that serve interpersonal functions: the imperative serves to induce hearers to obey, and the interrogative leads them to reply.

Some scholars classify the interpersonal functions; Jakobson (1960), for example, gives "poetic" function, "phatic" function (strengthening communal bonds), and "conative" function (inducing action). However, such terms, and even "interpersonal" itself, are loose, since there seems to be no linguistic basis for defining them strictly; moreover, it is reasonable to regard some of them as discourse functions, as Milroy (1992) does, not as linguistic functions. Foolen (2016: 473–474) lists various terms that have been used, without clear distinction: "affective", "emotive", "connotative", "involved", "subjective", and "*mode vécu*". I do not make any such finer distinctions categorically.

In the interpersonal function, then, we try to alter the state of the world in some way. We try to change our hearers, by making them laugh, or feel more comfortable with us, and so on. We try to change our environment by having the hearer carry out an action, such as closing the door, or buying our product. In the phatic subfunction, the interpersonal function goes further, in that it enacts the change.

The ideational function, by contrast, does not seek to change the world, but offers information about it. It goes by many names. Foolen (2016: 473–474) lists "propositional", "denotative", "informative", "conceptual", "descriptive", "truth-conditional", "objective", and "*mode pur*". There is even less value in sub-categorisation, here. (I will make comparable distinctions among types of meaning, however, later in the chapter.)

EXPRESSIVE FUNCTION

There is also one new function to be introduced, which I assert ranks with the ideational and interpersonal functions as basic, but which is so general and undifferentiated that it needs some discussion. It is the "Expressive" function – spelt with a capital E to distinguish it as a technical term. Considerable space is devoted to it here, because it is little noted and little understood.

The Expressive function is the direct vocalisation of affect, which is an undifferentiated emotive response to a situation. The function is seen most clearly in grunts of effort and cries of pain (which are usually not linguistic), and in involuntary exclamations of pleasure or amusement (which often are linguistic). Put more precisely, affect is the psychic state that exists on the dimensions of pleasure–displeasure, tension–relaxation, and calm–excitement. (See Matthews and others (2003: 89,) citing Wundt.) It includes the following: tension discharged in action or gesture (rather than expressed in language); generalised feeling, such as pleasure and dislike; and specific emotions, such as jealousy, envy, and resentment. Thus, the Expressive function is based not in cognition, as the ideational function is, but in a different "faculty" or "module" of the mind. (For further detail, see Feist 2016: §3.3.2.) It accords with the principle that language is human behaviour, being behaviour of a more basic kind than communicating information is; as the direct vocalisation of affect, the Expressive function in its pure form engages the phonological subsystem of language, but not the morphosyntactic subsystem.

As just noted, grunts and cries are sublinguistic; indeed, the Expressive function is significantly different from the ideational and interpersonal functions, since we use it for our own benefit, not for communication with a hearer. That also makes it distinct from being expressive (with a lowercase initial "e"), which is intended for a hearer.

The British National Corpus records a speaker suddenly exclaiming, "Look there's the chimney! [Pause] Phaw!", as he saw an alarming burst of smoke from a chimney. His companion said: "Oh, oh my goodness yes!" The "phaw" was Expressive; it represents something closer to language than a grunt, since it was transcribed with phonemes; the transcriber could perhaps have used *wow*. Other conventionalisations of such Expressive utterances include *ha-ha* for laughter and

poof for a contemptuous outburst of breath.

Note that all those instances are based on involuntary physical actions, which are incidentally converted into words; the use of such words as *horrible, nasty, nice* occurs in the interpersonal function, not in the Expressive function. It appears indirectly in informative language, when a speaker reports his own Expressive language: a woman said: "I was like really? Holy crap. Crazy".[3]

The Expressive function is developmentally prior to the interpersonal and ideational functions. That is clearly so with language development in children – their cries in the first months of life are Expressive. It seems to have been so in evolution also; as Hurford notes (2007: chapter 6), our knowledge of primate communication shows that utterances with descriptive content must have been based on utterances "descriptive of nothing outside the signaller" (2007: 173).

This function seldom appears in the linguistic literature, although it was recognised by Ogden and Richards (1923: 125), and by Wittgenstein, who noted that expression "escapes" from the speaker (as cited by Lascaratou 2007: 24). Foolen (2016) notes its acceptance by Volek in 1987, Kaplan in 1997, and Horn in 2013. It is supported directly also by Wray (2002: 64), and indirectly by Cruse (2011: §3.4.1), who notes that it has no truth value but can be valid as a representation of the speaker's state of mind. He compares such utterances to a cat's purr and a baby's cry. Wharton (2009) discusses it, describing it as "indexical" and "direct"; Wharton (2012), discusses the interjection "ugh", and the similar interjection that has become a standard word as *yucky*/*yuckier*/*yuckiest*.

The Expressive function is important in being distinct from the ideational and interpersonal functions; but there will not be much discussion of it in this book, because such utterances have no distinct senses and do not combine into larger semantic structures. It does, however, occasionally combine with other functions; interjections, for example, are sometimes used to convey feeling to the hearer, but with a parallel intention of being Expressive.

To sum up: the ideational function is oriented to content being conveyed, and the interpersonal function is oriented to the hearer or reader; but the Expressive function is oriented to the speaker.

METAFUNCTIONS

These over-riding functions (ideational, interpersonal, and Expressive) are "metafunctions", a term from Halliday (2004) and other writers using the Systemic Functional Grammar approach. In that system, there is no Expressive function, but there is a third metafunction, the "textual" one, which structures text and is roughly equivalent to "information structure". Including it at the top level of classification is a confusion, however, since the textual function serves ideation and interpersonality. Halliday himself makes that clear: "Language can effectively express ideational and interpersonal meanings only because it can create text" (1978: 130); that is, the textual function is a means to an end, subordinate to the metafunctions.

DISCUSSION: FUNCTIONS IN OTHER LANGUAGES

The reality of the ideational function is assumed in all the cross-linguistic literature I have read, just as it is in virtually all semantic theorising: it is taken explicitly or implicitly that language communicates information.

It is also clear from the cross-linguistic literature that interpersonal functions are spread across many languages of the world. Long ago, Malinowski (1930) noted the phatic function among the Trobriand Islanders. Kulick and Stroud (1990: 214) report that code-switching in particular has the functions of increasing drama, scoring points, and giving rhetorical power (in Gapun, a language of Papua New Guinea). Old English had casting spells as a function, (since many words were thought to carry magical power), and also the function of establishing social identity and status (though "flyting", the ritual exchange of insults); see Hughes (1991). The traditional emphasis on conveying information as "the function" (i.e. the unique or main function) seems to be biased by the Western cultural tradition. Brash (1971) records that Melanesian pidgin, on its way to becoming the creole, Tok Pisin,[4] developed several varieties: an imaginative one, tok piksa ("talk picture"); a playful one, tok pilay ("talk play"); and a deliberately elaborate one for disguising what you were saying, tok bokis, ("talk bookish"). Each variety served a distinct function, and the functions became differentiated very early in the history of the language.

2.2 Aspects of Meaning

INTRODUCTION

The structure of a house is often represented from three points of view: from the front and from the side, as two elevations, and from the top as a plan. The views or "aspects" are complementary, all needed for a complete understanding. Similarly, meaning has three complementary aspects: the speaker aspect (the meaning that the speaker intends, consciously or unconsciously), the hearer aspect (the meaning as understood), and the aspect of the language system (the meaning defined by the conventions of how words and so on represent meaning). The system meaning mediates between speaker and hearer, since both rely on it; it conforms to the rules of the language used. The three aspects arise from the principle that language is necessarily a human activity of speaker and hearer.

SPEAKER ASPECT

Speaker aspect, or "speaker meaning", is generally the intended meaning, especially if it contrasts with what the hearer takes to be the meaning. That commonly applies with ambiguity, as when a speaker refers to "a rescue dog", intending 'a dog who has been rescued from abuse', but the hearer understands 'a dog used for rescuing people'. However, it also includes what the speaker expresses unintentionally. For example, a speaker trying to suppress irritation and speak calmly may speak calm words but express the irritation through intonation. There is also sometimes "meaning" which the speaker has in mind but does not verbalise, intending the hearer to grasp it from implication or innuendo. That is often what I have distinguished from linguistic meaning, as pragmatic meaning.

SYSTEM ASPECT

System aspect, or "system meaning", is meaning according to the system of the language – according to its lexicon and grammar. It mediates between speaker

and hearer: both believe they are using it; they appeal to it when there is misunderstanding ("Don't you mean 'immoral', not 'amoral'?"). The system meaning of an utterance is an abstraction, however, not a reality. It is what linguists can formulate by applying the grammar of the language (where "grammar" includes lexicon, morphosyntax, and phonology).

HEARER ASPECT

The hearers may extend the speaker's meaning by adding detail such as personal associations and their unique knowledge of a referent (as when a speaker refers to "your neighbour"). In some circumstances, they should extend it. For example, they should not just comprehend the speaker's "speech acts" but respond to them, as in actually answering a question. The hearer should also expand elliptical statements, where part of the speaker's meaning is simply not represented in the utterance. Use of a proper noun commonly needs the hearer to bring to mind general knowledge of the referent; definite references such as "the sun" and "the current epidemic" also call on non-linguistic knowledge. There is an important distinction, then, between "meaning" that hearers derive from the words used and "meaning" they derive from knowledge outside language. (The role of general knowledge in meaning needs amplification; discussion is given later, in §2.4.)

SUPPORT

The traditional distinction between "sentence meaning" and "utterance meaning" fits the distinctions made here, since an utterance differs from a sentence in having a speaker function; see for example Levinson (1995: 91) and Croft (2010: §4.3). There is more direct support from Leech (1974: 24), who supports this threefold distinction, in different terms. So does Geeraerts (2016: §1.2, §2.2), with "systemic meaning", and with the distinction of conventional meaning from occasional meaning, and of stored meaning from derived meaning. Hsu and others (2015) provide neurolinguistic support, dividing the first phase in two.

DISCUSSION: ASPECT CROSS-LINGUISTICALLY

The concept of aspects of meaning applies necessarily across languages, since all languages are used between a speaker and a hearer and have a system the participants use. However, it seems likely that relatively simple languages, such as Riau Indonesian (see Gil 2000, 2005), have less to be explained through the concept.

2.3 Levels of Meaning

Chapter 2, §5, described the instantiation or "realisation" of the intention to speak as occurring in three stages, namely the formulation of semantics, of morphosyntax, and of phonology – which correspond to the standard branches of grammar (in its wide sense) and are commonly termed "strata" or "levels".

The meaning realised in each stratum is not exactly the same as the meaning in the stratum below it; successive strata bring development of the meaning. For example, the constructions of the morphosyntactic level carry meaning not in the words as units; the phonological level often carries feeling not in the words or syntax. (See Chapter 6, §3, for detail.)

(Note on terms: "levels" here is roughly synonymous with "strata". I use "strata", as a strict term, including the concepts of relative autonomy of the lexicon, morphosyntax and phonology. I use "levels" somewhat loosely, to allow for occasional distinction between morphology and syntax, to include the concepts of realisation from level to level, and to allow for the inchoate meaning that lies below the lexicon.)

2.4 Areas of Meaning

INTRODUCTION

The relationship between meaning and knowledge is important and controversial in current semantics; it has a specific section in Chapter 6 devoted to it. However,

the issue cannot be avoided in the meantime, so I will here make a basic distinction between cognitive and linguistic meaning, as "areas of meaning". The two "areas" may be distinguished, but frequently "overlap"; and "meaning" is to be taken broadly, including grammatical, emotive, and social significance of language, as well as the conceptual elements of word meaning. *The prime minister* and *the moon* are generally used for cognitive meaning; *very, awfully*, and *there* are generally used for linguistic meaning. Elegant, in "She appeared in an elegant gown", uses both areas.

The distinction resembles the distinction between representation and expression in painting. Painters may aim simply at a representation of a scene, as most photographers do. However, they may adjust colour, composition, and so on to express a visual impression, or a feeling, or conformity to a traditional style, while also representing the scene identifi-ably. Speakers likewise often aim at some form of linguistic "expression", as well as at cognitive "representation".

LINGUISTIC EXPLANATION OF COGNITIVE AND LINGUISTIC AREAS

The distinction being made is as follows. First, cognitive meaning is any knowledge expressed in language, knowledge being perception of fact or truth; linguistic meaning is any meaning beyond that, including personal shaping of the knowledge, grammatical meaning, and personal and social meaning (to be explained in the rest of the chapter). Second, linguistic meaning is the meaning of the linguistic signs; often, hearers will bring to mind concepts and so on that are associated with the sign's meaning but not represented by the sign itself.

For example, according to Fawcett (1987: 134), the utterance "Give generously!" includes, as "covert" elements, the people who give, the thing given, and the receiver. Those elements are cognitive meaning, not linguistic. (The giver and the given are sometimes thought of as part of the "frame" for the meaning, rather than as part of the meaning; but a person hearing an utterance of "Give generously!" must conceptualise himself or herself, the intended giver, as part of the meaning.) Note that the hearer will understand the 'give' and 'generous' elements immediately, in a first phase of grasping the meaning; they are the "face

value" or "surface meaning" of the sentence – linguistic meaning. The covert cognitive elements ('people', 'thing given' and 'receiver') are grasped in a second phase, as cognitive meaning.

For a further illustration of the distinction, consider the following. An 8-year-old boy said to his 2-year-old brother, in the high voice and exaggerated intonation of talking to babies, "Here, Joey, take this to the kitchen. Take it to the kitchen". A little while later, he said to his 4-year-old brother, in adult voice and intonation, "Hey, Rick, take this to the kitchen, please". (The examples are from Gleason 1973: 165–166.) There were major differences in the significance of the two utterances: the first set up an adult–child relationship; through voice and intonation, it expressed encouragement (which does not appear in the wording); and it gave a command. The second utterance contrasted with it in all those respects; linguistically, it was quite different (while using the same knowledge about taking things somewhere, and about kitchens), since it had different linguistic significance, and conveys its significance by different linguistic means. However, the two utterances had the same cognitive meaning; in this instance, it was overt – 'taking', 'to', and 'kitchen'.

The linguistic means just referred to consist of linguistic signs. They are signs such as words, which have a conventionally established association between the sign and certain mental content, the association being accepted by the language community as a whole, and being relatively long-term. The meaning thus established as linguistic is not necessarily used by all the community – slang meanings, for example – but no one would deny it to be a meaning in the language. 'Element number two' is associated with *helium* and 'element number 10' is associated with *neon* by many scientists, but the associations are not established as standard in the community as a whole, and should not be rated as meaning of the words.

The linguistic means, moreover, are means that are established in the language grammatically. That is, they are established by patterns of linguistic choice (in any level of language, not only in "grammar" as morphosyntax). That applies, obviously, to syntactic and phonological options, but it applies also to lexis. Grammatically, we have a choice between *potash* and *potassium carbonate*; but there is no choice – no alternative – for *neon* and *helium*.

Personally, I would like to exclude the difference between *helium* and *neon*

from semantics altogether, taking semantics as a branch of linguistics, with their difference in conceptual content being a matter of knowledge (the difference between helium and neon being science). However, difference in content is so well established as a matter of "semantics" that I am making the compromise of treating the two as both "areas" of meaning – "linguistic" and "cognitive" areas.

PSYCHOLOGICAL EXPLANATION OF AREAS OF MEANING

Gentner and Boroditsky (2001) contrast "cognitive dominance" and "linguistic dominance". They point out that children, when they begin to learn words, already have some concepts, notably for the physical objects they keep experiencing, such as furniture and toys. Those objects are easy to conceptualise, because they have physical outlines, and mostly move against the visual background. The first words that children learn are thus learned as names for those objects. The learning is based on the children's existing cognition; that is, the learning is subject to "cognitive dominance". (The point is made in varying terms by many scholars; see especially Karmiloff-Smith 1992, and also Papafragou 2005 and Traugott and Dasher 2002: 7, for example.)

Words like *finger* and *hand*, distinct from *arm*, are harder to learn, as are colour words such as *scarlet* and *crimson*. Learning them requires learning the other words in the set, in order to make the necessary distinctions. Learning the words is now partly dependent on other language learning. Verbs are in general harder still, since boundaries of Events are in time, not space, and not perceptible. Learning from words and learning from experience are perhaps now equally influential. Many adjectives are more difficult still, being abstract, or matters of degree, or including subjective emotive or attitudinal elements; they are closer to the linguistic end of the dominance spectrum. Complete linguistic dominance of language learning occurs with grammatical words such as the articles and auxiliary verbs; it has often been said that such words take their meaning from their place in their paradigm, not from cognitive reality. We can note in passing that the function of word meaning is not simply "to categorise the world into labelled classes" (Hampton 2016: 128).

APPLICATION OF "AREAS OF MEANING"

Gentner and Boroditsky designed the scale of dominance to describe language learning, but it is also relevant to our semantic analysis, and in some additional ways. First, the elements in the senses of *obscure, abstruse*, and *recondite* are cognitive individually; it is the selection or combination of elements that is linguistic. *Serendipity* takes that further: it is remote from any standard cognitive category.

Second, in comprehension, the face value of a word or phrase is sometimes a linguistic meaning that we must reconstrue, producing a different cognitive meaning. A news report[5] said, "All of the houses struggled to meet their reserves at auction". Houses cannot struggle; we reconstrue the sentence to mean "The houses mostly did not meet their reserves". Later, the report had "a surprise twist saw the house put back up for sale"; the linguistic meaning of *saw* has to change, to match the cognitive one. Typically, the first phase in hearer meaning (in comprehension) is linguistic, and the second is cognitive.

A final element is that cognitive dominance suits the ideational meta-function, and such secondary intentions as being simple or clear; linguistic dominance suits the interpersonal metafunction, and intentions to be evocative or persuasive, for example.

SUPPORTING VIEWS

The linguistic/cognitive distinction has support of various kinds, often in other terms, as with discussion of "the encyclopaedia" and "the dictionary", and McCawley's "linguistic competence" and "factual knowledge" (1968: 129). The distinction is essentially the same as that between the two "levels" of Bierwisch and Schreuder (1992, for example) and their school of semantics. Psycholinguistically, Karmiloff-Smith (1992: 18–19) supports it indirectly, in showing that "mental representations" (including concepts and meanings) develop from focusing on the external data of sensation, through focusing on internal data, to co-ordinating both sources; integrating both sources characterises the middle of the linguistic dominance scale. Barsalou (2012: 252)

describes distinct linguistic and cognitive processing systems; Barsalou and others (2008) shows neuro-linguistically that in interpreting a word or phrase the linguistic system works faster and is largely complete while the cognitive system is still working. It is now widely accepted that concepts are developed in one of two ways: (1) they are developed through interaction with the world, linked to words ("lexicalised") later; (2) they are first developed partially through acquaintance with language, being completed (that is, related to knowledge of the world) later. See Connell (2019) and references there.

DISCUSSION: AREAS OF MEANING CROSS-LINGUISTICALLY

If we accept that the cognitive principles and support set out earlier are universal, then it will follow that areas of meaning apply widely in the world's languages. The well-known differences among the systems of basic colour terms in the languages of the world provide a clear example. Since people with only two or three terms in their system can nevertheless distinguish many colours perceptually, the meanings of the terms do not correspond to their perceptual knowledge, being construals from, not replicas of, it. The difficulties of translation provide many other examples: English *wood, forest, copse*, and so on have variable equivalents in other languages; see Geeraerts and others (1994), for example.

CONCLUSION

The distinction between cognitive and linguistic areas of meaning can be stated sharply. Cognitive meaning is drawn directly from knowledge of the non-linguistic world. Linguistic meaning frequently draws on such knowledge, but indirectly (adding to it or reconstructing it); it is sometimes quite independent of it. This distinction is a more precise version of the common distinction between "encyclopaedia" and "dictionary". However, the distinction is not absolute, for reasons which will become clearer later in the book, in the psycholinguistic discussion of how concepts are formed. Many senses combine the two types; those senses will often be referred to as occurring in an "overlap area".

2.5 Types of Meaning

2.5.1 General Introduction

The basis for distinguishing types of meaning is clear, intuitively. We feel that there is an important difference between emotive words like *terrific* and factual words like *steel* and *blue*. This section develops that distinction, and others like it. In describing senses as consisting of different types of meaning, it deals mostly with the senses of words, but the distinctions apply to senses embodied in groups and figures, as well. For example, "a deep sky blue" has the same type of meaning as "blue"; and "What a terrible thing!" has the same type of meaning as "Terrible!" Note that two or three types of meaning can occur together in the sense of a word; this section is classifying types of meaning, not classifying senses or words.

In using historical change as an illustration of main points, the section will incidentally explain an important part of how meaning changes historically. It follows the phenomenological principle: the examples cited will show that the different types of meaning are phenomena to be observed in the speech around us, wherever we are.

2.5.2 Content and Grammatical Meaning

INTRODUCTION

The traditional distinction between "function words" (or "function items" or "grammatical words") and "content words" (or "content items") is badly thought out and confusing, as the lack of agreement on terms suggests. This section argues that the confusion is to be resolved partly by remembering that we are discussing senses rather than words or morphemes, and chiefly by acknowledging that the differences are in meaning, and in kind of meaning.

Part of the problem has been that many words have content as well as being "grammatical". Thus, the prepositions in "on the table" and "under the table" have the content meaning of position, as well as being functional in relating the

following noun phrase to the previous one. Accordingly, many linguists have revised the distinction as being between "open" and "closed" classes. That creates a different problem, since there is still an overlap: some words belong in both classes, and grammaticalisation studies show that languages do add "closed-class" items, which develop gradually from "open-class" ones. The solution is simple: see the distinction as being between meaning types – content meaning and grammatical meaning – following the principle of treating words as functional, and as signs carrying meaning. The problems then disappear, since a sign can carry two types of meaning at once. That conflation of meaning and function will seem strange to many readers; the justification for it – and the value of it – will become clearer in the following sections.

CONTENT

The "content" of an utterance is what it conveys, but precise definition of the word is difficult, and there is no consensus on it (see Yalcin 2014, which gives some discussion). I will clarify what I mean by "content" through a double distinction.

The first distinction is between naming (the use of proper nouns and similar uses of common nouns), pointing (the use of pronouns and other pro-forms to refer to other words or phrases in the context, and the use of deictics), and describing. Of those three "semiotic strategies" for identifying what you are referring to (Cruse 2011: §16.2.3), describing has content, but the others do not. The second distinction is between content as a kind of meaning and grammatical meaning as another kind; content and meaning are not to be equated. Grammatical meaning is meaning that operates on content meaning; it modifies the content, or shows hearers how the content meanings are to be related to each other. (Grammatical meaning and signs will be treated fully in later sections.)

Content is usually taken, implicitly or explicitly, as consisting of conceptual information. However, if we follow the phenomenological principle and consider what we read and hear every day, we quickly see the falsity of that assumption. My morning paper has a letter to the editor that says: "Thanks to armchair warriors taken in by Hager's muck-stirring book, it now looks as if we are to

have an enquiry, costing millions, to produce a finding we already know".[6] That contains some descriptive information (about the book and the cost of the enquiry), but it also contains a good deal of disapproval and sarcastic emotion. It also sets up a delicate balance between the formality expected in print (beginning with a complex subordinate clause, for example) and informality (*we*, and forceful feeling). The letter contains description, attitude, emotion, and social significance; they are all types of content. Following sections will elaborate them as types of meaning.

GRAMMATICAL MEANING

As just introduced, grammatical meaning is meaning that shows hearers how the content is to be related. Comparing grammatical meanings with the significance of mathematical operators is helpful. In mathematics, the meaning of operator signs (e.g. "+" and "–") is that an operation must be performed on meanings of the other type of sign ("1", "2", "3", and so on). In language, grammatical meanings are those that operate on content meanings. Thus, inflections operate on the stem, making the referent plural, or the verb's tense past, for example; modifiers operate on their headwords; prepositions and conjunctions operate on the groups or clauses they link. Calling this "meaning" extends common use of that word; "significance" will be more apt, to many readers.

WHAT IS EXPLAINED

The distinction between content meaning and functional meaning as operation-on-content explains the old confusion about "content" and "grammatical" items, and "open" and "closed" classes. The distinction is to be made between types of meaning, not between types of word (or "item"), nor between being open and being closed to new members. As noted in the introduction, with "on" and "under", words may carry both types of meaning; so we cannot sensibly talk of content and grammatical classes of word. The distinction also shows that we do not need "prototypes" here (classes having a gradient between them, with no clear-cut distinction), as even such recent writers as Corver and van Riemsdijk

assert (2001: 10). The distinction between content and grammatical meaning is clear-cut. Similarly, the content/grammatical distinction explains the categorematic/ syncategorematic distinction more simply.

TYPES OF CONTENT AND THEIR RELATIVE INDEPENDENCE

Types of content meaning are implicit in linguistic accounts of semantic change. For example, *knave* and *churl* have undergone "pejoration"; that is, while the respective conceptual meanings of 'young man' and 'man' have remained, the feeling and the attitude the words express has changed. Put in the terms to be used here, the descriptive type of meaning has remained unchanged, while emotive and attitudinal types of meaning have been added.

A word history will illustrate the nature of meaning types more thoroughly. The adjective *capital* was first used in English in the Middle English period, with the sense, "Of or pertaining to the head or top" (sense <1> in the SOED 2002). That sense is descriptive, and concrete. It developed in Later Middle English to "Standing at the head". At first, that was used literally, also with a concrete sense. It was soon used figuratively as well, with the descriptive sense becoming abstract, as <3> "Chief, principal". That sense broadened, so that <3> came to have "Important, leading" as a subsense. Things that were regarded as important or leading were also regarded with an approving attitude; that attitude was so regularly associated with use of the word *capital* that it became part of the meaning (probably by the 16th century), as an additional "layer", which was normally evoked as part of sense <3>, but was dependent on context. That approval evidently became gradually stronger, until it led to a further layer, the emotion of admiration. In the 18th century, then, the word had sense <6>, "Excellent", consisting of approving attitude, and admiring emotion, in addition to the descriptive element 'extremely good'. Meanwhile, the word was also used so freely and loosely that in many uses it was empty of descriptive meaning; the attitude and emotion constituted the whole meaning. It was then used (probably by the 18th century) as a colloquial interjection – "Capital!" – thus acquiring a further layer of significance or "meaning"; as colloquial, it had the social value of establishing informality between speaker and hearer. The SOED includes that in

<6>, as “Freq. as an exclam[ation] of approval. *Colloq.*”. (It should be entered as a distinct sense, but the dictionary does not recognise emotion and being colloquial as part of meaning.) Earlier senses continued in use, of course; and, as a sense changed gradually, the word must have been ambivalent between the older sense and the new one. In that history, wesee four layers or types of meaning, which are independent enough to develop separately, and to survive while others disappear.

The development of those layers of meaning is shown in Diagram 3.1. Across the bottom, it shows the relevant meanings of *capital*, as just described, in historical order. Each sense is represented as a column of boxes representing the layers of meaning, making a kind of bar graph for each sense. Thus, the first sense shown has only descriptive meaning (‘very good’), and the second has the additional layer of approval, as attitudinal meaning. In the last sense (the use of *capital* as a colloquial exclamation), there is no descriptive meaning. (The descriptive meanings in the boxes are paraphrases. “[i] and “[ii]” distinguish subsenses.)

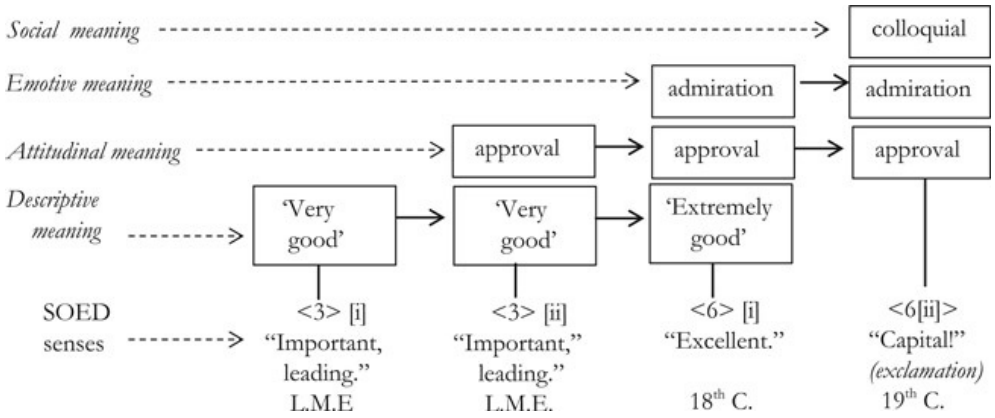


Diagram 3.1 Development of layers of meaning in *capital*

DISCUSSION

The discussion of *capital* shows incidentally the relation of meaning types to areas of meaning. As with very many words, *capital* began with cognitive descriptive meaning, concrete first and then abstract. In sense <3>, ‘important, leading’, it added evaluation (which is subjective), beginning to move away from

cognitive meaning. Sense <6>, 'Excellent!', is largely linguistic: its emotive value, its function as an interjection (grammatical meaning), and its connotation of speaking colloquially all go with that specific word in the English language, not being part of our knowledge of standing at the head, or being principal. (The following sections should make that clearer.)

GENERAL SUPPORT

A substantial amount of the linguistic work done in Britain in the later part of the 20th century, especially in stylistics, assumes that there are types of meaning. Examples include Crystal (1965), Crystal and Davy (1969), and Leech (1974). The last mentioned described seven types of meaning, differing from what will be given here, but based on the same understanding of meaning. The fullest support is in Cruse (2011), which provides the basis for the typology used here, except that his understanding of grammatical meaning is very different from mine. In the cognitive grammar tradition, Langacker (2008: 30) says that meaning encompasses "any facet of mental experience". He notes three types: "novel and established conceptions", which are "intellectual"; "sensory, motor and emotive experience"; and "apprehension of the physical, linguistic, social and cultural context".

3 Content Meaning (1): Descriptive Meaning

3.1 Characterisation of Descriptive Meaning

Descriptive meaning is what is conveyed about the situation the utterance refers to. It is "descriptive" in the SOED's sense <2>: "not expressing feelings or valuation". Examples are the senses of the underlined words in the following news report: "Other schools in the area are struggling to cope. One school had to move off its previous site". ("Other", "in", and "one" have grammatical meaning as well.)

As a type of content meaning, descriptive meaning arises from perception and the wider faculty of cognition. In that, it is distinct from emotive, attitudinal, and social meaning (discussed in the following sections), which arise from different faculties. The differences can be illustrated as follows: descriptive meaning distinguishes *horse* from *stallion* and *foal*, but does not distinguish *horse* from *nag, steed*, and *gee-gee*, which share the descriptive meaning of *horse* but have attitudinal or social meaning as well. (I will use words related to *horse* repeatedly, so that we build up a full analysis of the sense structure of a single set of words.)

Descriptive meaning is the sort of meaning that determines whether a statement can be judged true or false, as exclamations and emotive statements such as "It's horrible!" cannot. It can be negated and questioned. Descriptive meaning is objective in being not simply an expression of the speaker's state, as emotive and attitudinal meaning are; and it is "displaced" in having relevance outside the immediate speech situation – deictics, pronouns such as *it*, and the speaker's feeling are not displaced. (See Cruse 2011: §10.2, and Lyons 1977: 50–51.) In being displaced, it is far less subject to the principle of situatedness than emotive and attitudinal meanings are; conversely, it is highly subject to intentionality – it usually embodies the speaker's primary intention. Since descriptive meaning constitutes information, it serves the ideational function.

Descriptive meaning includes the "proposition" expressed and the "conceptual meaning", studied in traditional semantics; indeed, it constitutes the whole of what has usually been referred to as "meaning". With reference to more recent work, it includes frames and scenarios, and the combinatorial approach (Koptjevskaya-Tamm and others 2016), perceptual elements, and image schemas (e.g. Barsalou 1999).

3.2 Support for Descriptive Meaning

Schreuder and Flores d'Arcais (1989) give psycholinguistic support for the psychological reality of descriptive meaning, describing the structure of a descriptive sense as follows. The sense of *coffee*, for example, has three parts. A central mental node is simply the mind's access point for the word, without content. Perceptual content nodes represent colour, taste, and so on; they are

activated when we read such a sentence as, "I'm woken up gently with a strong cup of black coffee" (British National Corpus). Third, there are conceptual content nodes for such information as the object's origin and usefulness; they are activated when we read a sentence like, "Toward the north …, you see exotic banana plants, pine forests and coffee plantations" (British National Corpus). The perceptual nodes, then, correspond approximately to concrete sense elements, and the conceptual nodes correspond to abstract elements; the two together make up descriptive meaning. (That account will be amplified later.)

The account given by Schreuder and Flores d'Arcais emphasises the basis of descriptive meaning in experience, which is construed into concrete meaning, and then abstract meaning. That is supported by Barsalou: "The semantics of natural language are closely related to the human conceptual system. Although lexical meanings are not identical to concepts, the two have much in common and influence each other extensively" (2012: 244); and concepts are abstractions from percepts (2005).

Pulvermüller (1999) and Fortescue (2009) support that neurolinguistically. Pulvermüller reports that abstract and concrete words are represented differently in the brain; words for visual and action meanings are instantiated by neurons in the visual and motor parts of the cortex; for example. Pulvermüller (2002: 89) gives processing evidence: generic words such as *animal* have slower response times than concrete ones such as *doe*. Fortescue (2009) ascribes that difference to the structure of the bundles of neurons whose activation constitutes a word's sense, since concrete qualities are linked to "affordances" lower on each bundle. Zaidel and others (1988: 72) report that the left hemisphere is better at abstract and function words than the right hemisphere is.

3.3 Realisation of Descriptive Meaning

Descriptive meaning is sometimes realised in strata other than lexis. It occurs morphologically in derivational prefixes such as *pro-* and *contra-, centi-* and *mega-*. Even inflectional affixes may contain a descriptive element, although they are often taken to be simply grammatical. For example: the *–es* suffix in "fashionable dresses" signifies plurality, and PLURALITY is a descriptive concept.

Similarly, there are concepts in the significance of syntactic structure. Transitivity entails the concepts of agency and affectedness; and since transitivity is a quality of the whole clause, it is syntax that carries those concepts.

Realisation of descriptive meaning in specific words is affected by context. With *nice*, the descriptive meaning 'hard to please' will be activated for the 17th-century use, "The mind … becomes … nice and fastidious" (British National Corpus); but for modern uses such as "Have a nice today" (British National Corpus), no descriptive meaning will be activated – only some affective meaning, as discussed in later sections.

3.4 Descriptive Meaning: Discussion and Conclusion

CONCRETE AND ABSTRACT FORMS OF DESCRIPTIVE MEANING

The distinction between concrete and abstract meanings is a matter of degree, and its nature is primarily psychological, but it has some noteworthy linguistic importance. We can often construe what we want to say abstractly or concretely, so we have semantic alternatives. A firm that hired machinery, for example, reported to investors that it had:

> Significant in-house repair and maintenance capability providing … the ability to refurbish certain equipment, extending the life of the hire fleet in a more cost-effective manner than outright replacement.

More concretely, it could have said:

> We repair and maintain equipment ourselves … keeping our machinery going more cheaply than replacing it.

The abstract version blurs the meaning intended. But skilful mixture of abstract senses with concrete ones can enhance meaning. A tornado-hunter suddenly felt that his tornado was hunting him, and reported: "I could feel a really dark

pressure on the back of my neck and spine. It was the sensation of death perched on my shoulder".[7]

REFERENCE

It will be clear from what has been said that descriptive meaning arises from perception and other mental processes; it does not derive directly from things in the external world, and that derivation by reconstrual goes through several stages. There is therefore no way for it to have a direct correlation with things in the world. Reference, as direct correlation with external reality, is inconsistent with the assumption that our semantic theory must be psychologically credible (Chapter 1, §5). "Reference" and "referent" will be used here only as loose terms, relating to mental content, and equivalent to "denotation". For that reason, and because the abstract and the concrete are not clearly distinct (as just noted), "referents" may include 'the race' and 'whiteness', both regarded as "things", whether or not we regard them as happenings or qualities in reality. The relation of meaning to reality, like the relation of knowledge to reality, is a matter for philosophy, rather than linguistics. (However, since it has been important in traditional semantics, discussion will be given in Chapter 6.)

It is worth noting one less important point about "reference". Theories in the philosophical tradition assumed that reality consisted of things, not of happenings or qualities; talking about the world was talking about things (abstract or physical). The linguistic units that made reference were therefore always nouns or nominal phrases. English, as language, subverts that; what it takes as experienced reality, and worth talking about, are not always "things". For instance, a newspaper report said, "There were a few sunburnt faces over the weekend, after the sun's rays caught some people off guard". The focused information in the first clause is 'over the weekend', which is an abstraction; the focus of the second clause is being off guard, which is even more remote from being "real".

ONOMASIOLOGY

Descriptive meaning dominates the field of onomasiology, which studies how things and events are represented in words, where semasiology studies how words mean things and events – most of traditional "semantics". Onomasiology might study, for example, whether a garment that some would call a "t-shirt" would be given a different name if it had long sleeves, or if it had a collar. Also, it might consider whether other languages are like English, in including both 'wood' (as a substance) and 'small forest', in the one word, as English does, in *wood*.

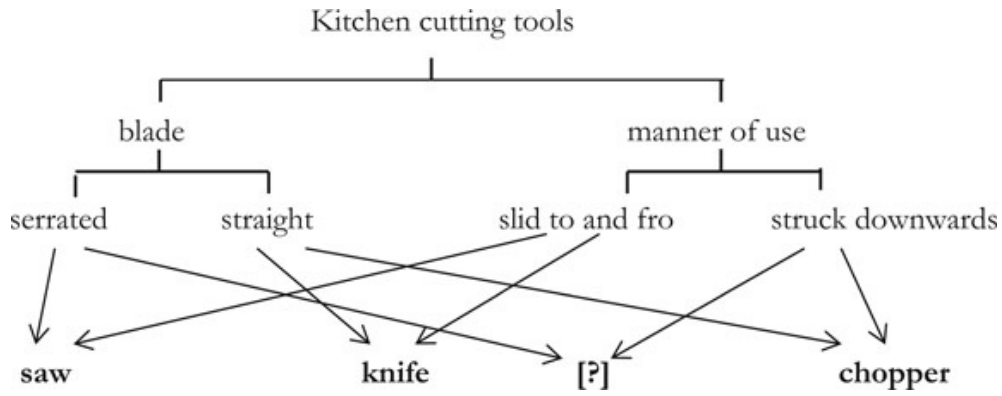


Diagram 3.2 Onomasiology of some kitchen tools

Diagram 3.2 illustrates another application of onomasiology. It relates how some of the cognitive elements that underlie names for kitchen tools relate to the English terms for them. It shows, for example, how *saw*, as 'tool with a serrated blade, used by sliding it to and fro' relates to *knife*. It shows, further, an example of a lexical gap: English has no word for a serrated chopping tool.

For extensive treatment of onomasiology, see, for example, Geeraerts and others (1994). It deals so much with cognitive meaning that it falls outside the scope of this book; it will be touched on briefly in the later section on the relation between meaning and knowledge.

PROPER NAMES

As noted earlier, naming is an alternative to description, as a method of identifying a referent. For example, the name, "Winston Churchill", is an alternative to the description, "the Prime Minister of the United Kingdom during

World War II". *Winston Churchill* thus has no descriptive meaning, in system meaning at least (§2.3). In hearer meaning, the name could include descriptive details such as the man's height and appearance; they are part of knowledge, rather than of language.

Denying that names have descriptive meaning seems to leave them linguistically meaningless, since they certainly do not carry any other kind of content or a grammatical meaning; yet they do have significance, as words. The resolution of the dilemma lies in the analysis given by Schreuder and Flores d'Arcais (1989), explained earlier in §3.2. Names have the minimal node, but not the perceptual or conceptual elements. That node acts as an access point: in the hearer's mind, it is activated by the name; it then activates whatever elements of knowledge are relevant to the context; *Amazon* might activate 'longest river in the world' or 'region of tropical forest'.

Part of the value of the distinction (between the access nodes and the meaningful perceptual and conceptual nodes) is that it resolves the old controversy about how names can seem "meaningful" without having a meaning that can be identified as linguistic. An alternative but less satisfactory resolution of the controversy is to say that there is nothing descriptive in the system meaning, but that there may be in the hearer and speaker meaning. (A slightly better alternative, given by Smith 2009: 65, is to say that proper names have "onomastic meaning"; for instance, when the descriptive expression "the Cam bridge" (i.e. the bridge over the river Cam) became the name "Cambridge", it lost its existing normal meaning, but gained onomastic meaning.)

CONCLUSION

In summary: descriptive meaning is closely related to cognition; it is conceptual in nature, ranging from concrete (close to perception) to abstract; it is primarily responsible for reference.

4 Content Meaning (2): Emotive Meaning

4.1 Characterisation: Emotive Meaning

GENERAL CHARACTERISATION

Emotive meaning is what the utterance conveys of some emotion the speaker is feeling, especially of some basic emotion. Basic emotions are those which have evolved biologically, are an immediate response to a situation, and involve a physiological element; they are generally thought to include about half a dozen emotions, including disgust, anger, fear, sadness, surprise, and joy. (See Griffiths 1997, for example.) Other emotions are derived from them, with varying elements of evaluation and thought, and often under social influence. It is basic emotions that are expressed in the Expressive function. I take emotion to be the same as what Matthews and others (2003) call "affect", which is one of the three mental domains (the others being cognition and motivation).

Descriptive meaning arises from external perception. By contrast, affective meaning arises from internal perception. (Other internal perception includes physical perception such as balance, judgement of bodily stance and attitude, and thirst.) The relative independence of affective meaning from descriptive meaning comes from its being processed in distinct areas of the brain (Barsalou 2012: §1).

There is a double distinction here. First: in "You're a wimp!", for example, scorn is conveyed (or "expressed"), in the interpersonal function, and based in affect; but in "I feel scornful", scorn is stated, in the ideational function, and based in cognition. So "emotion words" such as *fear, joy*, and *surprise* are not emotive words; they name feelings, not express them. The second distinction is between conveying affect as emotion (in the interpersonal function, as earlier), and ejaculating it in the Expressive function e.g. "Oh poof!" As noted in §2.1, the Expressive function does not engage the language faculty fully, but the interpersonal function does, using lexis and morphosyntax.

Emotive expression is often secondary to the speaker's main intention; indeed, speakers are sometimes unaware of it.

SPECIFIC CHARACTERISATION

Affective meaning has three forms. The first form is the basic and undifferentiated form appearing in the Expressive function as non-verbal or semi-verbal exclamations. The second form appears in words such as *pathetic, frightful, horrible*, and *lovely*, having affective meaning only, and in *blathered, serene, disastrous*, and *delicious*, having both affective and descriptive meaning (in most uses); it is that form that is here called "emotive meaning". The third form is imaginative: the state of excitement and stimulated imagination, expressed in humour, storytelling, and poetry, for example. Emotive meaning is familiar in "taboo words" and "slurs", such as *nigger* and *kraut*. Among the synonyms for *horse, hack* and *tit* and *Rosinante* differ in having derogatory emotive meaning, while sharing the descriptive sense, 'horse'.

We have names for many apparently distinct emotions, but it does not seem useful to identify different types of emotive meaning. That is partly because there are too many possible criteria for the distinctions (Fillenbaum and Rapoport 1971: 209), and partly because there do not seem to be any differences in form of expression for different emotions.

Whereas descriptive meaning is characteristically ideational, emotive meaning is typical of the interpersonal function; for the speaker, it is personally expressive,[8] and it is intended to create a personal response in the hearer. Emotive meaning also contrasts with descriptive meaning in the semantic principles it relies on: it is situated to the greatest extent possible – in the Participants, the social situation, the real-world situation, and the context; it is obviously and markedly functional; and it is often low in intentionality, arising from a secondary intention while the speaker's primary intention is to tell a story or describe something.

With exclamations like "That's beautiful!", the hearer will respond with the same feeling as the speaker expresses, which is to be shared, as with admiration and the enjoyment of humour. But for some emotions, such as anger, or the emotion expressed in sexual harassment, the hearer aspect differs in an important way from the speaker aspect: the speaker intends a response to the feeling, not sharing. When speaker A said (British National Corpus), "You got a deal! Cos I love you!", he expressed enthusiasm; but speaker B replied, "You bloody creep!", expressing indignation, not shared enthusiasm. Here, the speaker is not so much conveying a meaning as rousing a response – which is not a sharing of the

speaker's "meaning". See Chen (2004) for support.

As a response, resulting from the speaker's action, emotive meaning illustrates language as action, not as transmission of information. It is thus "illocutionary"; that is, it is to do with "an action performed by saying or writing something, e.g. ordering, warning, promising" (SOED). That term will not be used in this book, however, being replaced by terms making more precise distinctions, such as those of meaning types (as here), function, and types of sign.

4.2 Support for Emotive Meaning

Most studies of semantics have not included emotive meaning, but Foolen (2016) shows that emotive meaning has been studied for over a century, tracing it back to Bally, working in 1905. It was recognised in 1910 by Erd-mann, as "Gefülswert" (see Geeraerts 2010: 9). Other support includes the following: Fillenbaum and Rapoport (1971); Leech (1974: 26 – "affective meaning"); Lyons (1977: 50 – "expressive meaning"); Adamson (1999: 573 – the encoding of "emotions and evaluations"); Langacker, in Cognitive Grammar (2012: 100); Cruse (2011: §10.4.1 – part of "expressive meaning"); and Gibbs and others (2012). Tucker (2002: 53) says that "verbal semantics rests on a foundation of affective evaluation".

Affective meaning is now generally accepted by psycholinguists, with two dimensions, those of intensity and of being positive or negative in quality (Citron and others 2014). Neurolinguists locate it in the right hemisphere (Brownell 1988: 28–29; Tucker 2002), whereas cognition and descriptive meaning are typically based in the left hemisphere. See also Pulvermüller (2002: §5.3.1) and Hsu and others (2015). It is independent of "neutral" (i.e. descriptive) meaning (Chen 2004); it is processed faster than descriptive meaning, and in distinct stages (Citron and others 2014).

4.3 Realisation of Emotive Meaning

The most obvious realisation of affective meaning is in lexis: as just noted (*horrible, nasty, nice*, and swear words), and in interjections. Some words have descriptive meaning basically, with their emotive meaning being activated only

in certain contexts. For example, in "The charges of dangerous driving … have been abolished" (SOED), dangerous has descriptive meaning only, but in "the dangerous possibility that she might grow up to resemble her mother" (SOED example), it has emotive meaning as well.

Some words gain affective meaning when used metaphorically or ironically. "Much … parochial work was connected with the marriage of … parishioners" uses *parochial* literally and descriptively, but "Historians … warn us … against setting up our parochial values as universally valid" uses it metaphorically and emotively. (SOED examples.)

We have seen that descriptive meaning is realised mainly in lexis and very little in phonology. With emotive meaning, lexis may be the obvious realisation, but phonology is the main one. Expressions like "Go away" are neutral in wording; but intonation can make them urgent, authoritative, or angry, and so on. A statement uttered with tone 5, rise-fall (instead of the normal tone 1, fall) adds emotive meaning; in effect, utterances that are statements syntactically, such as "He's a menace" and "It's a real mess", become exclamations (Halliday and Greaves 2008: 121). See Feist (2016: §2.5) for explanation and further illustration. Rhythm, alliteration, and other uses of sound can also express emotion, and rouse excitement and pleasure. Even syntax can realise emotion, as in exclamatory constructions (beginning with *how* or *what*, and inverted phrase order).

That realisation in phonology, with its natural rise and fall, is part of the reason why emotive meaning often creates the wave structures discussed in Chapter 2. The other part of the explanation is that emotion naturally rises and falls. The nature of emotion also explains why it forms field structures (again in Chapter 2); our emotions are aroused by a whole situation, so the effect of any emotive adjective spreads from the head referent to other things or actions. In "the two males in this group were beginning to respond in an ugly way" (British National Corpus), the emotion associated with *ugly* spreads out from "way"; we are to dislike the response and the two males.

4.4 Emotive Meaning: Discussion

Emotive meaning has been treated here as content, although content is usually

treated as consisting only of conceptual meaning. The justification for that is twofold. First, it is part of what we want to convey to hearers, so it is effectively a message. Second, grammatical words, such as intensifiers like *very* and the negative *not*, apply to affective senses, as in "very beautiful" and "not exciting". That explanation applies also to attitudinal meaning and social meaning, discussed later.

4.5 Emotive Meaning: Conclusion

The distinction between descriptive meaning and emotive meaning explains the nature of a number of synonyms and antonyms. In a pair of words that share descriptive meaning, one may have an emotive meaning, but the other not, as with *tantrum* and *outburst*. Sometimes there is a set of three words, one having a favourable emotive meaning, one being neutral, and the other having an unfavourable emotive meaning. In certain contexts, the following sets of three words are examples of that: *barren, unproductive*, and *unexploited*; *torment, tease*, and *tantalise*; *trumped-up, unsubstantiated*, and *creative*; *scrawny, lean*, and *slim*.

This section also resolves the otherwise intractable problem that formal semantics incurs with "mixed expressions" such as "Redskin" and "Commie" (Potts 2007: 267): we simply recognise that the two types of meaning that are "mixed" – descriptive and emotive – can be treated separately, as semi-independent parts of one sense.

5 Content Meaning (3): Attitudinal Meaning

5.1 Characterisation

Attitude is mental orientation to events and is a major control of our behaviour. It is built on simple affect, which motivates it; but it combines affect with understanding of the world (cognition) and our set of values, becoming a

disposition to act in a particular way (conation). COBUILD's dictionary for advanced learners (2001) brings that out in its entry for *broadminded*: "If you describe someone as broadminded, you approve of them because they are willing to accept …". Attitudinal meaning is the expression of attitude as just defined.

We express an approving attitude with words like *tasty* and *innovative* and a disapproving one with words such as *boring* and *useless*. Similarly, attitudinal meaning distinguishes *nag* (disapproving), *steed* (approving), and *horse* (neutral). It is attitudinal meaning that characterises euphemisms: *tipsy* for *drunk*; *passed away* for *died*; "overbook situation" and "involuntary de-boarding", for security staff dragging passengers off a plane violently.[9] It is also important in vogue words and phrases, such as "double down", "at the end of the day", and "selfie", which (at the time of writing) carry a favourable attitude for being fashionable.

English often has pairs of attitudinal words as antonyms, formed by adding a negative prefix, e.g. *in-*, *un-*, and *dis-*, to a base, as in *tolerable* and *intolerable*. Attitudinal meaning can thus be categorised as favourable and unfavourable. It does not seem valid to make finer categories, since there are no grammatical forms for them, as there are for the favourable/unfavourable distinction; but it will sometimes be useful to refer to particular attitudes such as the jocular and the facetious, as SOED does.

Attitudinal meaning is often evoked in context, without being part of all senses of the word, or even evoked in all uses of the same sense. For example, in the newspaper report that an arrested man was "unmasked as a violent petty criminal", *unmasked* and *violent* are used with unfavourable attitude, although sometimes neutral; but *petty* is neutral (being a technical term), although often disapproving. On the other hand, it is independent of context in that to express a contrary attitude you must generally choose another word: *heroic* refers to taking risks, approvingly; to refer to it disapprovingly, you must choose *rash* or *foolhardy*.

5.2 Support for Attitudinal Meaning

Van Linden (2012: §12.1) is one of the few linguists who recognises attitudinal meaning as a distinct type of meaning. But Adamson (1999: 573), Tucker (2002:

53), and Cruse (2011: 57) all refer to it, as "evaluative" meaning, when discussing "affective" or "expressive" meaning. I have not found any direct discussion of it in the psycholinguistic or neurolinguistic literature.

5.3 Realisation of Attitudinal Meaning

Word choice, as with negatives like *un*worthy and *dis*appointing, is the most obvious means of realising attitudinal meaning, but it is also realised phonologically, as emotive meaning is. For example, "He isn't coming, you see?" with a high falling tone conveys an expectant attitude; the same expression with a low rising tone expresses a stronger attitude (Cruttenden 1997: 89; see also Halliday and Greaves 2008: §5.2). In syntax, it is expressed by positive and negative question tags, as in "He is ready, isn't he?" and "He isn't ready, is he?" The negative tag reduces the certainty expressed by the unqualified statement (Mithun 2012).[10]

Politeness expressions such as *sir* and *madam* have no descriptive meaning, consisting primarily of attitudinal meaning, which is a major means of establishing and maintaining social relationships. In achieving good relations, they are used for their effect, not for conveying a message; like emotive expressions (§4.2 earlier), they are language as action, not as transmission of information. What counts is their "illocutionary force". Being based on affect, attitude is close to emotion – the distinction is not categorial; so attitudinal and emotive meaning often combine and may be hard to distinguish, as in the president's "sweeping directive", and "stunning wiretapping allegations".[11]

Cross-linguistically, realisation of attitudinal meaning is much the same as in English; see the various chapters of Caffarel and others (2004). Differences occur, naturally: Vietnamese has attitudinal meanings combined with grammatical meanings, in particles; attitudes expressed may include expectation of agreement, surprise, suspicion, and reproach (Thai 2004: §7.1).

5.4 Attitudinal Meaning: Conclusion

WHAT IS EXPLAINED

Attitudinal meaning explains some of the differences among synonyms and antonyms. Among the synonyms for *horse, cob* and *screw* are both disapproving, and *steed* and *Bucephalus* both express jocular attitude (SOED). There are often "paradigms", as it were, of attitudinal meaning – favourable, neutral, and unfavourable synonyms. Unfavourable *undercooked* contrasts with neutral *lightly cooked* and with favourable *rare*. *Cherry-picked* contrasts with both *selected* and *carefully chosen*. The difference in attitude applies equally to antonyms, explaining the relation between meaning types and antonyms (an issue introduced in the introduction to this chapter). For example, SOED's sense <7> of *smart* is unfavourable 'pert, impudent', with antonyms favourable *modest* and *polite*. Sense <8>, however, is approving 'prompt', with the disapproving antonym *over-eager*. (A descriptive antonym with the opposite concept is *slow*.)

The reality of attitudinal meaning explains discriminatory language and the offence it causes. "Men who put themselves forward at work are 'assertive'; women who do the same are more often 'pushy' or 'bossy'; men are 'persistent' whereas women are 'nagging'; men are 'frustrated', women 'upset'."[12] The contrast between the favourable words for men and the unfavourable words for women embodies the discrimination.

Attitudinal meaning also explains the use of the set of pronouns which includes *any, anybody*, and *anywhere* (contrasting with *some, somebody*, and *somewhere*), and words such as *yet* (contrasting with *already*). They are used sometimes, in dependence on context, with an attitude of negative expectation ("Aren't you ready yet?"), and sometimes to express care to avoid assumptions (as in "They can prevent any demonstrations", implying 'I'm not assuming there would be any'). For other uses, see Quirk and others (1985: §10.59–§10.61). Taking these words as using a standard type of meaning is a better explanation than treating them as a special class of "negative polarity items", as many linguists do. That applies also to the "semantic prosody" of Sinclair (see Stubbs 2016).

The nature of attitudinal meaning also helps answer two questions posed in §1.2, about the passage including "The politician responded with a shrug: 'Yeah, well'," and "The interviewer sounded sceptical: 'And that's OK?'." The attitude expressed physically by the shrug will have been expressed vocally by rather

high and light intonation: there was a verbal shrug, as well as a physical one. Second, the reporter said that the question ("And that's OK?") sounded sceptical; the scepticism will also have been expressed through intonation – it was higher than normal in pitch, presumably.

6 Social Meaning

6.1 Characterisation

GENERAL CHARACTERISATION

Social meaning is what is conveyed to the hearer about the speech situation – about the speaker or hearer socially and their social relations, and the utterance's social status. It is illustrated by the significance of "hello", and the fashionableness of vogue words. It is what makes some words socially unacceptable or "taboo"; it constitutes "blasphemy" and "obscenity". In those instances, the social meaning is usually an addition to descriptive meaning, but in other instances there is no descriptive meaning. In social meaning, *horse, nag, steed* and *gee-gee* are quite distinct, although they are synonymous descriptively.

Social meaning is very unlike descriptive meaning, in being very simple; the social meaning of a word or phrase has no elements. It is much more independent of context than the previous types of meaning; it does not have some senses that vary by context, as with descriptive meaning; and it attaches to a word regularly, not according to use or the speaker's intention. (It constitutes context, rather than being affected by it.) In fact, it is largely not intentional at all, being largely acquired in infancy as part of social conditioning.

SOED can give no "meaning" for *hello*, being reduced to telling us that the word is a greeting. Here, "meaning" (and language itself) is function – unless these utterances are meaningless. In the rescue story referred to several times previously (see Chapter 2, §2.3.4), the narrator deliberately ended with a cliché ("the most reassuring [or any other adjective] thing in the world"), partly to

identify himself with his hearers.

SPECIFIC CHARACTERISATION

Cruse (2011: §3.4.2) follows a tradition in British linguistics in classifying social meaning as follows, under the name of "evoked meaning". There are two types. The first, "dialect" meaning, has three subtypes:

- geographic dialect, e.g. British and Indian English, and *nor-wester, chinook*, and *föhn* as alternatives;
- historical dialect, including archaism, and being obsolete;
- social group variation in language – both social class and occupational group (including slang and "standard English"), and sometimes sex.[13]

The second type, "register", includes:

- field (i.e. the subject field of the utterance, such as law or science);
- "mode" (i.e. speech or writing);
- style (i.e. degree of formality, colloquialism, and individually chosen variation in language e.g. literary "style").

Register is social to the extent that it depends on the relationship with the audience that the speaker or writer is establishing. The subtypes overlap a little; for example, being somewhat informal is a characteristic of being spoken.

Social meaning is rather different from "meaning" in traditional semantics, especially of the philosophical sort. That is because it is not part of any information or "message" conveyed, and is often not fully intentional. However, it certainly is part of the signification of signs the speaker uses, and part of what the hearer takes from what is said. It is thus expressive, rather than ideational, being indirect and indexical.

Words may carry several of these social subtypes at once: *ponies*, for race-horses, is both North American dialect and slang. Like the other types of meaning, it can constitute the whole meaning of words; greetings such as "gidday" and "hiya" have the functional "meanings" of establishing social

relations and personal identity, without descriptive or affective meaning. So do terms of address (*professor, mister*, or *Jack* for the same person), voguish slang words (such as *like* in "She was <u>like</u>, 'Nah forget it'"), and the fillers *ah* and *er*. A successful crime drama, *Twelve Angry Men*, turned on the fact that "I'll kill you" was (at the time and place) a mild and sometimes jocular retort, not carrying serious anger as emotive meaning – it was a tease, not a threat.

6.2 Support for Social Meaning

Social meaning has been less often recognised than the other types of meaning. However, it is discussed by Leech (1974: 26 – "stylistic meaning"), Lyons (1977: 50 – "social meaning"), and Halliday (1977: 200–201), and others in that British tradition. McCawley (1968: 135), in the generative-semantics tradition, recognises it (Japanese "politeness levels" impose "selectional restrictions" on word choice). Eckert and Labov (2017) devote an article to it. It is characterised in dictionaries by such terms as "taboo", "racially offensive", "coarse", "euphemism", and "slang". Also, it has been a major issue for sociolinguists and sociologists; see §6.4 and Ochs (1992), for example.

Barsalou (2012: §3.6) gives psycholinguistic support indirectly. He distinguishes several kinds of cognition. Intellectual cognition is used in decision-making, reasoning, and problem solving; I have called the expression of that "descriptive meaning". Social and cultural cognition is distinct, to Barsalou; it is used in social and cultural situations, motivating behaviour, mental state, and self-concept. For those reasons, and since it is transmitted differently, it seems to correlate closely with "social meaning".

6.3 Social Meaning: Discussion

The examples given so far are all lexical, but social meaning is realised in other ways, and at all levels. That includes grammatical paradigms (*I am*/*I be*, and *you/youse*); morphology (elision in *I'll*); syntax ("incomplete sentences"); choice among allophones in pronunciation (e.g. variants of /r/) in American, Scottish, and other regional dialects; non-standard tonality (pitch contours, giving dialectal

"lilt"; and spelling (e.g. "colour" as against "color"). Elisions such as *can't*, and marked range of phonological pitch, are informal.

Social meaning, more than any other type, embodies the situatedness principle. It is inescapable: as soon as we begin to speak, our vowels will reveal our personal situation – our social and regional identity. It is at an extreme on the scale of intentionality, since most forms of social meaning are rarely deliberate.

As noted in Chapter 2, field structures are often created by social meaning. Consider, "And of course he goes in and the horse drops in the far side of the wee barn, and [… he] goes in with his dram and he dips it into the horse trough you ken" (British National Corpus). In writing, "wee" sets up the Scots dialect field, which we take to apply to the previous part of the quotation; it is renewed by "dram" and "ken", but covers everything in between. (In speech, pronunciation would establish the dialect from the beginning.)

Social meaning is evident in the cross-linguistic literature, although not always by that name, as in politeness forms. A less familiar instance is that Japanese has "male speech" (Teruya 2004: 194), realised in final particles.

6.4 Social Meaning: Conclusion

WHAT IS EXPLAINED

The concept of social meaning, with its varieties noted earlier, provides a major explanation for the range of synonyms for our representative word, *horse*. *Charger* is distinct in being from historical dialect; *ponies*, for racehorses, signifies North American dialect (according to SOED). *Screw* is slang, a social dialect – as are some of *pony*'s other senses, namely '£25 sterling', 'a student's crib', 'a drink', and 'a small chorus girl'. *Nag* signifies spoken mode. As to style, *gee-gee* and *nag* are colloquial. As to field, c*harger* (in a different sense from above) signifies the military field, *steed* the literary field, c*ourser* is poetic, and *gee-gee* is "nursery" (SOED). In all those respects, *horse* conforms to the standard pattern of meaning types.

Social meaning also helps explain ideophones, which are inexplicable by conceptual semantics. For example: "He grinned at her cheerfully [and said]

‘There was a fine shemozzle after you’d gone’”.[14] The speaker used *shemozzle* to let its colloquial value give informality and light humour, which the synonymous phrase, “complicated situation”, would not have given.

Social meaning also explains part of the semantics in the political interview cited in §1.7. The politician said, “Yeah, well, they’ll perhaps have to go”. “They’ll” was mildly colloquial; “yeah” and “well” were very colloquial; that style is a very unusual for prominent politicians being interviewed, and it was significant for the speaker’s career. The interviewer’s response, ‘And that’s OK?’, was almost formal in comparison, as well as carefully neutral in affective meaning – adopted in her role of respectful interviewer.

Social meaning provides a more far-reaching explanation – for the whole of sociolinguistics, as in the work of Labov and of Bernstein, and for part of related disciplines such as “the ethnography of communication” (Hymes 1962) and “interactional sociolinguistics” (Gumperz 2001). Sociolinguistic study of language variation according to social class, gender, region, and so on concerns the semantics of dialect (as defined in §6.1 above), and variation according to situation concerns the semantics of register. Sociolinguistic study of language change is the study of historical dialect in the past, and the formation of dialect in the present.

7 Grammatical Meaning

7.1 Introduction

GRAMMAR AS PROCEDURES OR “OPERATIONS”

This section builds on §2.5.2 of this chapter, which noted that grammatical items have “grammatical meaning”, explaining that fully.

Grammatical meanings have already been described as operating on content meanings, showing how they are to be related. That process is vital to language. Its importance is shown when a sentence is printed without its grammatical

signs, including the word order, as follows. (The words are arranged here by alphabetical order within part-of-speech order): *low manageable on-demand achieve require addition capture carbon carbon carbon cost mixture nuclear renewable sources zero*. When the grammatical morphemes are supplied, the sentence is no more intelligible: *a, a, at, in, –ing, of, or, other, –s, –s, to*, and *with*. The sentence is: "Achieving a low carbon grid at a manageable cost will require a mixture of nuclear, gas with carbon capture or other zero carbon on-demand sources, in addition to renewables".[15]

Let us consider the ungrammaticality and virtual meaninglessness of the content-only form, from the hearer and reader aspects. To get the meaning 'a low carbon grid', from its constituents, *carbon, a, grid*, and *low*, readers need something to tell them that it is *grid* which is the head, that *low* modifies *carbon*, and that *low carbon* modifies *grid*. (There is nothing tangible in the text to show that *low* modifies *carbon*, not *grid*; a hyphen should have been supplied, as a sign.) All students of language know that articles such as *a* have a grammatical significance – "meaning" in the terms used here – but we see that the hyphen has grammatical meaning also, as does the word order that tells us that "grid" is the head and that the other words are modifiers.

The grammatical meanings thus show hearers how to build the meaning of an utterance from its parts. That is usually said to be "compositional"; but it is not like composing, so much as like cooking from a recipe. That is because the "ingredients", when processed according to the instructions, produce a "cake", which is not simply a combination of the ingredients "according to compositional principles", as the literature typically says: an utterance is not simply a composition or combination of words. In illustrating the importance of the order in which procedures are followed, the mathematical analogy used previously is even closer. "(2 + 3) × (4 + 5)" means '(1) Add two and three. (2) Then add four and five. (3) Then multiply those totals'.

The usual treatment of "grammatical items", stating that they represent abstract grammatical categories (such as Subject, declarative, and third person) is correct, but it gives only one aspect of the truth – the system aspect. The definite article may represent or "mark" the definite status of the whole group, but there must be, in language as used, a process of working from the article to the whole group, making it definite, and there must be someone who carries it out – the

hearer.

Representing grammatical meaning as a guide (from the speaker), or as procedures to be followed (by the hearer), may seem improbable. However, it is clear that procedures occur in the "language" of mathematics, and certain fundamental facts of speech and writing require us to accept it. Language is linear, but the speaker's meaning is not, having the hierarchic and network structures described in the previous chapter; there must necessarily be procedures for reconstructing that non-linear meaning as we listen and read – for counteracting the constraint of linearity. Therefore, procedural grammatical meaning is essential to language; it consists of the operations or procedures that compose the content of an utterance. A full account of its nature and forms is essential for a theory of semantics.

REALISATION OF GRAMMATICAL MEANINGS

The operations just listed are indicated in the text by signs, some obvious and some not. In "the riskiest alternative", making the lexical item *risky* superlative is signalled by the *–est* suffix, of course – a morphological sign. Making the group definite is signalled by the determiner, *the*, and emphasis can be signalled by repetition of a word – lexical signs. Making "riskiest" a modifier is signalled by its position before the head – a syntactic sign. Those signs for meaning relationships construct the semantic group, for which the syntactic phrase is a sign. The order of phrases in the clause (Subject–Predicator or Predicator-Subject) signals grammatical mood in English. Grammatical signs occur at all levels of language.

Signs may carry two or more grammatical meanings at once. "Her walk", for example, signals both the "possessor" of the walk and the sex of the possessor, and it signals a reference back to an antecedent. That is standard in synthetic languages, of course. English is inconsistent in that respect; although it signals three things in the single morpheme *her*, it realises multiple adjustments of the main verb by multiple auxiliary verbs, as in "must have been waiting" – which answers the question in §1.2 is to why we sometimes have two or more auxiliary verbs.

FUNCTIONS

The example, “the riskiest alternative”, shows further that grammatical meanings have two main functions. They relate the content senses to each other (‘riskiest’ to ‘operation’) and they adjust the senses themselves (‘–est’ adjusts ‘risky’). The rest of §7 sets out the specific functions included in those two main ones.

FORMULATION OF THE MEANINGS

I have formulated the grammatical meanings so far in the hearer aspect, as procedures that the hearer carries out, according to instructions from the speaker. They could also be formulated from the system aspect, as one form of the rules of grammar; the instruction “Make the group definite” could be represented by the statement, “Grammatical status = definite”; for “Make ‘riskiest’ a modifier”, one could say, “Grammatical status = modifier”. Those formulations with grammatical status do not explain very much. I believe that formulating the meanings as procedures is much more explanatory, and it highlights the constant principles that language is a human activity – doing things (with words) – and that language is interactive.

TERMS

The main terms used here were introduced in Chapter 2 but are explained again here. Co-ordination is the process of making two linguistic units equal in status and equal in function, like “Jack and Jill”. Complementation is the process of making them equal in status but different in function, like Subject and Predicator, or Process and Participant. Subordination is the process of relating two units as head and modifier. Chapter 2 also distinguished between the syntactically realised semantic structures created by phrases and clauses and the content-based semantic structures creating information structure. That distinction recurs here, because grammatical meanings work differently in the two types of structure.

THE RELATION BETWEEN SEMANTICS AND SYNTAX

Syntax is being treated here as having a twofold nature. It is the practical matter of arranging words in order, necessitated by having to speak one word at a time. In that respect, it is independent of semantics: the rules of syntax are not rules of semantics. Second, it carries signs guiding hearers in composing the semantics, as with the order of Subject and Predicator; in that respect, it has semantic significance. That understanding is rather different from many treatments of syntax and is developed substantially in this section. If it strikes the reader as odd, I ask for judgement to be suspended, letting the explanatory coherence of the details accumulate. The relation between semantics and syntax will be considered directly later in the book.

THE PHENOMENA TO BE EXPLAINED

The main things that this section sets out to explain are what the grammatical meanings of English are, what signs carry them, and how they build the two hierarchic structures (syntactically based structure, and content-based "information" structure). As ever, English is used to illustrate what I take to be general semantic principles.

DISCLAIMERS

Limited space prohibits full treatment of grammatical meanings. I am aware, in particular, that the following get little treatment: negation, the various meanings of the articles, and the scope of grammatical meanings.

Although I am confident of the outline of this explanation of grammatical meaning, I am not confident of all the detail. Especially, there may well be other grammatical meanings that I have not set down. (I have deliberately omitted the specific meanings that create quale relations (Chapter 2, §2.2.4), for simplicity). Both the grouping into levels and the wording of the putative hearer procedures may well be improved. (I have been putting into words processes that occur below consciousness, and perhaps my research has not been thorough enough.)

7.2 Grammatical Meanings for Senses in a Group

7.2.1 Introduction

In general, grammatical meanings build the content into semantic structures. Since those structures have three main relationships, there are three main grammatical meanings: subordinating content items, co-ordinating them, and making them complementary.

The procedures are set out in an order intended to make the exposition clear. They are not in an order presumed to be what hearers actually use; I am not aware of any research that shows what such an order would be.

7.2.2 Preliminary Processes: Obtaining Content for the Main Procedure

The content being operated on is normally within the unit being constructed – in the head being modified, for example; but in "the big one", there is no content in "one" for "big" to operate on. There are (at least) four preliminary processes for obtaining content in such situations.

The first process is illustrated in this sentence from a recipe book: "After the spinach has cooled completely, pack it together tightly". Before the semantic structure of "pack it together" can be built, the content for "it" must be brought in, from its antecedent, "spinach". That procedure for pronouns is followed for other pro-forms, as in "He said so", and "Bill did too". We can say then that pro-forms signify, 'Obtain the content for this word from its antecedent'.

The second procedure is used for deictics, indicating place, time, object, and so on, by words such as *there, then*, and *that*, which refer to something in the context of the speech situation. The hearer's procedure may be stated broadly as, 'Obtain the content by referring to the speech situation'. (The hearer will formulate the procedure more precisely than that, according to the situation.)

A third preliminary procedure is needed for idioms. For example, a descriptive newspaper report included the sentence, "Spotters wearing … hard hats look out for falling dangers".[16] (The report will be used to illustrate other points, later.)

Readers could not simply summon the lexicon's sense of *hard* and its sense of *hat*, and combine them. Rather, they had to recall the idiomatic "hard hat" as a lexical item, and 'helmet' as its meaning. The procedure is, then, "Replace this apparently phrasal expression with its idiomatic meaning".

Finally, rankshifted expressions must be reconstrued. For a noun clause, the instruction takes the form, 'Construe the figure represented by this clause as a group'; that is preliminary to construing it as Subject or Complement. For a clause as postmodifier (a restrictive adjectival clause), it takes the form, 'Construe this figure as a single sense'; for example, "The man who was limping" is equivalent to "the limping man". (Post-modifying prepositional phrases are also construed as single senses.)

There is one other and more general mental action that could be considered as a type of preliminary procedure. We noted (in §3.2 earlier) that mental access nodes lead to descriptive meanings and activate them, making them available for inclusion in the meaning of the whole utterance. That activating of a meaning is in effect carrying out an instruction, "Access (or "activate") the relevant meaning element". That is asserted by Pietroski (2018), for whom meanings are instructions that are "executed": "red dot" means (a) 'Access the concept RED', and (b) 'Access DOT', and (c) 'Conjoin them'). However, I am treating access to meanings as psycholinguistic, and part of comprehension, rather than as semantic.

7.2.3 Establishing Subordination: The Head

The fundamental procedure for groups is presumably, "Make this sense the head".

It is strange, in a way, that there is no overt sign (in English and similar languages) for such an important fact as that a certain word is to be a semantic (or syntactic) head – only unreliable markers such as determiners and auxiliary verbs (which are not always present), and being final in the group (contrast "pot plants" and "plant pots"). It seems that in groups, the last word defaults to being head unless there is some sign to show otherwise, such as the last word's being a Property sense following an Entity sense (as in "the pots remaining"); and isolated words are heads by default. (Perhaps that dates from a time when such

languages did not have modification, with utterances like ‘come here’ and ‘bull hurt me’, where all senses were heads.)

7.2.4 Establishing Subordination: Modifier Relations

INTRODUCTION

Since the relation of modifiers to head is subordination, all the procedures here are forms of a general subordinating meaning, which can be formulated as, ‘Make this unit subordinate to the head of the larger unit’, or ‘Make X subordinate to Y’. It generally occurs in a more specific form, specifying the nature of the subordinate’s dependency – the nature of the modification. Some of those specific forms are given in the following.

This meaning is not expressed as clearly and simply as the procedures for obtaining content are. In English, many words used as modifiers are not modifiers inherently: it is possible to have both “some steel reinforcing” and “some reinforcing steel”, with “steel” and “reinforcing” reversing roles. There, subordination is signalled by syntactic position. With demonstratives, it is also signalled by agreement in number, as in “These books”.

The rest of this section describes the main specific processes of making meaning subordinate.

MAIN OPERATION

ATTACH THE SENSE’S CONTENT TO THE HEAD’S CONTENT

The most familiar of the subordinating meanings is, ‘Attach the content of this item to the content of the head’, or ‘Add X to Y’. It is illustrated in several ways in the following piece of descriptive newspaper reporting.

And there are diggers everywhere, picking, raking, grading the debris on

> nine massive landslips, that were created by the magnitude 7.8 earthquake of November 14 last year.[17]

At word level, the sense '7.8' is added as postmodifier to 'magnitude', with no clear sign carrying the grammatical meaning – readers must find it for themselves, with juxtaposition as a clue; the same is true for 'last year' post-modifying 'November 14'. Prepositions sometimes mark subordination, as with "the debris on nine massive landslips", but often mark complementation, as would be the case in "Debris lay on the nine massive landslips". Adverbial *-ly* is often also a sign that content must be added to the following word, as in "absolutely massive".

The complexity of structure in nominal groups (see Chapter 2, §2.2) requires a matching complex set of grammatical meanings, whose formulation by the reader must allow for the zones. Epithet and Descriptor senses must be interpreted as 'Add this to the head's meaning, as an Epithet/ Descriptor sense'. Constructional Classifier senses must be interpreted with the quale relation included: "a brick wall" requires 'Add this to the head's meaning with the quale IS MADE OF', but "a brick kiln" requires 'Add this to the head's meaning with the quale FOR THE FUNCTION OF (MAKING)'. (See Chapter 2, §2.2.4 for qualia.) Constructionless Classifiers are interpreted according to the instruction, 'Associate this sense with the head'. Word order creates clear signs for the zone structure if all zones are filled: in "A floating musical global trip", *floating* must be an Epithet, *musical* must be a Descriptor, and *global* must be a Classifier. Often, however, readers must rely on their knowledge of the words' senses and the context.

The examples given so far have all involved descriptive meaning, but here we see emotive meaning involved: in "massive landslips", "massive" indicates that a feeling approaching awe is to be added to 'landslips' – the reader is to be impressed by their size, 'of very large size' being the descriptive meaning of *massive*.

This 'Add' procedure is complex; it is possible to specify several sub-steps, which can be formulated as follows. (a) Relate the sense of the word to the other word. (b) Make it subordinate in status, as modifier to head. (c) Add the content, enlarging the head sense, and establishing a group. (d) Check that the meaning

formed suits the context, and correct it if necessary (as with an adjective used metaphorically). The other procedures in the list have comparable sub-steps.

SECONDARY OPERATIONS THAT MAY BE NEEDED

SPECIFY A GRAMMATICAL ATTRIBUTE OF THE HEAD

In "those slips", the *–s* on "slips" and the determiner *those* specify that the head is to be plural. Tense inflections and auxiliary verbs specify the tense or aspect of a Predicator, similarly. (Number is a grammatical attribute of a Participant group, in English; specifying it, which is grammatically required, is one function of the group's semantics. The same principle applies to tense and aspect in Predicator groups.) The instruction to the hearer thus varies with the situation, but may be formulated as, 'Specify the number/tense/etc. of the head as plural/past/etc.', or 'Specify the X of Y as Z'. This grammatical meaning includes a concept such as past as descriptive meaning, effectively adding to the head's content.

In languages like English, signs for 'Specify' include change in the internal vowel (as in *rode* and *mice*), as well as separate morphemes such as *–ed* and *–er*. This procedure also applies to Property words (such as *big* and *gloomily*), when *–er* or *more* specifies the degree of comparison.

ADJUST THE CONTENT OF THE HEAD, OR A MODIFIER, IN THE MANNER INDICATED

Reinforcers such as *utter* and *mere*, and other intensifying words such as *very*, adjust the strength of the head; repeating a word adjusts its degree of emphasis. That is how the example in §1.2 worked – "a long, long way to go". The manner indicated is specified by the descriptive meaning of the word – intensity or modality, for example.

'Adjust' occurs for content-unit structure at this level. The focusing words *only* and *just* adjust downwards the Rhematic value or significance of what they modify, as in Expressions like "It was only a dollar" and "I'm just tired".

Replacing a noun or a whole nominal group with a pronoun acts similarly. In "Bennett's suggestion risked being seen as a 'rip-off', if it added too many extra costs", *it* means 'Obtain 'Bennetts's suggestion' as the content'; but, as pronoun, not full phrase, it signifies that the content is to be taken as Topic (Chapter 2, §2.3.2), so it also means, 'Adjust the importance of that content downwards, as being old information' (which is part of the significance of being made Topic).

DETERMINE THE MEANING OF THE GROUP (I.E. SET THE EXTENT OF REFERENCE)

This grammatical meaning has a range of specific forms, some of them rather idiomatic in English, as set out in the standard grammars – creating indefinite reference, generic reference, and so on. The type of determiner controls whether the determination is done by pointing, as with *that* and *the*, or quantitatively, as with *all* and *nine*, or through the concept of possession, as with "Bennett's suggestion". It is the whole group that is determined, not just the head.

NEGATE ANOTHER MEANING

Negation in English is complex, so here only a couple of basic points will be made. This meaning sometimes acts as a sub-modifier negating a modifier, as in "They have made not inconsiderable progress". It sometimes applies to the head itself (or part of it), as in "fake jewels", meaning 'reputedly very valuable ornaments which are in fact not valuable'. Negative prefixes such as *im-, dis-*, and *un-* apply to the rest of the word; and, of course, with words such as *not* and *never* apply to whole figures. Thus, the meaning of negation operates at all levels of language, not only in group structure.

CO-ORDINATE MODIFIERS

Senses being subordinated must sometimes be co-ordinated with each other, as in "hundreds of red and yellow balloons". The speaker's implicit instruction for co-

ordination is, 'Relate the items as equals in status and function', or 'Relate X and Y as coordinates' – or, more technically, 'Coordinate the two items'. The commonest signs carrying it are certain conjunctions, such as *and, but*, and *or*; but it is carried also in lists by two equivalents to *and* – commas in writing, and rising tone + pause, in speech.

ESTABLISHING MODIFIER RELATIONS: DISCUSSION

The previous account covers the types of modification discussed in formal semantics such as that of Kamp and Partee (1995), and of some other writers. Their "intersective" modification is the additive type here; some of their "subsective" types are in the adjustment type here; and their "privative" modification is negation. I suggest that this account is a better one, being clearer, psychologically real, and more coherent with the rest of semantics, especially with the meaning types already discussed and the dimensions to be discussed later. The formal semantics account omits the remaining types discussed here.

It is worth noting a little more about associative meaning, because it is very seldom mentioned in the linguistic literature. In relating constructionless Classifiers to the head (see Chapter 2, §2.2.4), hearers must think out the probable association for themselves. Examples are: the television advertisement, "Please don't buy cage eggs" (= 'eggs laid by hens kept in a cage'); "parrot case" (= 'court case about a parrot'); and a shop's sign advertising "charcoal burgers" (= 'burgers cooked over charcoal'). Effectively, the grammatical meaning is 'Associate the two senses in whatever way seems best to you, according to the context'. Genitive phrases with *of* have a number of standard relationships they suggest but are often used quite vaguely, relying on this 'Associate' meaning. This meaning is what Gil (2005: 352) calls the "association operator".

Association is the most basic of the subordinating grammatical meanings, which grade from basic to complex and sophisticated; it lacks all specification of the nature of the association. 'Add' is next in basicness, being very simple. 'Specify' and 'Adjust' come next, and 'Negate' is the most sophisticated. Its basicness goes with its place in linguistic development, both development of a child's ability and (I presume) development of an individual language. It

characterises children's "two-word" stage (the first stage of connected language); "dolly dress" could mean 'dolly's dress' or 'dolly has a dress' or 'dolly is getting dressed', since there is not enough syntax in the utterance to specify a particular link between the two words. In recent decades, English has been rapidly extending the use of the vague Classifier constructions such as "cage eggs" and "parrot case" instanced earlier, and "comedy gold" and "flight distance".[18] Since association is the most basic of relations, this is a reversion to unsophisticated structure.

ESTABLISHING MODIFIER RELATIONS: CONCLUSION

The operation of grammatical meaning at group level is shown graphically in Diagram 3.3. The sentence is chosen to illustrate the necessary points while being simple, and because it will perhaps be familiar:[19] "The quick brown fox jumps over the lazy dog", with "jumps" converted to "has jumped" (printed in bold type across the middle of the diagram). The grammatical meanings (not in bold type) are shown with arrows to the words they operate on. For example, at the top left of the diagram, "Make this the head" indicates that "fox" is to be the head of the first group. At bottom left of the diagram, "Determine this" indicates that "the" signals that the bracketed group, "quick brown fox", is to be made definite. (The role of "over" is passed by, to be explicated later.)

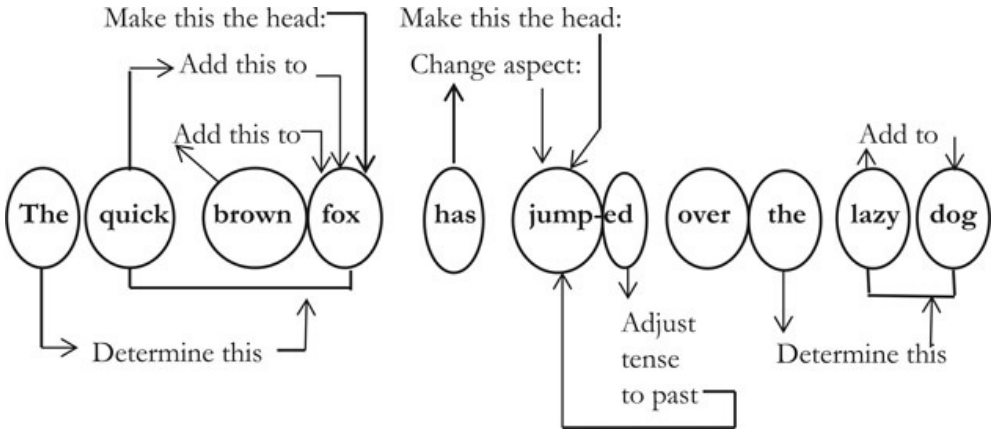


Diagram 3.3 Grammatical meanings of subordination (at group level)

Diagram 3.4 shows the same grammatical processes in a different layout, to

reconcile the presentation given so far with familiar tree diagrams, and to demonstrate visually that semantic structure parallels syntactic structure – because syntax expresses semantics. ("Over" is again not treated.) For example: **the** + *determine* + **fox** (diagonally upwards at bottom left) is to be read as "Interpret '**the**' as *determining* '**fox**'". **Quick** + *add* + **fox** means "Add the sense 'quick' to 'fox'".

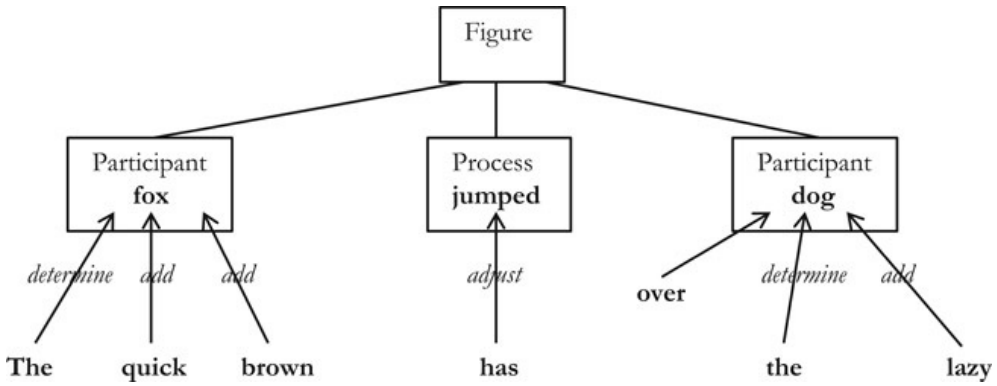


Diagram 3.4 Subordination meanings shown as a tree diagram

7.3 Grammatical Meanings for Groups in a Figure

7.3.1 Complementing Content

THE PROCESSES

The general grammatical meaning for relating groups within a figure is, 'Relate the groups as complementary'. That general meaning can be considered as comprising several specific meanings, which the reader orhearer takes from morphosyntactic signals such as word order and inflections, and which identify the complementary roles. That is fairly straightforward for our sample clause, "The quick brown fox has jumped over the lazy dog". The morphosyntax signals that 'The quick brown fox' is to be interpreted semantically as an Actor Participant and syntactically as the Subject. A second specific meaning is that 'has jumped' is semantically a material Process, and syntactically the Predicator.

Finally, ‘over the lazy dog’ is specified as semantic Circumstance and syntactic Adjunct. The three groups are therefore to be made complementary, in a figure with three parts. That is shown graphically in Diagram 3.5.

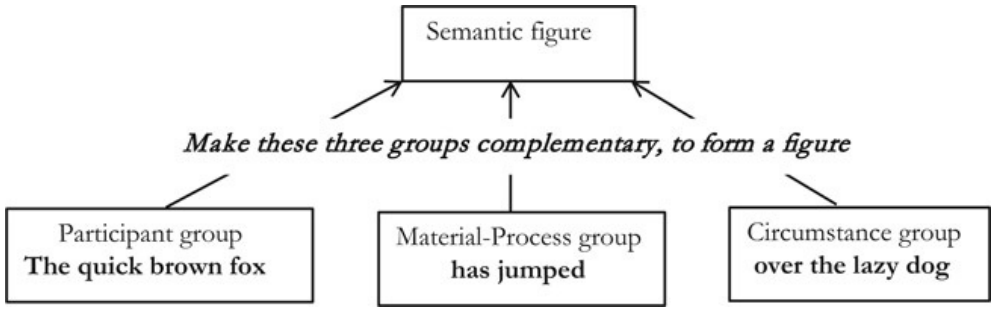


Figure 3.5 Complementation meanings (in a figure)

A less straightforward example is the sentence, “I’ve tried to avoid statistical analysis like the plague”. The Subject group and Predicator group carry the meaning, ‘Relate the writer [“I”] to “have tried” as Senser Participant in a Mental Process’. (See Chapter 2, §2.2.2, for those terms.) The instructions to the reader then get more complex, since they must deal with “to avoid statistical analysis” as a rankshifted non-finite nominal clause, which must be treated as Complement to the verb, “have tried”.[20] So the expression, “[Ha]ve tried to avoid statistical analysis”, requires the preliminary procedure, ‘Construe the figure “to avoid statistical analysis” as a group, by rankshift’. Having done that, the reader must follow the final instruction, ‘Relate “to avoid statistical analysis” as Phenomenon to “have tried” as Mental Process, in complementary relation’.

SIGNS FOR COMPLEMENTATION PROCEDURE

The grammatical meanings of complementation are carried by morphological, lexical, syntactic, and semantic signs. Morphological signs include the nominative case of pronouns to help identify the Subject Participant, and auxiliary verbs and participial inflections to help indicate Process. Lexical signs of a Circumstance include some uses of prepositions, as with “over the lazy dog” and “Debris lay on the nine massive landslips”, cited above. As always, syntactic status is also a sign; here, the order of Subject and Predicator is an earlier sign of grammatical mood.

Semantic signs of complementation are less tangible. In the sentence, "Statistical analyses are not usually my cup of English Breakfast",[21] the semantic clash[22] in the idea of having a cup of breakfast requires recall of the encyclopaedic knowledge that there is a type of tea called "English Breakfast tea", so that "breakfast" can be construed as head of the syntactic Complement, and Attribute in a relational Process. A second semantic sign that a relational Process must be constructed is the fact that the Predicator, *are*, is empty of content meaning, not denoting any event. Also, the relational Process is signalled by the fact that the Complement ("my cup of English Breakfast") refers to the same thing or things as the Subject ("statistical analyses").

That analysis entails a paradox. Semantics is what is signified, but it can also constitute signs, such as the semantic anomaly of 'my cup of English Breakfast'. The fact that there are semantic signs illustrates the complexity that the systematicity of language has developed. It illustrates forcefully the power of expressivity: English, at least, can subvert the distinction between sign and signifier, turning meaning into a sign of yet other meaning.

There is a sequence in the operation of those types of sign. Generally speaking, syntactic and morphological signs signal syntactic structure, which then signals semantic structure; semantic signs work in co-ordination with the syntactic signs. (Some morphological signs work directly on the semantics, as when *analyses* signals that more than one analysis is intended.)

7.3.2 Co-ordinating Content

The general instruction is 'Relate two groups as coordinates'. Assuming that, in "Jack and Jill went up the hill", 'Jack' has already been identified as a Participant sense acting as Subject group, the specific instruction would be, 'Relate "Jill" to "Jack", as a Participant acting as a parallel Subject'.

Some of the signs for co-ordination are familiar: conjunctions such as *and, but*, and *or*, discussed earlier, and the listing of signs (e.g. words), as in "And there are diggers everywhere, picking, raking, grading the debris",", where Predicators are co-ordinated. Other signs may not be familiar to readers as grammatical items: co-ordination of clauses can be signalled by certain combinations of intonation

and pausing, such as a slight rise or fall combined with a short pause (both of those features being not great enough to make a sentence ending). Colons and semicolons are graphological signs representing those phonological signs in writing. The unsatisfactory term, "grammatical item", is unsatisfactory in this as well, that it does not include the grammatical signs that are most important in speech (phonological ones), and other signs that are important in writing (punctuation).

Co-ordination is sometimes applied to stems within one word, either with an ambiguous hyphen or slash as marker, as in "fighter-bomber", or with no marker in more modern uses such as "an adventure comedy" and "a party dance".

Just as the 'Specify' meaning includes plural or past, so the sign for the 'Co-ordinate' procedure carries a conceptual meaning that makes the co-ordinate relationship more specific. The conjunction *or* signifies alternative; *but* signifies opposite, and so on. Compare "poor and honest" and "poor but honest".

7.3.3 Grammatical Meanings at Figure Level: Discussion

In §7.2.1, we saw that, at group level, sense units are subordinated but not made complementary; in this section, by contrast, we have seen that at figure level sense units are made complementary but not subordinate. The explanation lies in the different structural functions of groups and clauses. Groups build senses. In that, they are like words, since words build senses. For example: in "America's Cup bosses have forced through another retrospective rule change", the subordinate words underlined act on "change" to build a single though complex sense, which forms the Complement of the sentence. ("Change" is itself complex though single, being constructed of subordinate elements acting on a head: "the substitution of one thing for another" (SOED). Similarly, the apparently unitary sense 'blind' can be realised as the group "without sight" or the clause "who was blind".

7.4 Grammatical Meanings Above the Figure Level

At the level of the figure complex (complex sentence, syntactically), clause

relationships are set by grammatical meanings typically carried by relative pronouns and conjunctions. In the sentence quoted earlier, "And there are diggers everywhere, … grading the debris on nine massive landslips, that were created by the magnitude 7.8 earthquake", *that* and the comma before it signal subordination.

Conjunctions usually carry some descriptive concept that aids the linking of figures. In the sentence beginning, "The FN's first base was in the south, where Mr Le Pen built support", *where* brings from the lexicon the concept place and is assigned the grammatical meaning, 'Relate this figure to the preceding word or other suitable antecedent'. Since *south* includes place as a meaning element, it is accepted as the antecedent. At the paratone level, the signs carrying grammatical meaning are usually change of pitch level at the beginning of the new unit. (For paratones, see Chapter 2, §2.2.4, §2.3.2 and §2.3.4.)

Marked uses occur. In colloquialisms like "Go in there and you'll regret it!", the hearer must infer from the non sequitur that "and" does not signify co-ordination, and must find the 'if' meaning cognitively – unless the construction has become so familiar that *and* has gained 'consequence' as an extra meaning.

7.5 Grammatical Meanings at the Morphological Level

There has in recent years been considerable debate about whether any morphological processes of word formation are the same as the syntactic ones that form phrases and clauses. If we consider the parallel semantic processes, we certainly see within words many of the same subordinating processes as are carried out through the grammatical meanings described previously. We see 'Add this' when morphemes are first compounded, as in *graveyard, brickyard*, and *sandpit*. We see 'Adjust the meaning' when *–er* or *–est* adjusts the degree of comparison. We see 'Specify the meaning' in the operation of tense and number inflections. Negative prefixes negate the head. The co-ordinating process occurs in the formation of "compounds" such as *clock/radio*. Complementation occurs in words like *brickmaker*, which represents the same relationship as is realised in 'he makes bricks'.

Most of the examples given so far are historical, which might suggest that

these processes are not part of the everyday semantics of speaking and understanding. But clearly these morphological processes are active in the inflection of nouns, adjectives, and verbs. The frequency and widespread acceptance of neologism shows that they are active much more widely. For example, a daily newspaper cited a person who described himself as "a recovering World-of-Warcraft-aholic CIA cyberwarrior".[23] "Warcraft" and "cyberwarrior" require the reader to co-ordinate two stems, and "World-of-Warcraft-aholic" builds the pseudo-suffix *–aholic* onto a multiple novel compound – all by "syntactic" processes. If someone wrote "the Napoleonisation of the presidency", for example, readers would adjust the stem *Napoleon* according to the verbal suffix *–is(e)* and the nominal suffix *–ation*, making a deverbal noun from the original noun.

Many words that were built up by morphological processes are not now understood by mental analysis and re-synthesis of their parts, of course; and, between the extremes of the frozen and the free, there are many words that we may analyse in some circumstances but not others, and words that will be analysed by some hearers and not by others. However, we must conclude that the procedures entailed in grammatical meanings do often apply to morphemes within a word: words do have "syntax".

7.6 Discussion: Grammatical Meaning

7.6.1 Grammatical Meanings Constructing Content-Unit Structure

INTRODUCTION

Following the procedures outlined in the previous section lets the hearer build a syntactically based semantic structure. But language is functional; until the hearers know how that structure is to function in their own minds and life, and how they are to respond, it has no practical value. They must relate the information, feeling, and attitudes to their own knowledge, and work out whether the speaker intends them to accept information, or answer a question,

and so on.

Grammatical meanings guide hearers in those tasks, as well as in the task of formulating syntactically structured meaning – that is, in formulating the structure of content units ("information structure"), as set out in Chapter 2, §2.3. That structure was shown to be based on the content as such, and to be markedly different from the syntactically based structure. In the context of grammatical meaning, however, the connection between the two structures is much clearer. Both are built by the grammatical processes of complementing, co-ordinating, and subordinating set out earlier, in §7.2.

THE PROCESSES

In building the syntactically based structure, the grammatical meanings operate on senses and structures identified by a certain set of signs, as in §7.2. In building this content-based structure, the grammatical meanings operate on the Topic and its Comment, on the Theme and on the Rhematic units, which are identified by a different set of signs, as set out in Chapter 2, §2.3; some are syntactic, some are phonological, and some lexical.

The relevance structure treats the Topic and Comment (if present) as signs meaning, 'Relate these two blocks of content as complementary in relevance'. The Rhematic structure is built as follows. (1) 'Relate the items of information as co-ordinate in their ideational function' – they add more and more details to the hearer's mental picture. (2) The focus is created by applying 'Adjust the importance of this item upwards' to the stressed information item (usually final). (3) 'Relate the other items of information as subordinate to the focus in their interpersonal function' – their function of persuading or entertaining, for example. (4) 'Give those subordinate items of information a degree of importance matching their order in the Rheme'.

In a second stage, other meanings relate that structured content to the hearer's existing knowledge, by steps that may be formulated as follows. (1) 'In relating this figure to your knowledge, understand it from the viewpoint given by the Theme'. (2) 'Relate the content material to the item in your knowledge designated by the Topic'. (Those formulations differ from the formulations used in previous

sections, because the latter apply to purely linguistic processes, but these processes operate in the area where linguistic and cognitive meaning overlap.)

Finally, the significance of the utterance's grammatical mood takes effect, triggered by the finiteness of the Predicator. The mood defaults to being declarative, with the significance, 'Accept this utterance as a statement'. However, if the mood is interrogative (signalled by the Predicator-Subject order, for example), the "meaning" is, 'Reply, with the requested information'. Commands and exclamations have comparable meanings.

As with syntactically based structure, the signs here come from many levels of language, and their significance can be subtle. Consider the following. "The vast majority of Burmese share the official view, that the Rohingyas are foreign interlopers".[24] The comma after "view" is not standard; it signals that we must take 'the Rohingyas are …' as a separate item of information, additional to 'the … Burmese share the official view' and equally important, not as a subordinate item defining the official view.

7.6.2 Relation of Grammatical Meaning to Semantic Forms

GRAMMATICAL MEANING AND NONDESCRIPTIVE CONTENT MEANING

The discussion so far has shown how grammatical meaning operates on descriptive content, but has neither discussed nor illustrated its operation on other kinds of content. In principle, grammatical meaning works the same way on those other kinds. That can be illustrated with affective senses of *brute.* Consider "Miss Pennycott [had] … the neck and shoulders of a man. A true brute".[25] The grammatical meaning of the Reinforcer "true" is, 'Adjust upward both the descriptive element 'unrefined' in *brute*, and the emotion of dislike in *brute*'. In "Man (alas!) is bruter than a Brute" (SOED citation), the meaning of *–er* ('Specify the degree as comparative') applies to both descriptive and affective elements.

GRAMMATICAL MEANING AND BONDING

Chapter 2 set out the bond relationships between units of content meaning; it is grammatical meaning that specifies which units are to be bonded in the hearers' understanding. For example, in the sentence, "He had been helping to unpack his brother's car, when he saw his niece crying" (Chapter 2, §2.2.4.2), the grammatical meaning of "when" (i.e. 'Relate this clause to the previous one, as subordinate') entails bonding "had been helping" to "saw", by means of transitivity and the shared concept time. Similarly, the grammatical meaning of the relative pronoun *who*, in "For those of us who knew him" (Chapter 2, §2.2.4.2), instructs the reader to bond 'knew him' to 'us'. In "A shabby black city suit" (Chapter 2, §2.2.4.3), the modification meaning leads the reader into bonding the three modifiers to the head, 'suit', in their various ways.

Further, it is grammatical meaning that, in many instances, specifies the nature of the bond; for example, the significance of Actor, Participant, and Process is to specify transitivity as the bonding of a figure. The qualia specify the bonds between Classifiers and head.

GRAMMATICAL MEANING AND "BACKGROUNDING"

In the grammaticalisation literature especially, scholars have often noted that the significance of "grammatical items" is "backgrounded"; that is, it is reduced in salience or degree of consciousness in the mind of both speaker and hearer. I take as an example, "Another successful mountain-bike event ended yesterday with a record crowd". Having the grammatical meaning, 'past tense', realised as no more than an unstressed morpheme ("–ed", not a whole word) is useful because the past time is explicit in "yesterday"; but the tense form keeps the following narration grounded in the past unobtrusively: "took part … managed …" and so on. By being backgrounded and therefore not salient, grammatical meaning contributes to Rhematic structure (see Chapter 2, §2.3.4).

GRAMMATICAL MEANING AND MODALITY

Let us accept that modality is representation[26] of a speaker's assessment of probability or obligation in what is said (Halliday 2004: §4.2.2.1), or representation of the speaker's commitment to the factuality or desirability of what is said (Levelt 1989: 62). It can be stated straightforwardly and congruently (literally) in a figure, such as "I am certain that" or "That statement is only hearsay". Modal auxiliaries such as *may* and *should* represent such figures, by rankshift, as modifiers. Modal premodifiers such as *fake* and *alleged* can similarly be thought of as figures, and again as premodifiers by rankshift. For example, in "The alleged victim, a 14-year-old schoolgirl" (British National Corpus), "alleged" represents 'the police asserted [that the girl was]' (a victim). These modals background the comment on factuality or desirability, by grammaticising it instead of lexicalising it.

Modality is realised through the grammatical meanings 'Adjust' or 'Add'. (See §7.2.4.) For example, in "He may come", the meaning is 'Adjust the reliability of the assertion downwards', and for "He should come", the meaning is 'Add to "coming" the idea that it is an obligation'. Modality is thus the product of regular grammatical processes; it is not anomalous, nor as grammatically important as some literature seems to imply.

GRAMMATICAL MEANING AND FIGURES OF SPEECH

Figures of speech are usually treated as grammatically anomalous; that is, they are treated as rhetorical or stylistic devices outside the system. (Grammar, here, is the whole of the linguistic system, including semantics and lexis.) However, the concept of grammatical meaning provides that they are within grammar. Readers treat the figurative expression as they do idioms: they reconstrue the literal meaning, according to a clue (a sign) in the expression itself or the context, and replace it. They are thus following a more specific form of, "Replace this expression with its idiomatic meaning", one of the preliminary procedures that we met in §7.2.2.

For example, for the metonymy "a factory hand" (a part standing for the whole), the instruction can be formulated as, 'Replace the meaning of *hand* ('part of the body') with the whole of which that object is a part [i.e. 'worker']'. For

irony, the instruction is, 'Replace the meaning with its opposite'. The sign that carries this grammatical meaning is here, and usually, a clash ("semantic clash") between the literal meaning and the linguistic context it must fit into, e.g. the fact that factories do not have hands. For irony, intonation is usually another sign.

When a noun clause is rankshifted to act as subject of a clause, it is used as if it were a group, by analogy. Similarly, a restrictive clause acts in the sentence as if it were a word, like a restrictive premodifier – again by analogy. That is essentially the same procedure as metaphor; in Shakespeare's "Out, out, brief candle!", 'candle' is used analogically as if it were 'life'. Rankshift, then, is "grammatical metaphor" (Halliday 2004). So is nominalisation, where an Event meaning is used as if it were an Entity (see Chapter 2, §2.2.4). A statement, "You will leave now" (with appropriate intonation), can be used as if it were a command, 'Get out!' Grammatical modality used for a cognitive statement of modality is another instance. In grammatical metaphor, meaning is realised incongruently.

This concept of grammatical metaphor, explaining rankshift and nominalisation, is important in grammatical meaning and allows us to generalise about many forms of realisation that otherwise seem very diverse. For more detail, see Halliday (2004: chapter 10) and Simon-Vandenbergen and Taverniers (2003). Grammatical metaphor is commonly treated as a feature of grammar, independent of everything else. (See Halliday 2004, for example.) But the discussion here shows that it truly is metaphor, and occurs in the same way as figures of speech. (A later section will discuss grammatical metaphor further, and figures of speech are treated fully in Chapter 4, §2.3.)

GRAMMATICAL MEANING AND THE PRINCIPLES OF LANGUAGE

Just as grammatical meaning is at the linguistic end of the linguistic–cognitive dominance scale, so it instantiates the principles of language more fully than the other types of meaning. Obviously, it relies on the principle of functionality – grammatical meaning is function. It is situated fully in the speech situation, being dependent on the speaker, the hearer, and the words etc. as linguistic forms – and

(except in deixis) not dependent on the situation being depicted, as content is. Semiotically, it again contrasts with content, since it does not consist of subunits of meaning as content does. It also contrasts as a form of activity, since constructing utterance meaning is an activity within the overall activity of speaking and hearing. Finally, grammatical meaning is central to the systematicity of language, since it creates the relationships that bind the units together into a system.

7.6.3 Support for Grammatical Meaning

Grammatical meaning is often not described as it is here, and often not recognised as a type of meaning. But there is some implicit support for this description in the traditional grammatical literature, even in the standard grammars. For example, Quirk and others (1985: §5.26) say that making a phrase definite is to mark it as "referring to something which can be identified uniquely"; "identified" implies someone who does the identifying, and that can only be the hearer, and "can be" similarly implies a message to the hearer such as, "The referent can be identified uniquely (by you)". Other writers take "function words" strictly, in the sense of function for the hearer. Halliday and Hasan (1976) describe grammatical items as giving information about how to process a text discourse more efficiently.

There is more direct support for the idea of grammatical meaning in the semantic literature. There is early support in Nida (1975: 16–17). Bybee (2002) recognises knowledge of grammar as procedural knowledge. Blakemore (2002) and several others use "procedural meaning" to describe certain sorts of pragmatic meaning; they use the concept of procedure as it is used here, but do not apply it so widely; see for example Janssen (2007: 353) and various writers in Escandell-Vidal and others (2011). Fretheim (2011) applies it more widely. Cann and others (2009: §7.5) refer to it as "procedures/actions". Fawcett (2000: 34), Lamb (2004), Rijkhoff (2008: 798), and Wharton (2012: §28.4) are in accordance with the treatment here. Some writers describe grammatical meaning explicitly as giving the hearer instructions: Vallduví (1992/2003), Payne (1992: 2–3), Diessel (2006), Kirsner (2011), and Pietroski (2012: 135). A number of writers (especially

Hengeveld and Mackenzie 2008 and others in the Systemic Discourse Grammar school) come close to this procedural view, with the concept of operators. Even writers like Fodor and LePore (2002: 113–114), whose general approach to linguistics is quite different, use the concept. Givón (2001: 475) describes reference and definiteness as providing "mental-processing instructions".

The difference between content and grammatical meaning is confirmed psycholinguistically by several researchers. In aphasia, for example, different types of failure occur for "closed-class" and "open-class" items (Pulvermüller 2002: 115). The two types have distinct sub-processes (Ferreira and Slevc 2007: §27.1.2). In neurolinguistics, Pulvermüller and Knoblauch (2009) report that there are separate neuronal circuits for the two. Pulvermüller (2002: 117) is one of the very few writers to observe that grammatical meanings sometimes carry concepts, as when tense meanings carry the concept of time. Fortescue (2009) describes grammatical "templates", which complement the content meaning templates.

7.6.4 Cross-Linguistic View

As we would expect from the well-known cross-linguistic variation in grammatical systems, grammatical meanings vary across languages. For example, Chinese does not have a meaning to create tense (Halliday and McDonald 2004: §6.5). Bamileke-Ngyemboon, a Bantu language, does have meanings of grammatical tense, but has a four-term contrast (in content meaning) in both the past and future; e.g. the past has 'earlier today', 'yesterday', and two other options (Matthiessen 2004: 579). Tagalog has a concept of future time but realises it as aspect (e.g. 'not begun').

Some languages have grammatical meanings that do not occur in English. For example, cases that do not exist in English have meanings that do not exist in English. Chinese has phase as a grammatical meaning, construing events as determinate ("completive"), or as having been begun or at least attempted, with nothing implied about completeness ("neutral"). Languages such as Supiré, a Niger-Congo language, have a meaning that switches the reference of pronouns. French varies the meaning of adjectives according to grammatical position

(preceding or following the head). Tagalog has not only probability and obligation as modal meanings, but also ability, intensity, mutuality, and appearance, all expressed in clitics (Martin 2004: §5.5.3). Pitjantjatjara, a Pama-Nyungan language of Western Australia, includes continuity, deference, and commitment to the statement in its forms of modality (Rose 2004: 498).

7.7 Conclusion: Grammatical Meaning

7.7.1 Summary

The idea of grammatical meaning as the complement and partner of content meaning has no established place in linguistics, although there seems to be a growing convergence on it, as argued in §7.6.3. It has been presented in this section as resembling mathematical operators; for example, "a storm or atmospheric disturbance involving circular motion of winds" has content morphemes (underlined) that are operated on by the other, grammatical morphemes and by syntactic signs such as word order, to produce the sense 'a cyclone'. That parallels the operations in "(6 × 8) – (7 × 4)", producing the number 20; the operators act as instructions: "Multiply 6 by 8 … Subtract 28 from 48". (The parallel with phrases is not exact, however.)

Grammatical meaning has been presented here most often from the hearer aspect, as a procedure that the hearer carries out – 'Add the sense of this word to the sense of the syntactic head', for example. (The wording of the procedure has always been tentative, since these meanings are necessarily formulated and understood unconsciously.) But grammatical meaning has also been presented from the speaker aspect, as an instruction to the hearer. It has also been presented from the system aspect as assigning grammatical status; for example, 'Add this to the head' can be rephrased as 'status = modifier'; 'determine this group' can be rephrased as 'group status = definite'.

Three very general meanings were identified, matching the main semantic structures described in Chapter 2 – for co-ordination, complementation, and subordination – with more specific meanings for each. The grammatical senses compose the content senses successively into words, groups, figures, and

paratones. At the lexical level, the signs bearing these meanings are dominantly overt and lexical (morphemes); at the syntactic level, they are often covert (as with word order); at the higher levels, and for information structure, they are often phonological (e.g. tones, pauses).

7.7.2 Conclusions Drawn

GRAMMATICAL MEANING AS A SYSTEM

Grammatical meaning works with content meaning in procedures carried out by the hearer, as signalled in the text by the speaker, to construct the full meaning of a text. It is thus a system, in the sense of "A … set of related material or immaterial things forming a … complex whole" (SOED's sense <1>). As a system, it is like a computer system or the human nutrition system, with input (linguistic intention and intended meaning), processing (linguistic procedures indicated by grammatical meanings), and output (cognitive comprehension and overt responses such as replies and action).

ALL WORDS AS HAVING GRAMMATICAL MEANING

We have seen that for idiomatic expressions like "hard hat", hearers must recall meanings from memory, as a preliminary procedure. Pietroski (2012: 135), referred to earlier in 7.2.2, takes that further, asserting that readers get "instructions to fetch and combine concepts". He makes that as a general statement, implying that even content words carry a grammatical meaning, ('Fetch the meaning from memory'), operating as a preliminary to combining it. Accepting that argument, we would conclude that every content word, by its presence, "tells" us that we must carry out that procedure: strictly, then, even content words would have a grammatical meaning. Compare Traugott (2012: 166): "Words … are instructions to create meanings".

7.7.3 What Has Been Explained

MECHANISM OF COMPOSITIONALITY

Since the time of Frege, the "father" of compositionality, linguists have accepted the generalisation that language is compositional. According to Cruse (2011: §4.1), the principle is as follows: "The meaning of a grammatically complex form is a compositional function of the meanings of its grammatical constituents". Cruse goes on to amplify "compositional function" as "predictable by general rules" (2011: 65). The principle flows from the general principle of semiosis, since in constituting a system, linguistic signs operate on one another; acting on one another is what their situatedness consists of.

Here is an illustration of how the grammatical meanings of English operate as the "compositional function" or "general rules", in producing compositionality. The example, from a newspaper report, is simple, so that the outline is clear:

The terminal was constructed in 1976.

The reader is to compose the meaning from the printed words, as if acting on the following instructions.

1. In the first stage:
    a. make the Entity 'terminal' a head, and make it definite (according to the sign *the*), thus making an Entity group;
    b. make 'constructed' a head, and adjust its aspect and tense (according to the sign *was*), thus making an Event group;
    c. make the Entity '1976' a head (constituting a complete Entity group);
    d. combine '1976' with the preposition *in*, making a larger group.
2. In the second stage, make 'the terminal' (as Undergoer Participant) complementary to 'was constructed' (as material Process), and to 'in 1976' (as Circumstance).

That constructs a figure and completes the compositional meaning of the utterance. (The procedure is, of course, simply syntactic parsing seen semantically: syntax is a set of semantic signs.)

LIMITS OF COMPOSITIONALITY

Compositionality is extensive in language, then, and very systematic. But there is now a consensus that, "While compositionality is clearly a fundamental component of cognitive activity, it is equally clear that compositional behaviour is neither perfect nor unlimited" (Stewart and Eliasmith 2012: 598). Indeed, lack of compositionality need be a problem, as it has been in the past, only to those who assume that language is wholly informative and can be fully analysed logically.

Specifically, the following points may be made.

- Compositionality is sometimes counter-productive, since it needs all elements to be explicit. In an emergency, and in close personal relationships, full explicitness is an obstacle; it slows things down, and it weakens both forceful language and imaginative language, for example.
- When compositional principles are relevant, they are sometimes inadequate, as in associational combinations.
- Details that are composed often come from world knowledge, not from what has been stated, since language is often underspecified, allusive, or imaginative.
- A good deal of language does not consist of building blocks that are built up. Networks consist of relations, which cannot be reduced to their elements; and complementation structures, such as figures, are relational, so are not wholly compositional. Waves, fields, and holistic expressions such as holophrases and idioms are obviously not compositional. Grammatical meanings (being functional) are unitary, as with a pronoun's reference to an antecedent, and the deixis of *here*. (Grammatical meanings may seem compositional, since the paraphrases used in this book consist of a number of words; but that whole meaning is not composed of smaller units of grammatical meaning.)
- Language is sometimes "over-compositional": it composes the same item

twice in the same utterance (Lambrecht 1987: 229). That is, utterances are sometimes redundant – for emphasis, or to establish the Topic, for example. The principle of expressiveness outweighs the principle of compositionality.

- The principle of contextuality, which we must accept, reverses compositionality: "the meaning of each part depends on the meaning of the whole" (Goldberg 2016: 429).
- Finally, while "meaning" as traditionally conceptualised may be strongly compositional, the significance of language is more extensive, including strong elements of intention or purpose in the speaker aspect, and effect and response in the hearer aspect.

COMPOSITIONALITY: CONCLUSION

The explanation of compositionality given here transcends what has been offered in the past, because past discussion has lacked any explicit mechanism (implied in "compositional principles") that could carry out the process of composing meaning. That mechanism, consisting of the procedures embodied in grammatical meanings, operates at all levels of language, composing meaning into successively longer and more complex units. From the one-dimensional flow of spoken or written language, they compose the hierarchic structures that constitute the full meaning, in both the syntax-based structure and the content-based structure.

I believe that the structure of grammatical meanings given here, when combined with the explanation of structure given in Chapter 2 (especially the structure of Entity groups in §2.2.4, and the types of Process in §2.2.2), allows us to describe the composition of meaning with a degree of complexity, precision, and subtlety that goes beyond what has been provided previously.

CONSTRUCTIONS

The explanation of compositionality just given shows that there is inadequate justification for the concept of constructions as developed in Construction

Grammar (including Radical Construction Grammar) as a major explanatory concept. The concept is very vague, since it specifies no mechanisms; and it is very clumsy, since it entails positing an indefinitely large number of constructions.

Crucially, however, there is simply no need for it. The explanation previously of how "The terminal was constructed in 1976" is composed did not need to refer to "the passive construction" or "the clause construction"; all the meaning is conveyed by the words and other signs, with nothing left over to be conveyed by a separate entity (the "construction") carrying a meaning of its own. ("All the meaning is conveyed by the words and other signs" will be amplified later, in Chapter 5, when the internal structure of senses is set out, especially the role of semantic class, which guides composition of meaning.)

"GRAMMATICAL ITEMS" AND "CONTENT ITEMS"

The division of the lexicon into "grammatical/functional items" and "content items" – never explained clearly or defined precisely – has been explained here as a confusion: the concepts of GRAMMAR and CONTENT have been applied traditionally to the "items" (morphemes, effectively), instead of to their functions – even though "function" has often been used instead of "grammatical". The "functions" or "instructions" are not distinct from "meanings", since they are the significance of signs, and "meaning" is the usual word for signs' significance. Calling them "meanings" is natural for the further reason that they embody a message from speaker to hearer, even though it is tacit. That confusion – identifying the issue as one of word classes instead of word functions – is an instance of the many problems created by relying on the concept of classes and treating that descriptive concept as explanatory.

MINOR POINTS EXPLAINED

Some minor points have been explained as well. In particular, we have seen how the different uses of senses are managed – how expressions are switched from literal to figurative use, how referential use is converted to descriptive use and

vice versa, and how marked use is created. (Those uses will be discussed further in Chapter 4.) Finally, we have seen how words' semantic class is changed.

8 Discussion: Types of Meaning

8.1 Further Support for Meaning Types

A partial history of *perfect* supports the analysis into meaning types, by showing that many of the changes consisted of changes in meaning type, and that the types constitute a graded series.

When first used in English, in Middle English, *perfect* meant <1>, "Of a legal act: duly completed". In the same period, it developed the now archaic sense <2>, "thoroughly versed or trained *in*". That retains the core descriptive concept of <1>, namely complete, and adds approving attitude, represented in the definition by "thoroughly". Sense <3> also developed then: "Having all the essential elements". That has the descriptive meaning, COMPLETE IN ALL RESPECTS, retains the approval, and adds emotive meaning of admiration, which is suggested by "all" and confirmed by the SOED's citations. Sense <3e>, whose date is not clear in the dictionary, has a subsense, "Unqualified, pure", which has lost the descriptive meaning COMPLETE, but retained the emotive sense. Another subsense of <3e> is "Mere, sheer", which also has no descriptive meaning; it has derogatory emotive meaning (as in "My life's been *perfect* chaos for nearly a year" – SOED); it has social meaning, being both colloquial and dialectal in use. Its primary meaning is grammatical: 'Adjust the head's meaning by intensifying it'. (That is not very clear from the entry, which has no more than synonyms – "mere, sheer" etc. – but it is shown by the relevant citation: "You are a perfect baby in the things I understand!")

In that last sense of *perfect*, the sense element complete – roughly, 'at the end of the scale' – has grammaticalised into the instruction to adjust meaning toward the end of the scale. These shifts in meaning types also shifted *perfect* into new premodification zones: <1> was a Classifier; <2> is an Epithet, having traversed the Descriptor zone; <3e> is a Reinforcer. (See Chapter 2, §2.2.4.) The following

attested uses illustrate the zone shifts further: “contemporary level perfect pitch” has a Classifier; “ideal perfect correlation” has a Descriptor use; “the most perfect small Tudor house” has an Epithet; and “a perfect little bitch” has a Reinforcer. Those zone shifts are shown graphically in Table 3.1.

Table 3.1 Perfect in different zones

Determiner	*Reinforcer*	*Epithet*	*Descriptor*	*Classifier*	*Head*
		contemporary	*level*	*perfect*	*pitch*
		Ideal	*perfect*		*correlation*
The		*most perfect*	*small*	*Tudor*	*house*
A	*perfect*	*little*			*bitch*

The whole history is represented in Diagram 3.6. It is like Diagram 3.1, on *capital*, in §2.5.2, with the types represented in a column of boxes. Thus, sense <1> has only descriptive meaning, ‘Complete’; sense <2> has the descriptive meaning, ‘Completely trained’, + the attitudinal meaning of approval. The last sense has neither descriptive nor attitudinal meaning, but has emotive, social, and grammatical meaning. (The descriptive meanings in the boxes are paraphrases, to highlight the continuity of ‘complete’ through the changing senses.)

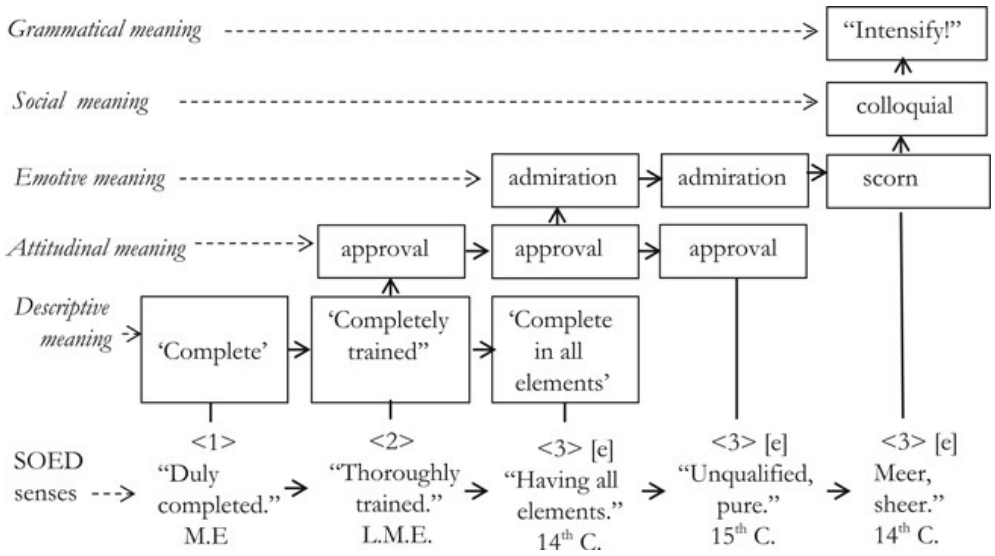


Diagram 3.6 Development of meaning types in *perfect*

That history of *perfect* gives powerful support to the account of meaning as

having types, because it shows that different meaning elements have different qualities and functions – represented by the types – which have enough integrity to be added or lost independently.

IMPLICATIONS FOR LEXICOGRAPHY

This section has highlighted some of the difficulties faced by the writers of dictionary entries, implying suggestions for improvement. Descriptive meaning is well treated in dictionaries. Emotive meaning is not well treated, however. In most dictionaries, there is no principled way of showing it, with the result that it is sometimes implied by choice of synonym but often completely omitted. For example, SOED gives no indication that *nag* expresses scorn or dislike; and a *jade* is "an inferior or worn-out horse", which hints at the fact that the word is emotive, but does not make it clear. COBUILD's dictionary for advanced learners (2001), however, has two deliberate strategies for the problem, illustrated by their entries for *blimey* and *babe.* "*Blimey*. You say *blimey* when you are surprised by something or feel strongly about it". "Babe. Some people use babe as an affectionate way of addressing someone". The methods are admirably explicit, but do not show that the emotion is the meaning.

Social meaning is much better treated (in SOED, at least), sometimes by symbols and sometimes by descriptive labels, which have some linguistic rationale. The dictionary uses the field labels "poetic" for *charger* and "literary" for *steed*, but fails to record that *pony* in its first two subsenses is only used in the field of horsemanship. As with emotion, COBUILD's dictionary explains social meaning explicitly, using "style labels", such as "formal", "journalism", offensive", and "written".

In standard dictionaries, grammatical meaning is limited to part-of-speech labels. Dictionaries intended for advanced learners do much better, and deserve emulation. It is striking that they typically formulate the meaning in terms of what the user does, as I have; for example, "If you want to [do such-and-such], you use …".

The conclusion is that the types of meaning set out in this chapter can provide clearer, more systematic, and more helpful dictionary explanations of meaning

than are current.

8.2 How Non-Hierarchic Structures Are Built

INTRODUCTION

The explication of grammatical meaning given in §7 shows how hierarchic structures are built – subordination builds levels in the vertical dimension (higher and lower ranks), and co-ordination and complementation build structures on the horizontal dimension (on the same rank). The construction of non-hierarchic structures remains to be explained.

IN UTTERANCES

Networks in utterances are built incidentally as the words concerned are built up into hierarchies. For example, in "He buried his children bitterly" (used in Chapter 2, §3.2), primary processing links each word with its neighbours, in accordance with the grammatical meanings, building the syntactic hierarchy. In a secondary process, pre-existing semantic links are activated, such as 'burial–death' 'child–death–bitterness', and 'man–child–love'. The activation is not brought about linguistically, by grammatical meanings, but psychologically, by semi-automatic priming of existing links, using real-world knowledge (e.g. death of their children often makes people bitter).

Wave structures are set up in several ways. The rise and fall established by the alternation of grammatical and content items is inherent in those items' nature. Other waves form because affective and sometimes social meanings establish peaks; they are also affected by the content of particular words, and by the hearer's understanding of the speaker's intention. There do not seem to be specific grammatical meanings for the structures.

Field structures arise from the nature of social and emotive meaning. Hearers understand them as characterising the speaker and – since meaning is always situated – as characterising whole utterances and even whole texts. Again, there

do not seem to be specific grammatical meanings for them.

8.3 Relations Among Meaning Types

The meaning types exist on two scales, of abstractness and subjectivity, which follows from the account given previously of the particular types and how word meanings have developed. Descriptive meaning is relatively concrete (in the sense of closeness to sensory experience); it typically begins so, and derived meanings are more abstract. Grammatical meaning is the most abstract.

The types grade in subjectivity, from descriptive through attitudinal, emotive, and social to grammatical, in that they increasingly serve the interpersonal function. Descriptive meaning is cognitive and wholly ideational. Attitudinal and emotive meaning have a basis in cognition; social meaning does not, but is nevertheless informative (conveying to the hearer the speaker's social standing). Grammatical meaning has no information value, being concerned with how the information conveyed by the other types is to be constructed in the hearer's mind; it is wholly subjective and interpersonal. The increasing subjectivity has another form, that of grammaticalisation: the types grade from being wholly representational (in descriptive meaning) to being wholly functional i.e. grammatical. (This gradation is in effect the cognitive–linguistic scale of Gentner and Boroditsky (§2.4) seen from a different perspective.)

The relationships are set out in Diagram 3.7. It is basically a semantic map of the relations between meaning types in synchronic use, but it doubles as a diagram of historical development (as illustrated in the word histories earlier), indicated by arrows. Thus, it shows the progression in abstraction and subjectivity, and how one meaning type evolves from another historically. The presentation of descriptive meaning is simplified, since some descriptive senses are moderately or very abstract, as with *existence* and *nothingness*; but it is shown in the diagram as concrete, since that is its basic form. The diagram is also simplified in not showing that social meaning sometimes develops from attitudinal and emotive meanings. (The arrows indicate only that a new sense appeared, not that the old sense disappeared.)

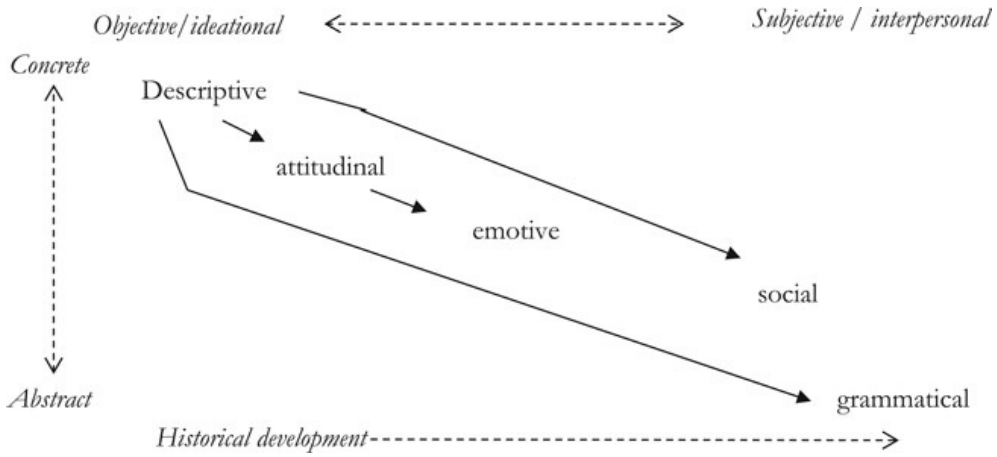


Diagram 3.7 Relations among meaning types (simplified)

8.4 Relations Between Meaning Types and Semiotic Strategies

All types of content meaning (descriptive, attitudinal, emotive, and social) use the descriptive semiotic strategy (see §2.5.2 previously). Words and other signs using the pointing strategy (e.g. demonstratives and pronouns) have grammatical meaning, since they guide the hearer in where to find the relevant content. The naming strategy does not evoke content meaning of the linguistic type but does evoke cognitive content (see earlier §2.4).

Most grammatical meaning does not relate to any of those semiotic strategies, since the strategies serve to identify referents, but grammatical meaning serves the hearer's manipulation and structuring of the referents, once they have been identified.

8.5 Discussion: Cross-Linguistic View

The support cited for types of meaning so far in this chapter implicitly claims that the types of language meaning occur in languages other than English, since the support is always given for a meaning in general, without restriction to any one language. However, strong explicit support can be given, as illustrated in the following paragraphs.

I take it as clear that emotive and attitudinal meaning are common and

widespread in the literature of the world, in both modern written literature and ancient oral literature such as that of Homer in ancient Greek, and "Beowulf" in Old English. Indeed, literature could be defined as heightened language – language that transcends descriptive meaning and the ideational function by the incorporation of these other types of meaning.

Social meaning is well known (although not always given that label), in the social appropriateness of certain words and styles. Obscenity and profanity are obvious examples, in many languages; in Russian, patronymics, diminutives, and pet names in addressing people carry social meanings (Comrie and Stone 1978: 179–192). Less well known are instances of "mother-in-law language" in some Australian languages, in which everyday words must be replaced by synonyms when addressing certain relatives, or even if they are merely present (Dixon 1983, for instance).

Grammatical meaning is carried by articles, deictics, morphological inflections, and syntax (in word order), for example. Those forms occur in a very wide geographical and typological range of languages, so grammatical meaning also occurs very widely.

There is evidence that meaning types develop gradually through language history. For example, Lehmann (1993) implies that Proto-Indo-European had very weak grammatical meaning. In Gil's account (2000, 2005), Riau Indonesian has only one syntactic category and only one kind of grammatical meaning (i.e. association); the others presumably develop from that, in more complex languages. Nondescriptive meanings developed in Melanesian pidgin, on its way to becoming the creole, Tok Pisin (§2.1). That suggests further that these forms of meaning can constitute the basis for a semantic typology. Old English seems to have had some affective meaning, developing the distinction between emotive meaning and attitudinal meaning only gradually. Further, it seems to have had, in our earliest records, no social meanings in general use (though perhaps there were dialectal meanings), but to have had a literary register in its poetry; social meanings developed as literature did, and as literacy increased.

9 Conclusion: Types of Meaning

SUMMARY

This chapter has described the types that make up the variety of meaning, and that constitute the individual senses to be described in the next chapter. They were divided into content and grammatical meanings. The first type of content was descriptive meaning, which ranges from abstract concepts through concrete ones to meanings approximating images, and which carries out the ideational function; it has often been taken erroneously as the whole of meaning, as when it is equated with "information", or described as being simply "conceptual". Then came emotive and attitudinal meaning, which carry out the interpersonal function. The last type of content was social meaning; it was divided into style (e.g. formality), dialect (e.g. regional variation), and field (e.g. nautical and legal fields).

Grammatical meaning was presented as operating on the content, functioning to combine and refine the content, and composing the structures studied in the previous chapter. It has three types: making units complementary, co-ordinating them, and subordinating them. Seen from the system aspect, grammatical meaning gives semantic status to senses, groups, and figures; and it gives syntactic status to words, phrases, and clauses. Those statuses include being modifier or head, being indefinite, being Subject, and being independent. From the speaker aspect, grammatical meaning amounts to guidance as to the status to be assigned. From the hearer aspect, it can be seen as procedures to be followed, in assigning status and combining senses, as part of understanding the whole text.

Types of meaning are summarised in Diagram 3.8.

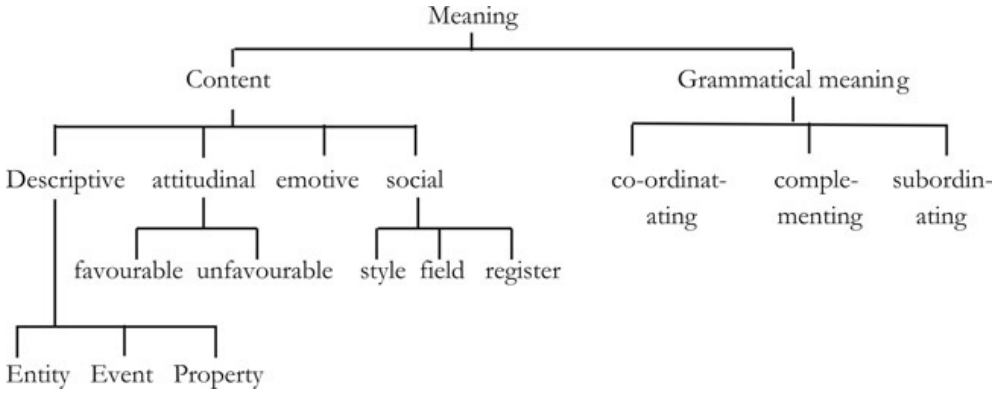


Diagram 3.8 Summary of types of meaning

In the histories of *capital* and *perfect*, the types of meaning have been discussed as layers. A useful alternative metaphor is to see them as planes; that emphasises their differences, such as the differences in which qualities like generality apply to each type of meaning, and their origin in different faculties of mind. (However, the planes are not easy to reconcile with the fact that each type of meaning, a network of its own, is integrated with the larger semantic network.) Diagram 3.9 represents the content planes of meaning contained in the first part of "What scourge for perjury can this dark monarchy afford false Clarence?"[27] The uppermost plane shows descriptive meaning, with conceptual meaning in small capitals, and the elements of descriptive meaning carried by grammatical items in lower-case letters. Lower planes show the other types of content, in turn. Thus, the meaning of *scourge* is composed of conceptual whip, disapproval as attitude, and anger as emotion. *Dark* has no descriptive meaning, so there is a gap corresponding to it, on the descriptive plane.

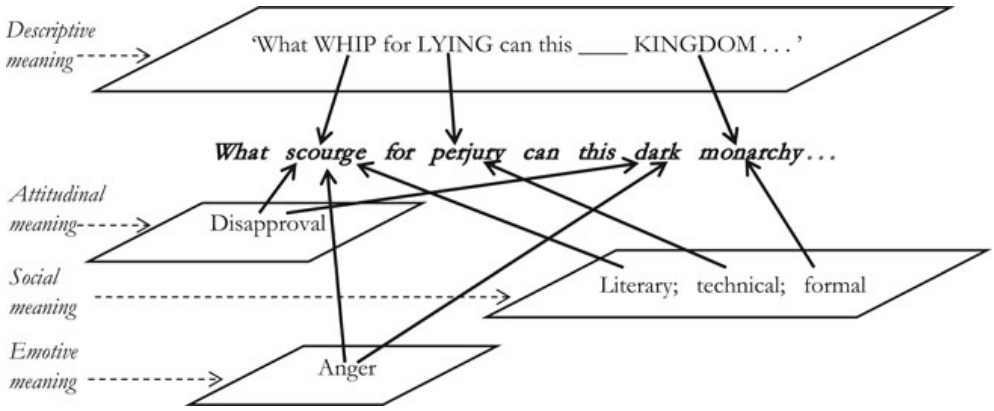


Diagram 3.9 Planes of meaning

SPECIFIC CONCLUSIONS

The discussion has relied on several important concepts, which will continue to be important in the rest of the book. The first such concept, carried on from the previous chapter, is realisation: the communicative intention is given semantic form and expressed through morphology, syntax, and phonology, becoming real

as audible speech or visible writing. New concepts include aspects of meaning (speaker, hearer, and system aspects); levels of meaning, mirroring the levels of form that express it (lexical, morphosyntactic, and phonological); and areas of meaning (linguistic and cognitive).

The distinctions drawn are in themselves fairly clear-cut; but there are some situations in which their application is not, either because speakers find the ambivalence useful, or because the evolution of language has not yet differentiated them fully.

WHAT HAS BEEN EXPLAINED

As well as explaining the meaning types themselves, the chapter has given fundamental explanation of semantic structure (and syntactic structure) as set out in the previous chapter. That should be clear for the major structures, in which content meaning is very obviously structured by the grammatical meanings. The theory can also deal, however, with such lesser matters as the undifferentiated structures discussed in Chapter 2. For example, the difference between holophrases and vague words is that holophrases have different types of meaning. For example, Hitler is said to have stated that his defeat of Britain would be like wringing a chicken's neck. Churchill is said to have retorted: "Some chicken! Some neck!" That retort combines the implicit statement that Hitler will fail, the feeling of defiance, an attitude of scorn, an expression of British patriotism, and solidarity with the people (through folksy slang). It gained its force – and gained Churchill popularity – from that holophrastic combination of meaning types, along with its brevity.

The nature of such sense relations as synonymy and antonymy has been given partial explanation, along with the extent to which meaning is linguistic rather than cognitive. (Both topics will be developed in later chapters.)

The general principles underlying the theory, set out in Chapter 1, have been developed further. Functionality underlies the fundamental distinction here, between content and grammatical meaning. Grammatical meaning in particular is required by the principle of human activity, since the latter is interactive. The expressivity principle helps to explain the range of meaning types, since they

extend our range of expression, and word histories have shown how individual words have become more expressive over time. The word histories have provided incidental explanation for how words develop historically (to be discussed further in Chapter 6).

New secondary principles, adumbrated in §1.2, have also been shown at work: situatedness, seen especially in affective and social meaning; the phenomenological principle, in the fact that examination of everyday uses of language has shown types of meaning that have been missed by most studies of semantics in the past; and intentionality, in the contrast in many utterances between a fully intentional meaning and a less intentional, or even unintentional, one.

Notes

1. *Economist*, 19 November 2016, p. 32.
2. Based on Tennyson's "Charge of the Light Brigade"; "him" refers to the British Prince of Wales. *New Zealand Herald*, 11 November 2013, p. A10.
3. *New Zealand Herald*, 16 October 2017, p. A15.
4. Derived from "talk pidgin".
5. *New Zealand Herald*, 18 September 2017, p. A3.
6. *New Zealand Herald*, 29 March 2017, p. A21.
7. www.telegraph.co.uk, 13 April 2013.
8. I use *expressive* in its broad, general sense, as 'full of expression'; it is the standard word for that meaning, and its relation to *Expressive* is useful.
9. The airline's phrases; *New Zealand Herald*, 22 December 2017, p. A24.
10. Negative tags have other uses, such as hedging an assertion.
11. *New Zealand Herald*, 18 March 2017; article on American politics.
12. *Economist*, 13 February 2016, p. 80.
13. Thai has alternative synonyms for male and female use (Haas 1964).
14. British National Corpus.
15. *Economist*, 11 March 2017, p. 11.

16. *New Zealand Herald*, 11 March 2017.

17. *New Zealand Herald*, 11 March 2017; cited previously.

18. The phrase meant ‘distance from you at which a bird will fly away’, not ‘the distance a bird can fly’.

19. In the 20th century, it was used in primary schools for handwriting practice, since it contains every letter of the alphabet.

20. That analysis follows Systemic Functional Grammar, as set out in Chapter 2. Some grammarians would disagree, but the grammatical analysis does not affect the semantic point being illustrated.

21. From the same newspaper column as “I’ve tried to avoid statistical analyses…”.

22. Contradiction or inconsistency in meaning. See Cruse (2011: §12.2.1).

23. *New Zealand Herald*, 10 March 2017, p. A18.

24. *Economist*, 9 September 2017, p. 11.

25. British National Corpus.

26. “Representation” is used as a common linguistic term, loosely. It is quite misleading if taken strictly, to denote presenting again in the same form.

27. Shakespeare, *Richard III*, act I, scene iv.

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4

Senses (2)

Their Dimensions and Uses

DOI: 10.4324/9781003259381-4

1 Dimensions of Meaning

1.1 Introduction

INTRODUCTION TO THE CHAPTER

This chapter continues Chapter 3, as an explanation of senses. That chapter dealt with the first main topic for explanation, types of meaning; this chapter deals with the second and third main topics, dimensions of meaning (the rest of §1) and the use of senses (§2). One fundamental principle that has been referred to previously, but incidentally, becomes central in this chapter: construal, as one application of the general principle of expressivity.

INTRODUCTION TO DIMENSIONS OF MEANING

A particular physical object like a beam of timber can be specified by its type of

material, e.g. wood, and its physical dimensions, i.e. length, breadth, depth. A particular sense can also be specified by its type of "material", e.g. descriptive meaning, and its dimensions, e.g. generality and vagueness. Like physical dimensions, semantic dimensions mostly work on a scale (e.g. general to particular, vague to precise), but some have a set of alternatives, as a paradigm. The idea of dimensions of meaning may be new to the reader, but the nature of most dimensions will be familiar, as those examples of generality and vagueness are.

This concept of dimensions is taken from the work of Cruse, especially Cruse (2011). Most of the dimensions described here are as in that work, but a couple have been added, and two have been omitted.[1]

NEED FOR DIMENSIONS IN A THEORY OF SEMANTICS

We have seen that closely related words often differ in the types of meaning discussed in the previous chapter; but senses can be different while being of the same type. Thus, *twelve* and *a dozen* have the same descriptive meaning, but differ on the dimension of vagueness. *Arm* and *forearm* differ in generality. The dimensions of meaning are also needed to explain the subtle shifts of meaning when a single sense is used in different contexts, and to explain the nature of semantic change.

RELATION TO LEVELS OF LANGUAGE

Like the examples just given, most of the examples to be used will be word senses, but dimensions apply to the sense of a whole group, as well; for example, "the basic types of graphics" makes a single complex sense that is less general than that of "graphics". Senses conveyed by phonological contours also have dimensions (such as vagueness), not only senses conveyed by words. Syntactic constructions can differ on the dimension of formality (e.g. light verb constructions such as "take a break" are rather informal); so can morphological uses such as ellipsis. Morphological categories such as tense, person, and number might be naturally thought of as dimensions but are not included here, because

they are signs carrying meaning, rather than elements of meaning.

ARRANGEMENT OF THE SECTION

The dimensions are arranged into two groups. The first, and larger, group consists of dimensions that are inherent in particular senses, in §1.2; they are arranged with the most fully linguistic ones first, e.g. vagueness, and the most cognitive last, i.e. generality, which is close to the general/particular classification of everyday knowledge and is the basis of scientific classification. Their position on the cognitive–linguistic scale (Chapter 3, §2.4) is important, because being close to the linguistic extreme allows a word to be construed more freely: 'luck', a highly linguistic sense, can be construed into many shades of meaning, but 'mastodon' cannot. The dimensions in the second group, in §1.3, are those that apply to the relationship between senses, and relationships between sense elements – "relative" dimensions. (The distinction is from Cruse 2011: §3.3).

1.2 Inherent Dimensions

1.2.1 Vagueness

DEFINITION AND EXAMPLES

The dimension of vagueness is the continuous scale between being vague and being precise. Its nature is made clear by a distinction drawn by Cruse (2011: §3.3). A sense can be vague in being ill defined, or in being lax in how it is applied. 'Later' is vague in being ill defined, while 'this afternoon' and 'on Tuesday' are more precise in being more tightly defined. 'Circle' is vague in the laxness with which it is applied to both a geometrical figure and an irregular group of people gathered around a central point.

CHARACTERISTICS

Vagueness is most easily demonstrated in phrasal senses, as in statements that a person will be here "in a few hours' time" or "at 2.15". However, it can be seen in word senses also, as in vague *kind*, and more precise *benevolent* and *generous*.

One important characteristic of vagueness is that it is distinctively linguistic, since it is a quality of meanings, as it is relative to speakers' intentions, and to other senses. By contrast, concepts are relatively independent of speakers; they may be general, but cannot be vague. We have seen that the meaning of the word, *circle*, is often vague, but the concept, circle, is not. As we construe concepts into language, we create the senses, with dimensions like vagueness; if there were no difference between concepts and senses, as with circle and 'circle', the lexical differences between languages would be minor. (Its characteristic application to language is the reason for its being put first in this section; generality is least linguistic, and is put last.)

Vagueness has a bad reputation – as a stylistic fault – but it is often valuable, as in "Senate investigators have highlighted the role of banks, lawyers, and other 'gatekeepers' in enabling grand corruption".[2] None of *grand*'s precise senses fits exactly; so it acquires other sense elements from the context: 'dignified', 'impressive', and 'splendid'. In that use, the word is contextually quite evocative, because of its vagueness.

APPLICATIONS

In the examples just given, the vagueness applies to descriptive meaning, but it can apply to attitudinal meaning as well. The attitude expressed may be vaguely 'humorous', or precisely 'facetious' (in the sense of 'trivialising') or 'ironic'. The contextual emotive meaning of "Good luck!" can be precise (a warm, friendly hope that the hearer will do well answering questions in a quiz) or vague (a hope that the hearer will do well in life). The affective meanings conveyed by phonology are often vague, sometimes relying on lexically expressed meaning to gain more precision. As the examples indicate, vagueness can apply to all three semantic classes (Events, Entities, and Properties) and to grammatical meanings

as well.

Vagueness sometimes contributes to the structure of a figure or a group. The value of phrasal verbs lies partly in that they allow the precise part of the intended meaning to be delayed to the end, as it would be in "For exercise, she often took the dog for walks" (instead of "she often walked with the dog"). One of the main functions of modifiers is to make the sense of a group more precise than the sense of the head on its own: consider "a geometric circle" and "six minutes later", and the post-modifying Property groups in "a chair with no arms" and "chair with no arms and a high back".

Semantic change often consists of change in this dimension: *honest* originally meant 'deserving respect for social position', but became vague as 'deserving respect' (for almost any reason). Vagueness sometimes distinguishes synonyms, such as *circular* and *round*.

1.2.2 Point of View

DEFINITION AND EXAMPLES

The point-of-view dimension is illustrated in demonstratives such as *this*/*that* and *here*/*there*. Strictly, it is the scale of distance, from near to far, in relation to speakers' physical point of view when they speak. The concept is extended, however, to include other word senses that shift their reference ("shifters"), as with the pronouns *I, you*, and *he*, with *now* and *then*, with tense forms (both *walks*/*walked* and *has walked*/*had walked*), and with other forms of deixis (see Cruse 2011, for example).

CHARACTERISTICS

As the examples just given show, this dimension creates paradigms of forms, not a scale. They show, further, that this dimension is based in the speech situation: speaker and hearer, in a particular time and place – which makes this a wholly linguistic dimension. Like *deixis*, the term *point of view* has an extended range,

including social point of view, which controls the use of courtesy forms and degree of formality, and in some languages use of second-person pronouns, as with *tu* and *vous* in French, and *thou* and *you* in old forms of English.

The fact that all the examples just given are grammatical words is noteworthy; not many of the dimensions apply to grammatical meanings, and point of view is rarely a dimension of content meanings. Examples of point-of-view content words include the following: the Events words *come* and *go*; Property words of direction such as *up* and *down*; and pairs of complementary synonymous expressions such as "I like it" and "It pleases me", where the alternative subjects create alternative points of view.

The point-of-view dimension is thus in its way central to language. It arises from the fundamental fact that language is interchange between people; it is embodied in the grammar of a large proportion of languages, as person and tense; and in English it has been retained in morphology as the language has become more and more analytic in type.

The point-of-view dimension relates antonyms rather than synonyms – *this, here*, and *now* have antonyms but not synonyms.

1.2.3 Boundedness

BOUNDEDNESS IN ENTITIES

EXAMPLES AND DEFINITION

With count-nouns, such as *a loaf* and *a stone*, we can form an image of the referent, which is bounded by an outline. For mass nouns, like *bread* and *stone* as substances, there is no boundary or outline, but there is extent in space: the senses are less "bounded". Here, boundedness is the degree of the referent's limitation in space and, by extension, limitation in time.

CHARACTERISTICS

Boundedness is clearly cognitive with proper nouns, since “Lake Superior”, for example, can only be conceptualised as bounded. However, it is largely linguistic in *loaf* and *bread*, and in the count and mass uses of *wine*, since there we have word senses that vary only in boundedness. Proper nouns take being bounded a stage further than common nouns; abstract nouns take being unbounded a stage further in the other direction. Those paradigms of four types of noun and four types of Entity are linguistic, transcending their cognitive basis. Obviously, the four types of noun constitute four steps in a scale.

In other circumstances, there is a gradation of senses, not steps, from being fully bounded (unique) to being fully unbounded. That is sometimes referred to in the literature as the scale of “individuation”. The senses of proper nouns and the senses of Entity groups that make the referent unique are fully “individuated”. Note that it is the conceptualisation implicit in the class of noun or in the phrase structure that controls individuation, not the referent; we can refer to the same physical object as “a stone” (bounded) or as simply “stone” (unbounded). Again, we can have “Dr Smith”, fully individuated, and less individuated “the doctor”, denoting the same person.

APPLICATION

We saw, in Chapter 2, §2.3.4 on salience, that *university* changed its salience with its syntactic role in a phrase. Those changes in salience are accompanied by changes in individuation. Consider the following: “Some were there in protest at a referee decision they say robbed their team of a win”.[3] “A decision by the referee” would make the referee more individuated in our minds; in “a referee decision”, the indefinite article modifies “decision”, so that “referee” has no article at all and is quite indefinite, with minimal individuation. In “the same type of grave-good assemblages”,[4] both pre-modifying senses are reduced in individuation, which is signalled in their having singular form, although their real-world referents are plural. Even proper nouns are now treated this way: “a Steven Gerard goal”,[5] versus “Steven Gerard’s goal”.

That reduction in salience and boundedness is thus often realised in morphological reduction: plurals are reduced to singular form (“doctor*s*’ parking”

becomes “doctor parking”). That sometimes results in ambiguity, as in “an antique show” (‘a show of antiques’ or ‘an ancient/venerable show’). This reduction of Entities is characteristic of noun incorporation and of polysynthetic languages; see Mattissen (2006).

BOUNDEDNESS IN EVENTS

EXAMPLES AND DEFINITION

Events, being extended in time, are bounded in a more straightforward sense. In “As he was leaving”, the action is conceptualised as lasting for an indefinite length of time; the Event (as a sense) is “unbounded”. In “He left”, the action is conceptualised as not lasting through time at all and is effectively instantaneous; the Event is “bounded”. Here, boundedness is the degree of the referent’s limitation of extent in time.

CHARACTERISTICS

As the example of *leaving* and *left* show, boundedness in Events is a matter of how the referent is presented in the meaning, not simply a matter of reality, as it sometimes is with Entities.

APPLICATIONS

The gradation of boundedness explains the common distinctions between “aspectual classes”. In “It’s raining” and “They were walking along the path”, the Events are to be conceptualised as lasting through time (or “durative”) indefinitely. They have neither a start point nor an end point (neither “initial bound” nor “final bound”); they are “activities”. In “It rained until lunchtime” and “They walked till they were tired”, the Events have a final bound and are “accomplishments”. In “They walked for half an hour”, there are both initial and

final bounds. (Both Predicator and Circumstance contribute to defining the Event sense.) Those three types of Event are progressively more fully specified, and make points on the scale of individuation. Some Events are not durative at all, but construe the happening as instantaneous ("punctual"), as in "He remembered", and "She departed". The Event senses of many individual words are vague as to boundedness; the bounds of *climb* are set only by Property phrases as in "They climbed for six hours" or situational context as in "They climbed the mountain". Consequently, the classes formed are classes of contextual meaning, not classes in the structure of the language.

These distinctions in "aspectual structure" or "Aktionsarten" form a paradigm, illustrated in Table 4.1.

Table 4.1 Aspectual structure and Event types

Example	*Name for type of aspect*	*Initial bound?*	*Final bound?*	*Durative?*
'... built'	Doubly bound	Yes	Yes	Yes
'... have built ...'	Final-bounded	No	Yes	Yes
'...being built'	Non-bounded	No	No	Yes
'... [to] arrive ...'	Non-specified	No	No	No

The account given here differs from the standard one (see Cruse 2011: §15.4.2, for example), in excluding several criteria often applied. Change is excluded: since Events entail change by their very nature, it cannot be a criterion for different kinds of Event. Stativity is excluded: it is the opposite of change. Agentivity is excluded, since it is an element of transitivity, not of Events, which (as linguistic senses) can in principle be construed as transitive or intransitive. Being repeated ("iterative"), being causative, and being the beginning of a new state ("inchoative") are excluded; they are elements of cognition rather than language – they have no expression by a grammatical form, in English. (Some other languages do have grammatical expression of such differences – in their morphology; their semantic system is different from that of English.)

At issue is the distinction between cognitive and linguistic areas in semantics, introduced in Chapter 3, §2.5. I am here refining the distinction, insisting that for a distinction that exists in cognition to be also a linguistic distinction, it must

affect the systematic realisation of meaning. For example, there is a (cognitive) distinction between male and female in both frogs and human beings; it becomes linguistic, and part of English, for *human being* and *person*, and for *man* and *woman*, since we must use *he* for males and *she* for females; it is not linguistic for *frog*.

BOUNDEDNESS IN PROPERTIES

Boundedness, as the concreteness from which concepts can be abstracted, does not apply to Properties. The reason, to be explained fully in §3.5, is that their cognitive basis is itself an abstraction.

SUPPORT FOR THIS ANALYSIS OF BOUNDEDNESS

Rijkhoff (2002) gives a similar account, showing the parallels between Events and Entities. He calls the boundedness of Entities "Shape" and their unboundedness "Heterogeneity". He describes them as having "Seinsarten" (aspectual features), to match the "Aktionsarten" of Events.

Schreuder and Flores d'Arcais (1989) give a psycholinguistic basis for the main distinction in boundedness, between common nouns and abstract nouns. It is the perceptual nodes the authors describe that specify bounds in space and time; the functional nodes do not specify bounds and denote abstractions. When we hear an abstract noun or a durative verb, the functional nodes are activated, but not the perceptual ones.

CONCLUSION: WHAT IS EXPLAINED BY BOUNDEDNESS

We have seen that the boundedness dimension explains a good deal of the grammar of familiar languages, especially in their morphosyntax, such as verbal aspect and noun classes, and the agreement rules they entail.

It also contributes to the distinctions between material, mental, and relational Processes. The boundedness distinctions apply fully and clearly to material

Processes, facilitating the full degree of transitivity they carry. Mental Processes are not perceptible, so their potential for boundedness is weakly and unevenly developed, as is their transitivity. Relational Processes (as in *is, has, equals*) are not durative – are not Events – so do not carry the boundedness that characterises transitivity.

Finally, boundedness explains an important part of the nature of semantic classes. Events are bounded in time, but Entities are bounded in space; the nature of basic entities is determined by their being spatial. (By "basic entities", I mean the cognitive concepts from which Entity as a semantic class has been developed; the point is further explained later.) As we have seen, the types of word by which they are realised is controlled by their boundedness, in space or time. Properties are not bounded in either respect.

1.2.4 Transitivity

NATURE OF TRANSITIVITY AS A DIMENSION

DEFINITION

Transitivity is usually treated simply as a syntactic phenomenon, but the syntactic structure is the realisation of a semantic phenomenon. Semantic transitivity, then, is the conceptualisation of events in the world as being initiated by an actor and flowing through the event to an affected object. Each event thus unfolds through time and is a quantum of change.

CHARACTERISTICS

The degree of semantic transitivity varies in the following ways (illustrated with invented examples). First, the degree of agency varies, primarily according to whether the actor is a person, an animal, or an inanimate object; "He shook the bottle" is more transitive than "The earthquake shook the house". Second, the

degree of affectedness varies; “He shot the rabbit” is more transitive than “He shot at the rabbit”; “to drive a project” has less affectedness than “to drive a car”. Third, the affected object’s degree of individuation varies (Hopper and Thompson 1980); “He hurt the child” is more transitive than “He hurt himself”, because in the latter the affected object is not distinct from the actor.

Moreover, speakers can often control whether an Event is to be transitive, in choosing between transitive and intransitive forms of the verb; in present-day English, it seems that “transitive” verbs can be used intransitively almost at will, and that transitivity can be ascribed to Entities and Properties (making them Events). Examples include: “He was trespassed from Queen St”;[6] “mistakes that allow myths to perpetuate”;[7] “We used to mode that boat”;[8] “He was a shy man, but he had to unshy himself”.[9] Also, speakers can use such forms as “This book reads well”, avoiding mention of the agent who does the reading but also eliminating the transitivity. Speakers can impute transitivity to real-world events that have none: “Often, he … slept the whole of the day away” (British National Corpus). Finally, the Undergoer for some transitive verbs is unreal, in that it has no existence apart from the action of the Process, as in “He sang a song”. Thus, transitivity is construed semantically; the scale of transitivity is linguistic, not a matter of the real world (as we take causation to be); it is a dimension of meaning in English and other languages of the accusative type (i.e. not ergative). The Process of a figure dominates its transitivity, but we have seen that the Participants often affect it; transitivity is a property of the figure, not of the Process alone.

OTHER APPLICATIONS

Most of the examples just given used Events of the material-Process type. Those Events contrast with mental-Process Events, which do not call on the “force dynamics” (Talmy 2011: §4.3) of material-Process Events. In figures using such mental events as ‘know’, ‘recognise’, ‘want’, and ‘see’, there is less agency (the events happen without much willpower being exerted); there is less affectedness (the things known or seen are not changed by the event); and there is often little individuation of the thing affected (in “He decided that he’d go” and “He felt

hungry", there is no "thing" distinct from the subject entity).

In relational Processes, there is no semantic transitivity at all, though there is often syntactic transitivity. In "He exceeded the speed limit" and "It weighed a pound", there is no "flow" from Actor to Event, and no affectedness. Relational Processes have no semantic transitivity because they do not embody Events (Chapter 2, §2.2). We conclude that the transitivity dimension characterises the type of Event, as well as Events as a semantic class.

SUPPORT

The account of transitivity given here is largely based on Halliday (2004), especially the discussion of Process types. The semantic basis of transitivity was set out by Hopper and Thompson (1980); I have used their elements of agency, "kinesis" (flow-on), affectedness, individuation, and volitionality (incorporating it into agency). They went too far in identifying elements, however: their "participants" constitute a pre-requisite for transitivity, rather than an element of it; and aspect, realis, and being affirmative are separate issues. See also LaPolla and others (2011).

ERGATIVITY

Halliday (2004: §5.7) includes ergativity in his account of transitivity. He contrasts ergative systems with "accusative" systems, as alternative conceptualisations of real-world happenings, within the overall system of transitivity. In accusative languages, events are conceptualised as "doings", with a distinct actor carrying out the event, and with agency, causation, and affectedness as part of the conceptualisation. In ergative languages, events are conceptualised as happenings – as events being actualised in a medium. "Cloud formed over the hill-tops" and "The sea undulated gently" would be (semantically) ergative, with the cloud and the sea as the media in which the happening occurs; there is no agency and no affectedness. This usage is the "middle voice" or "mediopassive", typically illustrated by "The book is selling well". Causation does not usually feature in the ergative conceptualisation; it can be represented, but as a trigger setting off the

event, not as an influence continuing throughout it. See also Lemmens (1998) and Peters (2013), for other useful discussion.

As I will explain more fully later, ergativity is not grammaticised in English; the ergative/accusative distinction remains cognitive, not linguistic, for speakers of the language.[10] However, it is grammaticised in other languages. DuBois (2017) describes it as a "discourse profile" and as a "discourse-pragmatic motivation", which "motivates" syntactic or "grammatical" ergativity. Since motivating syntactic ergativity entails being expressed in it, the "discourse-pragmatic motivation" must be semantic, in the terms used here.

CONCLUSION: WHAT IS EXPLAINED

We have seen that transitivity as a dimension of meaning explains the types of Process to an important extent. One particular application of that is the use of the dative case, in some languages, to signal reduced transitivity, as in the Senser Participant (Halliday 2004: 202, footnote). Middle English seems to have done so, for example, with constructions like "Me thinks that". It seems to be one effect in the "dative alternation" in modern English; the clause-final "to" alternative makes the relevant Participant less affected, as well as more in focus.

This dimension also explains the nature of complementation as a semantic structure, which has been discussed in the section on grammatical meaning (Chapter 3, §7), and the section on complementary structures (Chapter 2, §2.2.2). Complementation is by its nature completion. The Process and Undergoer roles in a figure are usually thought of as completing the action initiated by the Agent. That is often true, but transitive flow-on often extends beyond the Undergoer, as it would in, "They appointed him secretary" and "I'll set the alarm for seven"; "for seven" seems to be a Circumstance, yet is involved in the action, and is part of the transitive structure.

Like other dimensions, transitivity differentiates some synonyms: *repeal* is strongly transitive, since it signifies substantial change in the Undergoer; *repudiate* is weakly transitive, since the Undergoer is not affected; *retract* is intermediate between the two. Transitivity also explains minor phenomena such as the effect of the particles in certain phrasal verbs, such as *burn away*, *eat up*,

and *wipe down*, which strengthen the transitivity by increasing affectedness.

This analysis resolves some of the uncertainty and outright confusion about "semantic roles". The distinction between "Agent" and "Actor" is not that they are different roles, but that they are forms of the same role (initiator of the action), with Agent being higher on the scale of transitivity. Similarly, "Goal" and "Patient" generally denote the same role as "Undergoer", but differ in degree of transitivity. This analysis also eases such problems as those of LaPolla and others (2011) over "macro-roles" and "semantic valence".

The clarification of these puzzles rests on distinguishing linguistic transitivity from real-world transitivity, as entailing a semantic difference which is realised grammatically, i.e. in the morphology or syntax or (conceivably) phonology. Similarly, and as noted above, ergativity in English is not linguistic, but a matter of cognition, whereas in ergative languages it is linguistic, being realised morphosyntactically in case forms.

Finally, transitivity defines Events as a semantic class: only they can be transitive. It should be noted, however, that that includes "intransitive" Events, since they are on the transitivity scale, but at the negative end of it. (Some Entities carry an element of transitivity, as with "British oil imports", where "imports" has a transitive dimension, with Britain as the Actor and oil as the Undergoer; the nominalisation of "to import" retains the transitive Event as a subordinate element. The definition of Event through transitivity is not contradicted.)

1.2.5 Intensity

DEFINITION AND EXAMPLES

Intensity is the dimension that is grammaticised in English as degree of comparison, as in *big, bigger, biggest*, which forms a paradigm for the intensity of the descriptive sense, 'of great size'. It is also lexicalised in many sets of synonyms, such as in *big* (with the basic degree of intensity), *large* (with a higher degree), *gigantic* and *enormous* (with still higher degrees). Intensity is also realised by the use of whole groups for one sense; the speed of "He trotted" can

be intensified as he rode "at a canter", "at a gallop", and "at a full gallop". Intensity is also commonly expressed by modification (as in "very big") and by phonology (for example, by the height of pitch rise in "I hate him!").

CHARACTERISTICS

The paradigm of degrees of comparison sets up three steps in the scale. The sets of synonyms set up a scale with an indefinite number of degrees. Some words have two senses distinguished by whether intensity applies to them. For example in "It's very hot", "hot" has high intensity; but in "How hot is it?", "hot" is neutral, intensity being inapplicable. (That is shown by the acceptability of the question "How hot is it?" even when the referent is cool.)

APPLICATIONS

Intensity applies to emotive meaning, as well as to descriptive meaning, as in the increasing intensity of *dislike, hate*, and *loathe*. (*Hate* itself, rather strikingly, has two degrees of intensity: senses <1> "Have feelings of hostility" and <2> "In weakened sense: have a (strong) distaste for".)

As the examples have shown, the intensity dimension explains how some sets of synonyms differ. It also explains the nature of hyperbole. A news columnist, giving a sometimes ironic critique of American politics, referred to Congress as "a body the Founding Fathers considered so dangerous that it needed splitting in two [i.e. the House of Representatives and the Senate]". "Dangerous", as 'involving great risk', is greater in intensity than the intended meaning. Also, intensity often underlies salience, as in rhematic structure (Chapter 2, §2.3.4); the end of a sentence, as the focus of information structure, is the default position for the most intense sense. Similarly, intensity is the essence of climax.

More important, perhaps, is the role of intensity in distinguishing semantic classes. Properties are generally gradable for intensity: 'hot, 'enjoyable', honest', and so on. (Some basic perceptual Properties, like 'red', are not usually gradable; and Properties like 'unique' and 'infinite' are inherently graded – being at one end of the scale – so cannot be graded further.) By contrast, Entities and Events

cannot be graded, in principle. (There are apparent exceptions, as in "utter fool"; but there it is the Property 'folly' that is graded, rather than the Entity, 'fool'.) Similarly, Epithets (Chapter 2, §2.2.4.3), as gradable senses, differ from Descriptors in having intensity as a dimension.

1.2.6 Basicness

DEFINITION AND EXAMPLES

Basicness here is the measure of whether one sense depends on others. *Horse* is more basic than *pony*, when *pony* means "A horse of any small breed or type". *Disorder* <1>, "Lack of order", is more basic than *disorder* <2>, "Disturbance … esp. breach of public order".

This form of basicness is distinct from basicness as closeness to bodily experience, as in Cruse (2011: §3.3.1.5), which is part of the generality dimension to be discussed in a later section. It is also distinct from the psychological sense of basicness, in which categories that children develop first are more basic than those that come later, in developmental dependence. (In that last sense, the concept of dog is more basic than the concepts of both mammal and Alsatian.) It is converse to those two kinds of basicness, since bodily experience and the categories that children distinguish become differentiated and understood explicitly only gradually, as the basic or underlying concepts and senses develop; for example, it takes time, and a developed power of abstract thinking, to formulate 'mammalian' from 'dog' and 'cat'.

CHARACTERISTICS

This dimension of meaning is close to the cognitive end of the cognitive – linguistic spectrum; but the examples given are linguistic to the extent that they depend on how a particular language combines cognitive elements. It explains one element of grammatical meanings, being one of the few dimensions that apply to those meanings as well as to descriptive ones. For example, the meaning

‘associate’ (i.e. ‘Relate these two senses in the way that seems most appropriate in the context’) is more basic than the others, which depend on the sense, ‘associate’.

APPLICATIONS

Basicness also helps explains the relation of hyponymy, as in the example of *horse* and *pony*. It underlies other hierarchies, besides hyponymy. That includes ‘colour’/‘red’/‘carmine’, and ‘the arts’/‘literature’/‘novels’/‘thrill ers’, for example; each term in those chains is defined through the term that precedes it. It does not explain any synonymy, as most of the other dimensions do.

1.2.7 Generality

DEFINITION AND EXAMPLES

The dimension of generality is the scale between being particular and being general. *Government* is more general than *cabinet*, and *cabinet* is more general than *minister*.

CHARACTERISTICS

Generality establishes hierarchies, with relations of hyponymy, as with ‘town’ / ‘county’ / ‘state’ / ‘nation’. It is close to the cognitive end of the dimensions spectrum. Indeed, the hierarchy ‘Mars’ / ‘planet’ / ‘solar system’ / ‘galaxy’ is wholly cognitive, not linguistic.

Generality is closely related to basicness – they both apply to hierarchic structures. However, generality is the relation between the denotations of senses, whereas basicness is the relation among the concepts that constitute the senses. The class of things denoted by *furniture* is more general than the class denoted by *chairs*; FURNITURE is a more basic concept than CHAIR. Generality is also closely related to abstraction, since, as the mind abstracts from concrete experience, it

creates more general concepts and senses. The cognitive scale from concrete to abstract can be thought of as correlating with this linguistic scale.

APPLICATIONS

As just noted, generality constitutes the important sense relation, hyponymy. In particular, it applies, in English at least, more naturally to Entities, especially concrete ones, than to Events and Properties. If we try to classify Event senses, such as those of *think, ponder, meditate*, and *cogitate*, we are inclined to make distinctions of specificity or basicness, rather than of generality.

More than most of the dimensions, generality applies to the complex senses of whole groups, since adjusting generality is one of the main functions of modification – as restricting reference. That is reflected in a syntactic analysis by bracketing, as in "The [most violent [ground [[shaking] recorded in the country]]]". It does not apply regularly to emotive or attitudinal meaning but does apply to social meaning, as in the distinction between British usage and Yorkshire usage. It also applies to meanings conveyed phonologically; secondary tone commonly functions to make a general meaning more particular (Halliday and Greaves 2008: §3.4.1).

SUPPORT

For psycholinguistic support for this dimension, see Levelt (1993), and Flores d'Arcais and Schreuder (1987: 153–154). For neurolinguistic support, see Fortescue (2009); the neuron bundles that embody senses have links close to the cortex surface leading to abstract, general sense elements, and they have links further down leading to particular, perceptual elements.

CONCLUSION: WHAT IS EXPLAINED

The dimension of generality explains the nature of hierarchy – a major structure in semantics – and of hyponymy – one of the major sense relations. It is vital to

understanding the relation between language and cognition (to be discussed fully in Chapter 6), since *horse* is more general than *draught-horse* cognitively but more general than *pony* linguistically. (*Pony* is defined arbitrarily by height; the meaning is specific to one language.)

The general/particular distinction explains some ambiguity. Consider the following statement about Tok Pisin, a creole language of Papua New Guinea. "Tok Pisin must have been shaped to a significant extent by language-independent … forces" (Mülhäusler 1990: 173). "Language-independent" could mean 'independent of all languages', or 'independent of the specific language referred to in the context'.

1.3 Relative Dimensions

As noted in §1.1, relative dimensions are those that apply to the relationship between senses, or to relationships between sense elements, in contrast with dimensions that apply to particular senses.

1.3.1 Expectedness

DEFINITION AND EXAMPLE

Expectedness is the scale of how likely a potential sense element is to be included when the sense is actualised in an utterance. In sense <3> of the verb *retreat*, ("The action or act of retiring in the face of opposition, difficulty or danger"), the sense element 'retiring' is necessary – the action cannot be considered 'retreating' if there is no retiring. The element 'opposition' is expected, being very commonly present; but the action can still be "retreating" if there is no opposition – just difficulty. The element 'danger' is likely, but not necessary either.

CHARACTERISTICS

It is useful to follow Cruse (2011: §3.3.2.1) in dividing the scale into somewhat arbitrary sections, as follows. Necessary elements are those that are required by the definition of the sense; they are always present, though often unobtrusively. Expected elements are those that are very common – common enough to be expected by hearers. Likely elements and unlikely elements are lower on the scale.

The scale of expectedness is a consequence of meaning's being a network, not a set of box-like, independent meanings. When a sense is activated (in both mind and brain), the extent of the activation varies (in accordance with the context and the strength of the stimulus). The central sense elements that are activated automatically are the necessary ones; elements further out that are activated only occasionally are the possible ones.

We can see the distinctions at work in sense <1> of *horse*.

> A solid-hoofed perissodactyl ungulate animal, *Equus caballus*, having a short coat and long mane and tail, native to central Asia but long domesticated as a draught animal and esp. for riding.

That is the account that SOED (2002) gives for the system meaning of *horse*. Of those elements, 'Equus caballus' is necessary (necessary to the system meaning, though not usually conceptualised in that form), as is 'animal'. 'Domesticated' and 'riding' are expected by hearers; 'draught' is likely; 'perissodactyl' is unlikely. "Equus caballus" illustrates one common pattern for necessary meaning: it has (1) the class to which the referent belongs (Equus), and (2) the feature that distinguishes it from others in the class (caballus). The relationships are portrayed graphically in Diagram 4.1.

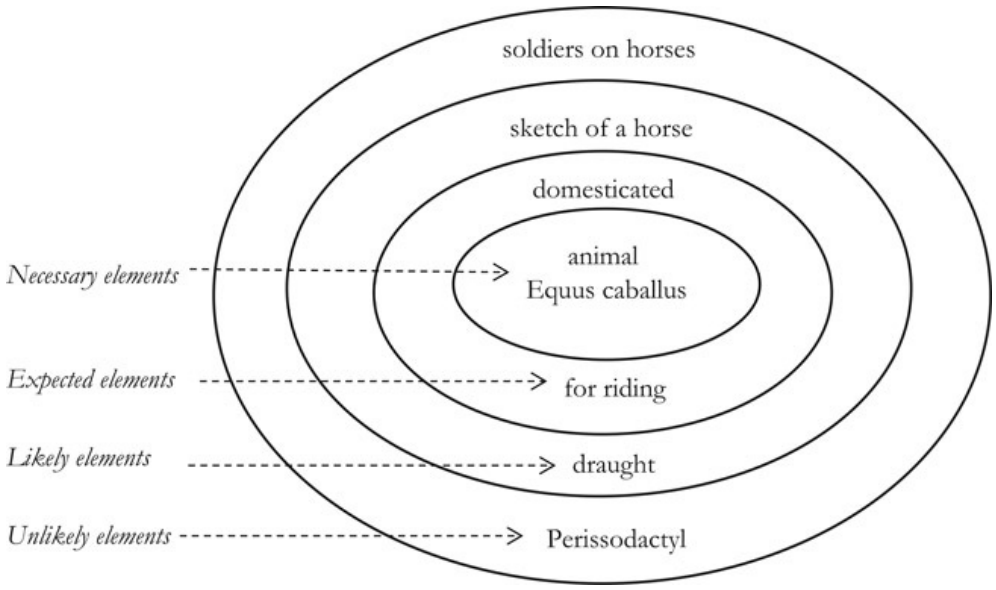


Diagram 4.1 Expectedness of some elements in *horse*

Unexpectedness often supplies force, especially in figurative use. In the rescue story (Chapter 2, §2.3.4), the life raft was "just plastic sitting on the water". Expected meaning elements of *plastic* such as 'solid' and 'easily moulded' are replaced by unexpected contextual elements such as 'flimsy' and 'inadequate'.

Expectedness can apply to nondescriptive meanings. Emotive meaning is expected in *bloody* but is not usually invoked in "a bloody conflict". In the description of Cuba as "lapped by warm, blue waters … the rum is light and crisp",[11] all the adjectives have affective meaning; for *warm* and *crisp* that is expected, whereas for *blue* and *light* it is not. Expectedness also applies to the meaning of some syntactic structures. The Predicator-Subject order carries the grammatical meaning, "Respond to this as a question", as its expected meaning; but it has the possible social meaning of literary style, which sometimes replaces the expected meaning, as it would in "Came the dawn", and "Down came the rain".

Cross-linguistically, some languages are distinct in their use of the expectedness dimension. For example, languages with serial verbs treat as necessary for expression sense elements that other languages treat as only expected or possible. For example, Wunderlich (2006: 156) records a serial verb in the Akan language that could be glossed, "He took gave me his horse", which is simply *lent* in English.

APPLICATIONS

SENSE RELATIONS

Expectedness helps explain many sense relations. In synonyms, *flavour* and *taste*, for example, are distinguished by *taste* having 'consuming' as a necessary element, whereas *flavour* has 'sensing' as a necessary element. It is also by necessary elements that distinctions are made in hierarchies. It is the varying selection of likely elements that distinguishes uses of the same sense in different contexts.

PROTOTYPES

The expectedness dimension provides an explanation for so-called prototype meanings and prototype concepts (since concepts are commonly confused with meanings, as a later chapter will show). Necessary elements are the "central features" or "core features"; expected elements are the "typical" ones; and unlikely elements are the "peripheral" ones. In one context, certain "peripheral" (i.e. possible) elements are invoked, but different elements are invoked in different contexts.

This explanation of that pattern is superior to the prototype one, in several ways. By recognising the issue as one of meaning, not concept, it provides for a word to have several senses, possibly varying only slightly; and it provides for each sense to vary in different contexts. That allows for variation in whether having wings, being the size of a thrush, and so on, are to be included as "features" of 'bird': the problems entailed in the belief in a single unit (a "prototype"), for 'bird' for example, are thus seen to be unreal. Diagram 4.1, being radial, illustrates what writers often seem to have in mind when they refer to "radial categories", which are in fact meanings, not categories.

CONTEXTUAL VARIATION OF SENSES

The variation with context involved in that explanation is general: expectedness explains much of contextual variation of senses. The context does not so much change the meaning as control which of the expected and possible elements are invoked on each occasion. For example, in the sea-rescue story (Chapter 2, §2.3.4), the life raft was said to be "just plastic"; the effect of "just" was to pare away all the expected meanings (such as 'easily moulded' and 'based on synthetic resins'), obliging us to replace them with possible meaning elements such as 'flimsy'. Variation in the number of Participants ("arguments") invoked by different uses of a verb is made possible by the expectedness dimension.

IMAGINATIVE MEANINGS

Invoking unlikely elements explains figurative and other marked use (see Chapter 4, §2.3). The mental excitement that constitutes the imaginative state provides greater strength of input than usual, which, as noted above, activates the network of possible meanings more widely. The contrast between the expected elements and those actually evoked provides the surprise that is characteristic of imaginative language – metaphor, in this example, and many other figures of speech.

SEMANTIC CHANGE

As with many other dimensions, expectedness provides a simple but satisfying way of describing some semantic change. *Disciple* was at first <1> "A follower of Jesus"; it became <2> "A follower of a religious … teacher"; then <3> "A follower of another person's example". That "broadening" of meaning is more precisely described as the successive loss of necessary meaning elements: first 'Jesus', then 'religious', and then 'teacher'. When transitivity is seen as a syntactic property inherent in a lexical entry, a word's change to being intransitive, with consequent change in "semantic roles", seems inexplicable; but with degrees of expectedness, and with transitivity itself being a dimension, the shift is merely a move along a scale, and quite natural. (See also Chapter 6, §1.2.2.)

COMPREHENSION

Expectedness helps explain some of the phenomena of comprehension. What hearers take from a word seems to be often less than its full intended meaning. That is quite natural, however, when the intended meaning itself is less than the full system meaning. For most purposes, all that is needed is for hearers to grasp enough of the expected or possible elements to identify the referent, or respond to the utterance appropriately: near enough is usually good enough. That is supported psycholinguistically by Ferreira and others (2002), who support their "good-enough approach" with evidence that "the meaning people obtain for a sentence is often not a reflection of its true content" (Ferreira and others 2002: 11). That in turn gives further explanation of the distinction between system, speaker, and hearer meaning, outlined in Chapter 3, §2.2.

SUPPORT

Unlike the other dimensions, expectedness has considerable support in the semantic literature, although often under different names. "Associations", "overtones", and "connotations" are possible but not expected elements. Geeraerts (2010) notes that in 1880 Paul made the distinction between "usual" and "occasional" meanings. Burnley (1992: 166) makes a similar distinction.

Barsalou (2005: §3.1.7) cites psycholinguistic research demonstrating possible meanings extending far beyond the system or "dictionary" meaning; for example, subjects had such elements as 'wings folded' as part of the meaning for *bird* – "image schemas", as some scholars have called them. See further Spivey and others (2005: 252–253) on the shapes some experimental subjects included in their meanings of *gold*, *silver*, and *iron*; and Jung and others (2014) showed that hurricanes with female names are deadlier than those with male names, because the names' associations have become expected meanings.

Pulvermüller (1999: §3.3) gives a neurolinguistic explanation for why senses extend further into possible meaning elements in some contexts than in others: the strength of the psychological input controls the degree of activation of the sense, and therefore controls its extent outwards through the network of

elements. Pulvermüller (2013) adds to that, for emotive words; even abstract words such as *joy*, that merely name an emotion, are grounded in the limbic system of the brain, activating both emotion-related circuits and the motor circuits for the face and arms, since those bodily organs express emotion and affect our perception of it. (The activation is weak, not leading to felt emotion or bodily movement.) Even abstract words have a reservoir of possible meaning elements.

1.3.2 Salience

DEFINITION AND EXAMPLES

The salience dimension is the scale from low to high awareness of sense elements in speakers' and hearers' minds. Examples follow, from the word *pretty* in (a) and (b).

a. "She was smaller than Jenna…. She was pretty and crisply dark."
b. "Bless her sweet face! You may laugh, but she was pretty."[12]

Both use *pretty* in subsense <3b>, "beautiful in a delicate, dainty or diminutive way". In (a), "smaller" in the context makes the element 'diminutive' more salient in *pretty* than 'delicate' or 'dainty'; but in (b), 'delicate' or 'dainty' will be more salient than 'diminutive', because of *sweet*.

CHARACTERISTICS

Salience resembles the scale between vehicle drivers' high awareness of what is ahead and in focus, and low awareness of what is to each side. It is sometimes referred to as "foregrounding" or "backgrounding". Since high salience is characterised by a high level of awareness, I presume that it is psycholinguistically characterised by strong activation of the relevant neuron pattern.

As with expectedness, this dimension is thus an instance of the activation principle. Mason and Just (2006: 788) provide neurolinguistic support for this dimension, reporting salience-based discourse processing, parallel with lower levels of processing. In that processing, various inputs may reinforce each other, but some may inhibit the stimulation that others provide, affecting elements' salience. See also Gernsbacher and Faust (1991: 123).

APPLICATIONS

Salience helps explain synonymy. Two senses may have the same elements, yet differ because those elements differ in salience. For example, *calm*, *quiet*, and *tranquil*, when applied to a person's demeanour, all have the elements 'not moving' and 'not agitated'; the words differ, however, as follows. In *calm*, 'not agitated' is salient, but 'not moving' is not; in *quiet*, that is reversed; and in *tranquil*, both elements are salient.

The salience dimension applies, second, to variation with context, complementing the explanation from expectedness. The contextual variation often consists of changes in the salience of different possible elements. Using our repeated example of *horse*, we can illustrate that with idiom-atic phrases. "Change horses in midstream" brings 'riding' into salience. "Eat like a horse" brings 'eats heartily' (a rather unlikely element) into salience. "Frighten the horses" (applied to people) brings horses' nervousness into salience. (Those examples illustrate inhibition: *eat like a horse*, for instance, inhibits 'riding' and 'frighten'.)

Noun incorporation has reduction in salience is one function. The salience of some sense elements in the word is reduced, along with the salience of the referent in the discourse. See Mithun (1986), for example.

1.4 Discussion: Dimensions

OTHER POSSIBILITIES FOR DIMENSIONS

Chapter 3, in dealing with the types of meaning, treated formality, archaism, and slanginess, for example, as subtypes of meaning. Strictly, they are dimensions, since they can be conceptualised as qualities of the utterance and are matters of degree. I used the concept of type for them because that is how they have been presented in the semantic literature, and I have followed Cruse (2011) in the use of "dimension". Perhaps, also, the types of modality, such as obligation and certainty, should be treated as dimensions; again, I have followed traditional practice.

Other candidates for inclusion here include "assertiveness" (Quirk and others 1985: §2.53–2.55), which is the relation between *some* and *any*, between *somebody* and *anybody*, and between *sometimes* and *ever*, and so on. ("Some cars" asserts the cars exist: "any cars" does not.) Another possible dimension is "intimacy", which is the relation between "The barber cut me on the cheek" – least intimate – "cut me on my cheek", and "cut my cheek" – most intimate (Seiler 1995: 279). A third possibility is definiteness in nominal groups, with distinctions such generic/specific. I have not included them, because they are relatively minor, and because they may be unique to English.

CROSS-LINGUISTIC VIEW

It is clear to me that many European languages, such as French, share most dimensions with English. Some languages, however, seem to have other dimensions. The politeness forms in some languages seem to belong to a dimension; Japanese, for example, has three degrees of honorification, expressed by suffixes (Teruya 2004: 199). According to Hori (1995: 174 footnote), the choice of honorific prefix is in some circumstances controlled by the origin of the relevant noun (i.e. Chinese or Japanese); origin is thus perhaps a dimension in Japanese.

RELATION OF THE DIMENSIONS TO TYPES OF MEANING

Just as descriptive meaning has developed much further in complexity and expressiveness than have affective and social meaning, so are the dimensions

much more fully developed in descriptive meaning than in the other content types. The only instances of their having dimensions noted earlier are that emotive meaning can vary in intensity, and that attitudinal and social meanings can vary in generality. Grammatical meaning, on the other hand, is a little more fully dimensional, varying in generality, vagueness, and point of view.

FORMALISATION OF THE DIMENSIONS

There is considerable value in having a theory of semantics that can be formalised and is therefore usable in computer applications, for example. The dimensions set out in this section can be formalised straightforwardly, in such ways as the following. (1) The conceptual distinctions we make regularly can define segments of the dimension's scale. For example, we distinguish vagueness from being precise and from being neither. The segments of the scale can then be treated as three subcategories, or given a numerical rating such as 1/2/3. (2) Different linguistic forms that express different steps of the scale form natural subcategories or ratings. For example: high transitivity is expressed in agentive material Processes; moderate transitivity is expressed in non-agentive material Processes; weak transitivity is expressed in mental Processes; and low transitivity and intransitivity are expressed in relational Processes. Thus, the theory presented in the book can be formalised. It has the potential to be used as a formal semantics, although I am presenting it functionally.

ILLUSTRATION OF THE EXPLANATORY POWER OF THE DIMENSIONS

A discussion of a set of synonyms involving the sense element 'lack of order' will illustrate both the general explanatory power of the distinctions among semantic dimensions, and how the quantification just referred to can be applied. The study is quite detailed, to show that the theory reaches deep into senses, and that word senses are well structured, although as items in the "lexicon" they have often been alleged to be random and structureless. The words to be discussed are *fuss, kerfuffle, commotion, disorder, disturbance*, and *agitation*; the analysis is based

on senses from the SOED. The words will be treated as monosemic – as each being unitary semantically, with the word's different senses taken as variations according to context.

Synonyms are words with the same cognitive content elements; they differ in the linguistic dimensions assigned to the elements by each word. For the words being considered, the difference lies on the intensity dimension. *Fuss* is distinct in having the greatest intensity, ("disproportionate or excessive"). *Commotion, disorder*, and *disturbance* form a group of exact synonyms, of medium intensity. *Agitation* is the weakest. *Kerfuffle* does not fit the pattern, being indeterminate in intensity, as in every other dimension; its uniqueness is its nature as an ideophone.

Each word's various senses are distinguished by their position on the relative dimensions. They all have the element 'lack of order' as necessary; that is what makes them synonyms. Similarly, they all have 'activity' as an expected element, but sometimes the context neutralises it, with the sense becoming stative ("state of" in the SOED definitions). *Fuss* is distinct in having 'display' and 'disproportionate' as expected elements. Most of the words have elements that are possible for them but not for others, which controls the selection of words when speakers wish to be precise; for example, *disturbance* has 'breach of the public peace'; *disorder* has 'breach of discipline'. (Difference in dimensions commonly distinguish a word's subsenses, as well.)

DICTIONARIES' SUPPORT FOR THE DIMENSIONS

Since the dimensions give a rich, precise, and systematic understanding of how words carry meaning, they should be used in dictionary entries, as good explanation, and as a way of organising the entry. In such dictionaries as SOED, generality is sometimes used explicitly (through the abbreviations "gen." and "spec."). The intensity dimension is evidently present in the lexicographers' minds, as shown by the definition of *cordial* <2>, as "warm and friendly without showing intimacy", and of *fuss* as "disproportionate or excessive". Vagueness is also occasionally allowed for, as in "more or less violent" for *commotion*. The writers do not seem to be aware of the issues crystallised by the other

dimensions. In part, that is not surprising, since the dimensions seem to have entered scholars' understanding only recently; but the main reasons seem to be the traditional preoccupation with concepts and the traditional practice of simply giving synonyms for meanings.

1.5 Conclusion: Dimensions

WHAT IS EXPLAINED

The discussion of dimensions has shown that the concept of dimensions has a great deal to contribute to explaining semantics. The main points are as follows.

The semantic classes have some basis in cognition: Entities are based on what cognition treats as things, happenings, and so on. However, their real significance, and what distinguishes the semantic classes from traditional parts of speech, is their linguistic nature, not their cognitive connections. That linguistic nature lies in their structural role (see Chapter 2), but also in difference in dimensions.

- Entities are not gradable in intensity, they are not transitive, and some are bounded, in space.
- Events are not gradable in intensity either, but they are transitive, and some are bounded, but in time.
- Properties are gradable in intensity, but neither transitive nor bounded.

This section has shown that group senses are structured in the same way as word senses. It has shown that the variation of senses in context, which sometimes consists of different combinations of descriptive meaning elements, often consists instead of variation in dimensions. The sense relations of synonymy, antonymy, and hyponymy are usually assumed to be established by details of descriptive meaning; but the section has shown that they are established, at a subtler level, by the semantic dimensions, as well as by the semantic types discussed previously.

The section has shown incidentally that semantic change often consists of

change in a sense's dimensions. (We return to semantic change in Chapter 6.)

Finally, it has shown that dimensionality of meaning is one source of lexical ambiguity (§1.2.3, §1.2.7). Lexical ambiguity can be divided into the two subtypes outlined earlier, in Chapter 2, §2.2.3. Lexical polysemy, as ambiguity, can be illustrated from, "Gentlemen prefer blondes" (Leech 1969: §12.1); *prefer* can mean 'like better' or 'promote'. Lexical homonymy can be illustrated from, "I noticed a mole"; *mole* can mean 'small animal' or 'spot on the skin'.

PRINCIPLES

A couple of sections have noted that the dimensions are varying construals of the content being conveyed when we speak; that is part of expressivity, extending the range of what we can say in language. The dimensions also illustrate a secondary principle, activation, since they are activated to different extents in different words and in different uses of the same word; activation is one form of the principle of instantiation, since the relevant brain circuit must be activated before a linguistic expression is fully instantiated.

2 Use of Senses

2.1 Introduction

This section deals with different uses of senses. On its own, "uses of senses" may well seem a strange phrase, since we assume that senses have a single use – to be senses. The significance of the phrase lies in the difference between use and function.

The function of our stomachs is to digest food, which is the same as its use. We put our hands, however, to so many uses that we cannot equate the uses of our hands with their biological function (or function*s*). Similarly, we put meanings and meaning structures to uses for which they do not seem to have evolved. That hardly needs demonstrating, as far as particular senses go; but it is worth noting

and formalising some types of use. The next section (§2.2) discusses the contrasting referential and descriptive uses of meaning; the following section (§2.3) discusses marked and unmarked uses. Those two pairs constitute the uses denoted by the heading of this section.

The concept of different uses of senses is important – indeed fundamental – to an understanding of meaning. Senses of both words and structures have been described in the book so far as if they exist in a mental "dictionary", fixed in their internal structure and their relation to other senses, apart from random and minor variation according to context. But in the uses set out next – most clearly in literal and metaphorical use – senses vary systematically, following regular principles. The uses are part of the semantic system of language.

2.2 Referential and Descriptive Uses

2.2.1 Introduction

Some road signs say, "Motorway ends", but the road continues. The statement seems to be visibly false, yet it is true: the physical road continues, but it can no longer be described as "motorway". That illustrates the distinction being made in this section: *motorway* can be used to refer (to the physical road) and to describe (i.e. to ascribe to the road the quality of being a motorway). Similarly, when someone once said, "I bought a new hairdryer", her friend replied, "Oh, my head is my hairdryer".[13] The hearer must have done a double-take, since a head cannot be a hairdryer, yet the utterance makes a kind of sense. In "I bought a new hairdryer", the word is (primarily) referential, referring to a physical object; in the retort, the word invokes the root morphemes individually and descriptively – 'something (*–er*) that dries your hair'. The distinction being made between referential and descriptive uses, then, is not pedantic but substantive, being sufficiently real in English semantics for speakers to make a pun relying on it.

The distinction is familiar to readers in the form of the traditional classification of adjectival clauses into restrictive and non-restrictive ones. Restrictive clauses are used to aid reference – identifying the referent – and non-restrictive clauses

are used descriptively to add information about a referent already identified. (Note that "non-restrictive" is equivalent to "descriptive".) The distinction applies not only to clauses but also to words and phrases as modifiers – although that is not often recognised. For example in "I stepped through the pink velvet curtains of the Covent Garden theatre stage", the hearer can identify the referent from "the curtains of the Covent Garden theatre stage", without "pink" and "velvet", which are used purely descriptively, to add further information.

That basic distinction is simple, but it has applications that will require making finer distinctions and using more specific terms. Note that this distinction is like the distinction between different functions of language, in that a word may be used in both ways at once; for example, in "She volunteers at the Red Cross shop", "*volunteers*" both refers to specific actions ('she works'), and carries descriptive detail (e.g. 'voluntarily').

"Referential" use is here taken to be the same as "defining" use. That is because reference is taken in this book to occur within the mind, since meaning and abstract knowledge do not have direct access to things beyond the mind – only indirect access through perception or other mental processes. Also, the precise function of "referential" use varies a little, so that the term will apply to what might be thought of as "restrictive" use – for example, adjectives vary between descriptive and restrictive (or "defining") use.

2.2.2 Descriptive and Referential Use of Group Senses

If a speaker distinguished between "the red books" and "the blue books", each group as a unit would be used referentially. However, both the heads and the modifiers use descriptive meaning, as defined in Chapter 3, on meaning types; they use the semiotic strategy of describing (Chapter 3, §2.6.2) as a way of referring to the books. We must, then, distinguish between descriptive use and descriptive meaning. Since there may be descriptive words in a phrase that is referential overall, we must also distinguish between how the sense of a whole group is used and how the senses of its individual words are used.

In referential use, speakers must avoid needless words, because they are likely to define the referent wrongly, and at best they will merely distract the hearer.

For reference, speakers thus adopt the tactic of minimising detail; they must use enough, and no more. (That tactic has been discussed elsewhere as the "economic motivation" – e.g. Haiman 1983; Zipf 1949). When they embark on description, however, speakers can use the tactic of expanding detail, since extra detail enhances any image hearers form and enhances their response. (That is the "expressive motivation" – Kemmer 1993: 48–49). Consider the following example.

> The North's [i.e. North Korea's] promise to make a 'super-mighty pre-emptive strike' against the *Carl Vinson* [aircraft-carrier] is bluster.
>
> (From *Economist*, 29 April 2017, p. 20)

Bluster carries the whole of SOED's sense <3>: "Noisy, inflated talk; violent but empty self-assertion, menace, etc.". Note that "bluster" is co-referential with "The North's promise", so adds nothing referentially. (Note also that it represents a Property, although it is a "noun", which is reputed to represent Entities.) A more informal example is the following: "I'm sure the mozzies here are on steroids, they are big sods"[14] – again, there is a descriptive Entity group, co-referential with the subject of the clause.

Speakers may, of course, combine the two tactics in one phrase, as in "the Kyoto, or carbon-dioxide emission, debate", where the underlined group is used descriptively, amplifying the referential group in which it is nested. That is a regularly the function of apposition.

The distinction made here between referential and descriptive use explains the phenomena for which the conventional distinctions between connotation and denotation, and between intension and extension, have been used. Those conventional distinctions treat the alternatives as fixed parts of the word – as parts of the "the meaning" of a word, and are unsatisfactory accordingly. The distinction made here – between uses of a word, not parts of "the meaning" – is clearer than those distinctions and is more accurate to the reality of language in use, since it treats "the meaning" of a word as an extensive potential, various parts of which are realised, in various combinations, as the situation and the speaker's purpose change.

2.2.3 Descriptive and Referential Use of Word Senses

This section deals with the word senses that make up the sense of a whole group, since modifiers and heads sometimes work in different ways.

HEADS

In referential use, heads begin the process of restricting the reference, which is completed by any modifying words or groups. Such referential heads commonly invoke necessary meaning elements only. For example: a report in the American section of an international news magazine narrated events in 2017 after Donald Trump's administration decided to build a wall between America and Mexico, to keep out illegal immigrants.[15] The article's subheading referred to "America's border with Mexico". Both *America* and *Mexico* can evoke social and cultural associations, but here they do not.

That minimisation of content goes further when a referent is identified again. Normal usage requires a pronoun where possible, e.g. "he", "it", or "somebody"; the tactic of minimising detail is there taken to the extreme, and the wording is semantically empty. Thus, when the passage just referred to re-identifies firms bidding for contracts, later in the sentence, it uses "local ones".

However, English semantic usage lets speakers exploit re-identification for extra detail, using a referential head with the secondary function of description. In the passage being discussed, the meaning 'construction firms' becomes successively "the construction industry", "companies", and "contractors". That inversion of normally referential words in a strategy of maximising meaning, reaches an extreme in the advertising slogan, "Mitre 10 Mega – for everything that makes Christmas Christmas"; the first "*Christmas*" means '25 December', but the second one means 'happy family occasion of giving presents [etc.]'.

The difference between referential and descriptive use of heads is occasionally encapsulated by SOED. Like other dictionaries, it regularly defines concrete nouns as if they were always referential; but it distinguishes the two uses in its entry for *man* <3>: <3a> is referential – "An adult male person"; <3b> is descriptive – "An adult male eminently endowed with manly qualities".

MODIFIERS AND THEIR STRUCTURE

RESTRICTIVE OR "DEFINING" MODIFICATION STRUCTURE

Strikingly, the headline for the passage cited earlier, about a wall between America and Mexico, was "Profiting from the wall". The writer assumed that worldwide readers could identify the referent with no more than the definite article to define it, relying on the context and readers' knowledge of world politics. When restrictive premodifiers were used, in the text of the article, they delimited referents step by step, as in "America's Customs and Border Protection agency". That progressive restriction is, of course, the function of the syntactic structure often represented by bracketing: "America's [Customs and [[Border Protection] [agency]]]". (See Chapter 2, §2.2.4.3.) Note that determiners simply take that process of delimitation one step further ("America's" in the present phrase, or *a* or *the*, etc.). In that situation of gradual narrowing down countable Entities, the set theory of nominal modification works satisfactorily; in other situations, it does not, since heads are often qualities or other abstractions, not countable objects.

Restrictiveness in modification is independent of definiteness – restrictive modifiers do not establish definiteness. Compare the following sentences. (1) "Many of the claims of the developing world, especially those relating to the establishment of a new international economic order, fall into the category of …". (2) "Tolba's ideas echo the argument in the 1970s over the New International Economic Order in which the Third World lined up …". (Both from the British National Corpus.) In the first sentence, the underlined phrase is indefinite, while in the second, the underlined phrase is definite; both, however, have restrictive modification: "[new [international [economic order]]]".

DESCRIPTIVE MODIFICATION STRUCTURE

In descriptive use, the modifiers do not identify the referent, but add information about a referent that is already identifiable, as in, "Wordsworth's was a face which did not assign itself to any class. It was a hard weather-beaten old face".

(British National Corpus.) The semantic bracketing for that would be, “a [hard] [weather-beaten] [old] face”. That is clearer in Diagram 4.2. The sentence constitutes a series of assertions: ‘The face was hard, and it was weather-beaten, and it was old’.

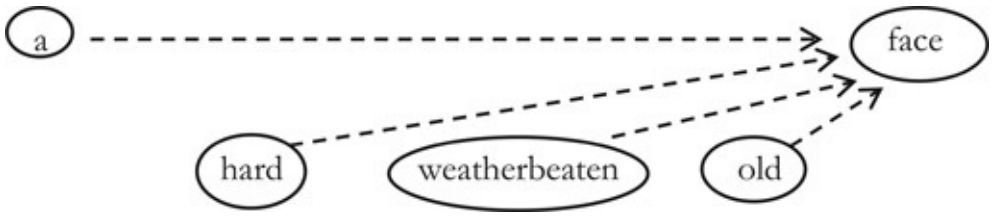


Diagram 4.2 Non-restrictive modification

INFORMATION VALUE IN RESTRICTIVE AND DESCRIPTIVE MODIFICATION

Purely restrictive modifiers have no function beyond that of delimitation. They have no value as information, so are excluded from the content-unit structure of the utterance; in effect, readers can forget them once they have established the reference. In “America’s Customs and Border Protection agency”, we can in what follows let ‘customs’ and ‘border protection’ drop out of consciousness temporarily, retaining only ‘that agency’. When a referent is already identified, apparently referential modifiers in fact function descriptively, as in our passage: “a solid concrete border wall”.

2.2.4 Discussion: Referential and Descriptive Use

PRAGMATIC REFERENCE

The use of apparently referential wording to supply extra information, noted earlier, is sometimes taken to an extreme, in which there is no semantic link between a word used like a pronoun (to be linked to a previous word) and its antecedent; the connection must be made pragmatically, by non-linguistic

inference. For example, an article about a businessman's career identified him at first as "McNamee", then referred to him with "he", quite normally. A later sentence, however, referred to him as "The 51-year-old", and the next sentence used "The former tennis player". Normal usage requires a semantically empty pronoun or a proper noun for such clause subjects, and separate clauses for the new information, as in "McNamee, who is 51 years old". In that passage, normal semantics was superseded by information-structure semantics.

DESCRIPTIVE MODIFIERS OF PROPER NOUNS

A comparable usage occurs with premodification of a proper noun. A sports journalist reported that a cricket batsman, "having been missed by a diving Moin, was yorked comprehensively".[16] The writer evidently felt that heaping up description was important enough to justify the anomalous use: proper nouns cannot normally be modified; a head which is by its nature fully defined cannot be defined further.

Similarly, a news article referred by name to Emmanuel Macron, a French presidential candidate in 2017, and began the next sentence with "The unashamedly pro-European Mr Macron".[17] Again, descriptive use has overruled normal idiom. We may note in passing the choice of the definite article in such uses. It marks the premodification, not the head, making the descriptive information ('unashamedly') definite (i.e. assumed to be familiar to the reader), not the referent, Mr Macron. That is demonstrated by two facts: proper nouns on their own need no article, so it must be the modifier that calls for the article; and "a diving Moin" (where 'diving' was new to the readers) contrasts with "the unashamedly pro-European Mr Macron" (where readers would have known that Macron was pro-European).

There is a simple basic relation between semantic classes and the choice between descriptive and referential use. Entities and Events are referential in unmarked use; Properties are descriptive in unmarked use. We use *happy* and *wise* to be descriptive but *happiness* and *wisdom* to be referential. There is a similar correlation between descriptive/referential use and content-unit structure: the pattern is that Topics are referential, and Comments are descriptive. That

provides a further explanation for Du Bois's "preferred argument structure" (e.g. DuBois and others 2003).

SEMANTIC VARIATION AND CHANGE

Yellow and *French*, which were originally simply referential, have developed derogatory descriptive senses. *Brick* has referential senses <1> and <2> referring to the building material; but senses <4>, "Stalwart, loyal or generous person", and <5>, "A dull orange-red colour", are descriptive. In other instances, English has gained a separate word, or developed a separate form, to provide pairs of synonyms apt for descriptive and referential use respectively. Examples include: *salt* and *sodium chloride*; *oyster* and *Ostrea edulis*; *fan* and *air movement device*; *AM* and *amplitude modulation*, and *NP* and *nominal phrase*.

A further change has been reanalysis of phrase structure, in which the referential head is dropped, and the originally descriptive modifier that restricted reference becomes the new referential head. All our modern communication devices have suffered the same fate; "a radio set" became "a radio", "a television set" became "a television" or "a telly"; now, "a satellite photograph" has become "a satellite" in my television weather forecasts. "Solar energy" is now usually "solar", "ready-made curtains" are "ready-mades" and "magnesium alloy wheels" are "mags".

SIGNALLING

Whether an expression is referential or descriptive is signalled occasionally but not systematically in English. As we have seen, use of pronouns and proper nouns signals referential intention; use of modification is an indicator, but an unreliable one. Otherwise, hearers must infer the speaker's intention for themselves.

2.2.5 Conclusion: Referential and Descriptive Use

WHAT IS EXPLAINED

This section has explained an important fact about word senses, which must be accounted for in any theory of semantics. We have seen already that word senses are not rigid, as they appear to be in dictionaries, in that they consist of expected and possible elements that are invoked variously in different contexts. We have seen in this section that they also vary between two forms, depending on the referential or descriptive function they are to serve in the utterance, according to the fundamental principle of functionality.

Another principle underlying the referential/descriptive distinction is that of specialisation: just as the structures in Chapter 2 had to be understood in part as formed by differentiation, so here the two uses have differentiated from general-purpose language. Specialisation is one of the sub-principles that work toward making language systematic.

The section has also explained several less important things. It has shown another reason for the existence of synonyms: we use a general or vague word such as *walk* in referential use, but for descriptive use will prefer *saunter* or *stroll* and so on. We have seen also one source of low-level ambiguity: "construction firms" and "the construction industry" can be referential and accordingly different in reference; but in the instance quoted in §2.3, they were referentially synonymous but different in descriptive value. Again, the confusion about "compounds" is clarified. If a putative compound such as "racehorse" (or "race-horse" or "race horse") relates the first element to the second as either restriction or description of it, then the expression is phrasal, and not a compound. (So none of the three quoted forms is a compound, semantically; morphological and phonological compounds involve different issues.)

The distinction between referential and descriptive use helps with several general issues. First, it can resolve whether common nouns can be regarded as names, as some have thought (i.e. as words that are not grammatical items, but are empty of content). A threefold distinction has been made. Common nouns can be used as follows. They are used (1) referentially, with activation of the central node giving access to cognitive knowledge (§1.2.3, with *coffee* as example); in that use, they have no strictly linguistic meaning, accordingly; they are names, and semantically like proper nouns. They are used (2) with only

enough content for the referent to be identified. They are used (3) descriptively, invoking a good deal of possible meaning.

The second general issue the distinction helps with is that of the "parts of speech". The terms now seem to have no strict definition and do not even have an agreed one. But to be of any value, they need clear, strict definition, because they do not denote natural kinds with agreed reference, like *cat* and *copper*. Linguists use them, I suggest, without a clear awareness that the terms must be clear both referentially and descriptively. They are therefore satisfied with giving what they feel is a clear description (typically, the relevant features of a prototype concept), without having made the reference clear – they have not defined them abstractly or by listing the referents (which are the only possibilities for defining things that are not natural kinds); the result is that the reader cannot determine which words are being written about.

Finally, the distinction contributes to an understanding of "prototypes". *Bird* carries descriptive meaning in some uses, as it would in "That's a bird, not a bat" (meaning 'member of the class Aves', for instance) – entailing no prototype – and in "I like birds" – where it could be naturally interpreted as entailing a prototype. But in "That bird startled me!", uttered after a confusing sudden flurry, "bird" would be merely a name for an unidentified phenomenon and would have no intended descriptive meaning, and again entail no prototype. A great deal of confusion about prototypes has arisen because people have taken referential and naming uses as if they were descriptive. A notable example of that is the study of cups, mugs, and vases by Labov (1973). His subjects were presumably merely naming objects (as cups, mugs, and vases); Labov seems to have misunderstood them, assuming their use was descriptive, entailing definitions that he misinterpreted as "prototypes".

2.3 Marked Uses

2.3.1 Introduction

The "rules" of language, established by convention, state what must be done. In previous centuries, for example, *threshold* had to mean the lower part of a

doorway; but that rule was broken so often that the word now also denotes any border or limit. We thus have a secondary convention – a rule, almost – that a rule may be broken if breaking it provides expressiveness. This "marked" use of language, in the sense of use that breaks an established convention – the default use – carries for speaker and hearer an awareness that a rule is being broken. Its unexpectedness often gives it "beauty, variety, [or] force". That phrase is part of the SOED's definition of "figure of speech" (*figure*, <19>); figurative use is a variety of marked use, in my terms. This section thus includes figurative use. (That term is preferred to the traditional term, "figure of speech", which is a less precise one, denoting a rather loose class of expressions, not a strict category.)

Marked uses tend to weaken and become conventionalised into new rule-bound uses. For example, *threshold* meaning 'limit' is no longer marked, but standard. Again, sentence stress usually comes at the end of the intonation unit, which is the default position; but "contrastive stress" is now a standard device. Inversion of Subject and Predicator to signal interrogative mood must have begun as marked use, but is now part of the grammar of English.

The section will deal with marked use of lexis, syntax, and phonology, in turn. The lexical markedness section deals almost entirely with figurative uses; the later sections deal more evenly with both figurative and less highly marked uses. Structuring the section in this grammatical way has some significance: as Anderson (2014: 971) points out, figurative uses are constructed grammatically, being a standard part of language; they are not merely decorative or peripheral.

2.3.2 Lexical Markedness

INTRODUCTION

A news article on the likelihood of house prices falling abruptly[18] used a number of words that can be taken as metaphorical when their origin is considered. Prices are "inflated", i.e. 'blown up'; there could be a "disaster", i.e. 'badly aligned stars'; there are "influences", which 'flow in'. Those are <u>not</u> metaphors, having no beauty, variety, or force – although it can be useful to refer to them as "dead

metaphors", since they once evoked a comparison in the reader's mind but do so no longer. Some words in the article have weak figurative force and an element of comparison, but too little to make the instances worth discussing: "prices have rocketed", "stage of the cycle", and "the lift" in world economic activity. A few words have enough variety or force (though not beauty) to be deemed real metaphors: "job losses … would ripple through with the wider economy"; "loan restrictions … crimped demand".

According to SOED, metaphors are a kind of figure of speech, and so are characterised, and distinguished from literal use, by some form of "beauty, variety, [or] force", and by an impression of imaginative comparison. That variation from the default sense of the word(s) constitutes their being a marked use. Those standards of markedness and imaginative response apply to other figures. (I am thus following the traditional understanding of metaphors, not the modern approach that deals with "conceptual metaphor", because the traditional approach allows us to see semantic properties not displayed by conceptual metaphors.)

This understanding of metaphor is reinforced by the existence of mixed metaphors. For example, a television interviewee described an ineffectual move to restrict the spread of Covid-19, a very infectious virus, as "biting off the tip of an iceberg".[19] The effect is ludicrous – as either humour or communicative failure – emphasising the imaginative nature of metaphors.

LEXICAL FIGURATIVE USES THAT WORK BY LIKENESS

The most common figurative uses work by likeness, with an imaginative comparison between two things: metaphor, simile, and personification.

CHARACTERISTICS OF THESE FIGURATIVE USES

From the hearer's point of view, imaginative meaning begins from semantic clash. (For semantic clash, see §1.3.1, and Ruiz (2015: 200) on "inner clash".) The comparison strikes the hearer as having some elements that are truly alike, but having some elements that cannot be linked readily. That incongruity or clash is

crucial; comparisons without it are merely analogies or other literal comparisons. (For example, an obituary of a mountaineer famous for his speed said he was like "a cat or a spider".[20] The reference to 'mountaineer' clashes with 'cat' and especially with 'spider'.) If we are confident of the integrity of the speaker's intentions, we seek to reconcile the incongruous elements. In an effective metaphor, the incongruity is great enough to need considerable mental "energy" to bridge the gap, like electrical energy building up until it produces a spark. Bridging the gap creates a parallel meaning that resolves the clash. If we feel no tension between the two, and do not hesitate momentarily in finding the link, there is no figurative effect, as with "business cycle". Resolving the clash brings release of tension, excitement, even exhilaration – and more specific feelings such as surprise or pleasure, according to the situation and the speaker's wording. (See later in this chapter, and Anderson 2014: 974.)

That account is well supported psycholinguistically. All semantic circuits are activated only when the input is sufficiently strong, and some circuits need more input than others, e.g. input from several sources, or input with emotional as well as conceptual force. Arzouan and others (2011) describe the imaginative input and the parallel meanings. Weiland and others (2014) give strong evidence that the completed figurative meaning is derived indirectly through a literal meaning. In neurolinguistics, Bambini and others (2011) give support for that form of comprehension of figures, and Benedek and others (2014) give support for creative production.

Which elements of the mental network are invoked by figurative uses is highly context-dependent. When Cleopatra, in Shakespeare's *Antony and Cleopatra*, laments that after Antony's death, "There is nothing left remarkable beneath the visiting moon", the effect is very different from that of Milton's moon: blind Samson laments, "The sun to me is dark and silent as the moon / When she deserts the night".[21] (I am counting Shakespeare's use as figurative because of its imaginative quality, although it is not one of the conventionally identified figures of speech.) In each of those uses of *moon*, the word's sense is quite complex, in both meaning types and descriptive elements invoked – more complex than in any literal use.

Sometimes the figure proper is heightened by further descriptive meaning supplied by a secondary figure. For example, a tramper wrote that after she and

her companions had left a depot of two weeks' food, "Our packs felt mercifully light compared to the two-week elephants we had lugged up valley previously".[22] The effect of the metaphor "elephants" is heightened by "two-week", which puzzles and perhaps charms us with its apparent oddity.[23] A science reporter described a black hole's "devouring" of another star as not only a "feeding frenzy" but as a "celestial feeding frenzy".[24]

MEANING CONTRIBUTED BY THESE FIGURES

Figurative uses usually contribute descriptive meaning, often a vivid image, complementing the abstract statement of meaning. The meaning that we notice and remember most, however, is emotive, as when a newspaper columnist, discussing a local television comedy, expressed scorn and anger in, "After all, [the comedy] is supposed to be making merry with the piranha world of … real estate". Support for the importance of emotive meaning in figurative uses comes from Ullman (1977: 136), Feyaerts and Brône (2005) and Foolen (2012).

There regularly is attitudinal meaning also, as in the disapproving description, "Anonymous shell companies, dubbed the 'getaway cars' of financial crime, are legal in America".[25] Less common, but often more important, is social meaning, as with the colloquial humour in the following.

> He then analysed the peptides using a mass spectrometer and a combination of commercial and home-brewed software to identify which … peptides were likely to have medicinal potential.
>
> (*Economist*, 4 March 2017, p. 6)

The conception of software bubbling up through an amateurish home-brewing glass contraption is delightfully incongruous.

Metaphor and similar figures make important adjustments to the dimensions of meaning, as well as to types of meaning. We will take the following for analysis:

> Outside Germany, she [Mrs Merkel, the Chancellor] is seen as unbending….

Inside Germany, she looks as stiff as a plateful of spaghetti.

(*Economist*, 14 September 2013, p. 28)

The key element of the ironic simile is in the expectedness dimension. First, for an abstract sense as "stiff" has here, no image is expected, and the image of spaghetti is totally unexpected. Second, 'as spaghetti' modifies 'stiff'; SOED <6> gives the meaning of *stiff* as, "Formal, constrained; haughty; lacking spontaneity; lacking ease or grace, laboured". That has seven elements, only one of which would usually be relevant, but the simile evokes all except 'haughty' and 'laboured'. Possible elements become necessary ones; and 'formal' and 'constrained' become the salient elements (or, when the irony is allowed for, their opposites do). Finally, the irony and the playfulness of the simile seem to present an ambivalence: the irony requires us to negate 'lacking spontaneity' and 'lacking … grace', but Merkel's being like spaghetti requires us to affirm them. Figurative language extends and enhances meaning greatly.

LEXICAL FIGURATIVENESS OTHER THAN BY LIKENESS

Semantic figures that do not work by likeness have the same characteristic of creating parallel layers of meaning, i.e. the literal and the figurative, the prosaic and the imaginatively excited. They include metonymy, working by association ("a record for a Turner at auction" – i.e. a painting by Turner) and euphemisms, used to control the social meaning of the expression (drinking too much alcohol was once euphemistically "gone fishing").[26]

Some figures work by contradiction, as with paradox, oxymoron, and irony (e.g. the recent slang use of *wicked* for 'excellent', and "as stiff as a plate of spaghetti", cited earlier). Overstatement (hyperbole) and understatement (litotes) replace a sense with one higher or lower on the relevant scale of intensity; many metaphors have an element of hyperbole.

OTHER LEXICAL MARKEDNESS

The concept of markedness makes another contribution to whether proper nouns

have “meaning”: they do, and they do not. In “Napoleon was defeated at the battle of Waterloo”, *Napoleon* does not have descriptive meaning, being used referentially, which is the unmarked use for proper nouns. However, when a young start-up company is said to be potentially “a Moses company”,[27] the proper noun is used descriptively, which is a marked use for proper nouns; indeed, the use is so fresh and marked that the meaning must be given explicitly (the source passage added “never reaching its promised land”). In “the Napoleon of crime”, (cited earlier), marked use has been partly conventionalised, and weakened; SOED has an entry for it as a regular word (<2>: “A person regarded as resembling Napoleon I”).

Common nouns are often given a comparable marked treatment when they are used predicatively, as in “I’m sure the mozzies here are on steroids, they are big sods” (cited earlier in §2.2.2). In unmarked use, the word *sod* has referential value as well as its derogatory value; but here, it has no referential value, since it is co-referential with the Subject.

2.3.3 Syntactic Markedness

This section illustrates syntactic markedness with three forms of it.

MARKED USE OF PREMODIFIERS

Once, a novelist described a character as “a young, impulsive, over-curious young woman”.[28]

The standard order for premodifiers in English (Chapter 2, §2.2) would require *young* to occur in the position shown in Table 4.2. (“African” has been added to the phrase as a Classifier, to make clear what zones the words are in.) Note that “young” is a Descriptor, and that “impulsive” and “over-curious” are co-ordinated by a comma, which shows them to be of the same semantic type (i.e. Epithet.)

Table 4.2 Unmarked use of *young*

Determiner	*Epithet*	*Descriptor*	*Classifier*	*Head*

An	*impulsive, over-curious*	*young*	*African*	*woman*

Table 4.3 Marked use of *young*

Determiner	*Epithet*	*Descriptor*	*Classifier*	*Head*
A	*young, impulsive, over-curious*	*young*		*woman*

The novelist's phrase has *young* repeated, in marked use, as an Epithet, as shown in Table 4.3.

The effect of that marked use of the premodifier is to force the reader to interpret *young* as an Epithet, not a Descriptor; that is, as highly descriptive and likely to include affective meaning (Chapter 2, §2.2). In this instance, the marked use adds a disapproving affective meaning, and the element 'foolish'. (For more detail, see Feist 2012: 160.)

Here, the signal for marked use is clear, since the marked *young* precedes the unmarked *young*. Usually, the signal is either co-ordination with a word in the non-standard zone, the co-ordination being signalled by a comma, or (for use as an Epithet) intensification, with *extremely*, for example – "a very American desire for quick and unambiguous outcomes" (Corpus of Contemporary American English).

Movement away from the head is the common form of marked premodification. Occasionally a word moves towards the head, becoming a Classifier, and gaining a technical or other referential sense. Such everyday phrases as "my big toe" and "the slow lane" are derived in that way. Table 4.4 shows *big* in that use as a Classifier, and an invented phrase for contrast, with *big* as Descriptor. (*Big* as Classifier now has a sense of its own, making its use unmarked.)

Table 4.4 *Big* as Classifier and Descriptor

Use	*Determiner*	*Descriptor*	*Classifier*	*Head*
Marked	*His*	*swollen*	*right big*	*toe*
Unmarked	*His*	*big, swollen*	*right*	*toe*

Marked use has been important in semantic change, being a very productive

source of a new meanings. *Byzantine* began as a Classifier (<1> "Pertaining to Byzantium"), became a Descriptor (<2> "Characteristic of the artistic … style developed in the Eastern Roman Empire"), and finally became an Epithet (<3> "Complicated; inflexible" – now often spelt with a lowercase "b".) *Single* began as a Classifier and has moved steadily forward through all premodifier zones during its history. A letter to the editor of a newspaper, protesting the use of speed cameras on motor-ways, emphasised a motorway's virtues, as follows: "This is a brand-new, well-lit, multi-lane, dead-straight motorway".[29] *Multi-lane* is normally a Classifier, and *well-lit* and *dead-straight* are normally Descriptors; but they have been co-ordinated with *brand-new*, making them all Epithets, and making the series climactic. Marked use serves expressiveness.

MARKED SYNTACTIC STRUCTURE

A newspaper report quoted the man who found an abducted child as saying, "We're not flash-bangs, we're not aggressive. [In] this one, we surveilled, surveilled, surveilled".[30] Lists of figures of speech do not, to my knowledge, include repetition; but here the repetition of a syntactic unit contributes an extra layer of meaning, iconically evoking the dreary repetition of the process.

A journalist writing about television wrote facetiously as follows.

> In the age of always-on surveillance, God-style, the name of a spy organisation [in a tv show] should strike awe, conjuring 360-degree, X-ray, soul-reading powers of vision and hearing. Think tough, gadgety, danger-zone names like Shield, the Avengers, or the Famous Five.
>
> (*New Zealand Herald*, 18 May 2017)

The first underlined phrase builds a climax within the very small scope of three premodifiers. The second phrase seems to do the same when you take the words simply as words, with referential meaning; but readers are meant to do a double-take, as they grasp the descriptive meaning (drawn from their world knowledge), since Shield and the Avengers really were heroic organisations, but the Famous Five were children; the contrast between the cognitive and linguistic meanings

turns the apparent climax into an anti-climax. In the rescue story (Chapter 2 §2.3.4), the narrator used humorous anti-climax (putting in earplugs) to heighten the emotive climax, which came immediately after it.

A columnist for an international news magazine began his last article, on "the condition of the British state" in 2017, as follows. ("Brexit" means Britain's proposed exit from the European Union; the sentences are numbered for reference.)

> [1] To call Britain's referendum on Brexit a great act of democracy is both to `describe it and to debase the word "democracy". [2] Campaigners traded not hard facts last June but insults to the electorate's intelligence. [3] Remainers foresaw immediate economic Armageddon outside the EU, while Leavers insinuated that millions of scary Muslims would move to Britain if the country stayed in the club.
>
> (*Economist*, 1 April 2017)

The style is not only formal, but also elevated in wording and rhythm, aiming at eloquence. Consequently, syntactic structures that are often insignificant become eloquent and expressive as figures of speech. In sentence [1], the "to" phrases are balanced; sentences [2] and [3] have antitheses. The hyperbolic metaphor "economic Armageddon" adds to the heightening effect.

The second paragraph (not quoted) began, "A low-rent, bilious referendum has begotten low-rent, bilious politics". That balance builds to the following sentence, which builds to its own climax: "But the force of the referendum, a McCarthyite mood in the Brexiteer press and a prime minister whose original support for Remain seems more baffling by the day combined to neuter the legislature". The paragraph ends with the oxymoron, "The referendum has tamed an institution [i.e. Parliament] meant to be constructively feral".

I have quoted the passage at length for several reasons. It illustrates syntactic figures, the topic of this section: balance, antithesis, and climax. It shows that they are neither mere syntactic constructions, nor, as "figures of speech", mere items in an antiquated analysis of rhetoric. More important, it shows that imagination is vital in the semantics of everyday English. It shows that much use of language, even on such an abstract subject as politics, is not informative in

purpose, but persuasive. (It also presents one minor theme of this book, that such analysis is not to be dismissed as stylistics or literary criticism, but strictly is part of linguistics.)

MARKED USE OF DETERMINERS

Definite determiners should be used for referents known to the reader; but sometimes a writer breaks the rule for special effect, as in this sentence from a novel, which begins a new section and introduces a new character: "The bells … rang in his head as if the clappers were striking the raw red interior of his skull".[31] Since neither the character nor the bells have an antecedent, the effect is a little like that of figurative use, stirring the reader's puzzlement and curiosity. Figurativeness, and markedness itself, grade off into unmarked use.

2.3.4 Phonological Markedness

INTRODUCTION

The sounds of language generally seem to be used arbitrarily, purely by convention – as symbols; as Saussure noted, the meaning 'tree' may be expressed as the English sound /tri/, or by the French sound /arbr/. However, many phonological features have a natural effect, which has sometimes been formalised in grammar: the natural, almost biological effect of high pitch and stress has become a sign of emphasis, and a sign that the intonation unit is about to end; and rising tone has become a sign of interrogative mood, and falling tone a sign of declarative mood. (Halliday and Greaves 2008, Part II, gives further illustration).

As well as those unmarked uses, phonology has important marked uses, to be examined in this section. The section is arranged by the functions, not the forms. That avoids repetition, but also brings back into focus the principle that semantics is always functional. Four functions will be identified, although they quite often occur together.

EXPRESSIVE FUNCTION

We saw in Chapter 2, §1.3, that the Expressive function (as narrowly defined there) is served most clearly in grunts of effort and cries of pain, pleasure, or amusement. It is served also by phonological markedness. Examples include: unusual range of pitch or extra volume to express great surprise or anger; lengthening of initial consonants, as with a television weather presenter's "It's a l-l-lovely day!"; extra aspiration of initial consonants, as when "Tom!" is pronounced /t^{h}om/ to express exasperation. Particular phonetic features of consonants are used, also; many swear words have plosive initial consonants, with speakers often exaggerating the plosive effect – almost to being explosive, as in "Bugger it!".

Often, phonological markedness is used for expressiveness (in the looser, general sense), as with ideophones (words with both clear content and a clear sound effect). In the sentence cited in Chapter 3, §6.4 ("The big shock at the Academy [film] Awards on February 26th, aside from a kerfuffle over announcing the wrong winner for the best picture"), the informality and mild scorn expressed by *kerfuffle* are aided by the consonants, especially repeated /f/. An American politician was said to share "the unfocused resentment of globalisation, and its hoity-toity champions, harboured by many working-class Americans";[32] the ideophone expresses the resentment, with its repeated narrow /oi/. Attempts to reduce building costs were once said to have been "a complete shemozzle",[33] with costs actually going up.

The examples just given represent "sound symbolism", which has generally been misunderstood, in ways that illustrate the importance of some of the principles being developed in the book. All the effects just illustrated are optional – dependent on the speaker's intention – and are matters of degree, so that their presence is often dubious – hearers must often rely on context: meaning is intentional, functional, and contextual. For speakers, the expressive effect comes chiefly from the muscular movements of lungs, jaws, and teeth in articulation (in speech production). For example, muscular build-up and release of air pressure in plosive consonants commonly expresses the build-up and release of psychological or emotive tension; the slower articulation and reduced effort of liquid consonants may express relaxation or contentment. You can feel the effect by

saying, "It's a teenyweeny little thing!" aloud, emphatically: the teeth come very close, and the lips spread; you express smallness physically, by the smallness of the gap between the teeth, and between the tongue and the palate. Similarly, "Wow!" is expressive through the jaw-dropping effect. There is no effect from the sounds themselves: *-teen, –y*, and *–ow* as syllables have no such effect. "Sound symbolism" works by articulation rather than sound and by physical expressiveness, not symbolism.

For hearers, perception of the effect is based on their own experience of using those effects in speech; that is because there is an slight "undercur-rent" of articulated speech in our mind and brain even as we listen and read and write. That is, the speech motor systems are activated automatically in those activities, making a functional contribution to word processing, without activating the muscles, and often reaching some degree of consciousness. (See Pulvermüller 2008, for example.) That happens partly because of mirror neurons, which partially activate the motor neurons for human actions we watch, and which have been important evolution-arily, and in our own skill learning. (See, for example, Arbib 2011.) Any directly auditory effect of the sound (in speech reception), is secondary, and learned from the articulatory effect.[34]

Physical paralinguistic features such as tone of voice, speed, and absolute pitch serve the Expressive function similarly, but without being conventionalised into language.

FUNCTIONS OF IMITATION, AESTHETICS, AND PLAYFULNESS

Imitation of real sounds in order to refer to them – onomatopoeia – is the most obvious form of phonological markedness, but also the least instructive for our purposes. More important is the aesthetic value of rhyme, rhythm, assonance, and so on, which are marked forms of natural features of speech, making them salient by creating patterns, as syntactic figurative uses do. The semantic functions involved extend beyond poetry, however, to everyday prose, especially in playfulness. Some slang plays on the sound of words, as with Cockney rhyming slang. Children's stories often do so, too: "We find out how many, we learn the amount / By an Audio-Telly-o-Tally-o Count".[35] Puns – aptly

characterised as being a "play on words" – are now a favourite device of headline writers: when Kellogg's Nutri-Grain was declared the "winner" of a magazine's "Bad Taste Food Awards", the headline writer declared it to be a "cereal offender". Playful nonsense verse ranges from the facetious (e.g. Spike Milligan) to the literary:

> … enhances the chances to bless with a benison
> Alfred Lord Tennyson crossing the bar laid
> With cold vegetation.
>
> (From Edith Sitwell's poem, "When Sir Beelzebub")

I believe that these playful and aesthetic uses draw on the imitative effects and the expressive uses discussed in the previous paragraph.

DISCUSSION AND CONCLUSION: PHONOLOGICAL MARKEDNESS

The functions treated separately are often combined, of course, as in parts of the passage on British politics analysed in the previous section. Sentences such as the following develop a political argument, in the ideational function, serve the expressive function indirectly, and also show an aesthetic enjoyment of language itself, in its use of semantic, syntactic, and phonological markedness: "A low-rent, bilious referendum has begotten low-rent, bilious politics". (Cited earlier, in §2.3.3.) The sentence gains expressive effect first from the rhythm, and then from the plosive aspirated /b/ in "b[h]ilious". (The article was the columnist's last one for the magazine; it was clearly intended as a climax to his articles.)

In unmarked phonology, speech sounds are used as phonemes, with their features being arbitrary and without significance of their own. In many of the uses cited, individual features do have significance and are not arbitrary, as with as the lengthening and aspiration of consonants, and with initial plosives. This marked use is not phonemic, and needs a name of its own. I suggest "phonic use". ("Phonetic" would contrast more clearly with "phonemic", but its established meaning makes it unsuitable.)

Phonological markedness is supported by Menninghaus and others (2014), who examined the importance of rhyme and metre in humour. Neurolinguistic support via strength of input comes from Pulvermüller (1999: 276).

We conclude that phonological markedness is widespread, serves many functions, and is integral with other semantic expression, although it is very different in the means used.

2.3.5 Discussion: Marked Uses

At the time of writing, it is common to treat figurative use as "conceptual", especially in "conceptual metaphor"; Ruiz (2015) even treats paradox and oxymoron as "conceptual analytical phenomena", although they are used for surprise or humour. Such discussion (e.g. Lakoff and Johnson 2003) often uses examples such as "anger is heat" and "lawyers are sharks"; those phrases are indeed now conceptual – and have none of the imaginative effect and the social and emotive meanings discussed earlier. The word *metaphor* is often used for such uses, but the preceding discussion shows that they are analogies rather than metaphors, having no figurative effect. Their semantic significance is like that of the conventionalised metaphors noted in §2.3.2 ("stage of the cycle", "lift … in activity"); their function is to work with jargon to establish register, not to stimulate imagination. Lakoff and Johnson (2003) treat them as universal in English, but the examples given seem to me, at least, to be simply part of one variety of English – the writers' own basic variety.

Section 2.2.4 includes the following statement: "Entities and Events are referential in unmarked use; Properties are descriptive in unmarked use". Most work in modern linguistics would have said, "Entities and Events are prototypically referential; Properties are prototypically descriptive". Describing the phenomena as characterised by markedness provides real explanation (that the common form is controlled by a rule, and that the less common form is controlled by a secondary rule and gives a special effect). Describing them with the concept of prototypicality explains nothing and misses what explanation there is. Once more: the prototypes concept is largely useless in linguistics.

2.3.6 Conclusion: Marked Uses

SUMMARY

Marked uses have been divided into types, by the level of meaning at which they occur: semantic, syntactic, and phonological. The difference in form is responsible for the differences in their characteristics: semantic instances contribute extension of the literal meaning, and the addition of new meaning of all types and of many dimensions; syntactic instances sometimes add meaning, but chiefly give force to the literal meaning; phonological instances sometimes add force, and often add beauty; all give variety to the expression. We have seen the chief characteristic to be imaginative enrichment of meaning, adding a parallel layer to the straightforward meaning of the words. Figurative use cannot be divided from literal use categorically, for several reasons: it is often dependent on context; it is subjective, relying on the hearer's response; and it generally weakens over historical time, in a steady gradient.

CONCLUSIONS

SIGNS USED

The marked phonology described earlier, such as extra volume or pitch range for expressing feeling, has significance for those who hear it; for example, hearers interpret the extra aspiration in "Tom!" and long initial consonant in "Shit!" as signs of the speaker's feeling. However, they are not abstract and arbitrary, as linguistic symbols are taken to be. To account for them, we need to use the concept of index, which is a natural phenomenon that has significance for us through cause and effect, as a footprint signifies that someone was present (causing it), and bending trees are signs of a wind (which causes the bending). Thus, considered semiotically, those uses of expressive sound and marked uses of phonology for the Expressive function are indexes: anger causes extra aspiration, which accordingly "means" anger. (We met indexes incidentally in Chapter 3, in

§2.1 on the expressive function, and in §6 on social meaning.)

Other uses of marked phonology discussed earlier are different in a small but important way, as with alliterative repetition of sounds and playing with sounds as in rhyme and puns. They are not simply natural phenomena like footprints and bending trees; their significance is not simply natural effect; and the meaning is intended by the speaker, not just attributed by the hearer. They are thus distinct from indexes, although they are typically derived from them. Further, there is a natural motivation that explains the use, so they are not arbitrary signs having a meaning only by social convention among the speech community; they are therefore not symbols. Nor are they based on literal similarity, as icons (e.g. maps and diagrams). To describe them, we must identify them as another type of sign.

I know of no established term in linguistic semiotics and will use a relevant term from biology: they are "signals". Eons ago, birds discovered that paleness or redness in fruit was an index of their being ripe and began acting accordingly; the trees adapted to that, developing a stronger colou-ration to encourage birds to spread the seed; so redness in fruit became a signal – a sign like an index, but with a standardised and systematic function. Mating calls and warning calls are also biological signals. The extra aspiration in "It must have cost b[h]illions!" began as an index but has become a signal, when used deliberately, not out of mere impulse. The rhyme in Cockney slang and much verse is a signal of playfulness; regular rhythm and verse form are a signal of aesthetic intention; puns are a signal of humorous intention.

FUNCTIONS

This analysis enables us to identify the functions of figurative uses fairly straightforwardly. Those uses sometimes serve the ideational function, giving descriptive meaning, including imagery. They more often serve interpersonal functions, by conveying emotion and attitude, and by providing humour to control the relation between speaker and hearer, for example. They provide surprise, mental excitement, and a sense of structure, in the aesthetic function. Those functions are so varied, so common in everyday English of all kinds (as shown by the examples in this section), and so important where they do occur,

that we must conclude that the common belief that communication of information is the function of language is misleading.

PRINCIPLES

The book so far has treated the principle of functionality as a working hypothesis, but this section has a provided a rationale to justify it. Figurative use simply cannot be understood, or accounted for in semantic theory, without it, and we have seen that it permeates language – it is not icing on the linguistic cake.

The explanations in this section have shown the importance of markedness, which relies on the existence of a default use that may be replaced in special circumstances by a use with a special meaning or effect. The special circumstance may be signalled by a sign such as a bound morpheme, in "formal markedness"; but with figures of speech the marked meaning is triggered, rather than signalled – by semantic clash or unusual syntactic or phonological patterns. (Both those forms of markedness are here regarded as distinct from "functional markedness", which is the existence of specific meanings for formally marked items, in restricted contexts; see Dixon 2011: 457.) Markedness is a secondary principle of language, subordinate to the general systemic principle; it turns idiosyncratic usage into a variety of systematic usage, establishing breaches of a rule as a secondary rule.

The principle of construal has been considerably developed in this section. In Chapter 2, it occurred principally in the development of semantic structure; here, we have seen it in the development of senses. Also, figurative use leads us to conclude that the expressive and systemic principles are vital to understanding semantics. Language is not satisfied, as it were, with making do with its enormous resources in their straightforward use, but keeps inventing new, figurative uses – for not only its words, but also its syntactic and phonological structures – to provide still more expressivity.

GENERAL

The section has shown that the traditional understanding of "figures of speech" is

soundly based, and that the distinction between literal and figurative use is an important part of semantic theory.

2.4 Conclusion: Use of Senses

There are one or two other ways of using language that could be considered to be uses, as considered in this section. For example, the holophrastic usage of "I think" (Chapter 2, §4.4) could be formalised as a semantic use. Diessel and Tomasello (2001) do so, distinguishing three uses. They call holophrases "formulaic use"; they then distinguish that use from "assertive use", which is that of everyday statement (including both referential and descriptive use), and "performative use", which is roughly equivalent to "illocutionary force". I have disallowed the last mentioned, deeming the concept performative to be too confused to be useful, like illocutionary force (see Chapter 3, §4.2).

This section shows that the uses of meaning are a source of lexical ambiguity. That was set out in §2.2, on referential and descriptive use; it will be clear to the reader that marked and unmarked uses of a word are also a source of ambiguity.

We are all familiar with linguistic forms being used in various ways: many words can be used as modifiers or heads; adjectives may be used as premodifiers or as part of a predicate; adjectival and participial forms may be used as nominals. Chapter 2, §2.2.4, showed that many premodifiers may be used as either Epithet, Descriptor, or Classifier. This section has extended the application of the concept of use, showing that it is valuable in explaining a variety of puzzles and long-running controversies. It is perhaps also to be preferred to the concepts of class and type in some morphosyntactic issues; perhaps "parts of speech" should be explained as different uses, not as different classes or types of word – verbal and nominal uses of *cut*, for example, for example.

The previous section showed that the concept of dimensions of meaning is valuable in the same way. So did the previous chapter, for types of meaning. Those three concepts – of meaning type, meaning dimensions, and uses – are therefore treated in this theory as fundamental ways of explaining meaning. They will also be used in the following chapter, on the internal structure of senses, which complements the treatment of senses' external structure in chapter

2.

Notes

1. I consider that his dimension of quality refers to elements of meaning, not to a dimension of meaning, and his dimension of sufficiency applies to cognition, not language.
2. *Economist*, 25 February 2017.
3. *New Zealand Herald*, 27 November 2017, p. A5.
4. Lidewijde de Jong, *The Archaeology of Death in Roman Syria: Commemoration, Empire, and Community*, p. 101.
5. *BBC Radio*, October 2008.
6. *New Zealand Herald*, 28 July 2017, p. A7.
7. *New Zealand Herald*, 20 May 2016, p. A30.
8. *New Zealand Herald*, 27 September 2013, p. B4.
9. *New Zealand Herald*, 10 April 2013, p. A23.
10. I am asserting that it is available as a cognitive construal, not that it is basic in cognition.
11. *Economist*, 1 April 2017, p. 34.
12. Both from the British National Corpus.
13. Personal observation.
14. *New Zealand Alpine Journal*, 2009, p. 56.
15. *Economist*, 25 March 2017, p. 59.
16. British National Corpus.
17. *Economist*, 29 April 2011.
18. *New Zealand Herald*, 17 May 2017, p. A5.
19. *TVNZ1 News*, 9 September 2020.
20. *Economist*, 13 May 2017, p. 78.
21. *Samson agonistes*, line 86 f.
22. *New Zealand Alpine Journal*, 2016, p. 34.

23. The packs held enough food for two weeks.

24. *New Zealand Herald*, 24 June 2016.

25. *Economist*, 25 February 2017, p. 67.

26. *Economist*, 11 February 2017, p. 34.

27. *Economist*, 3 September 2016.

28. P. D. James; cited in Adamson (2000: 58).

29. *New Zealand Herald*, 7 January 2014, p. A36.

30. *New Zealand Herald*, 21 January 2017, p. A10.

31. Geraldine Brooks, *People of the Book*, New York: Harper Collins, 2008, p. 183.

32. *Economist*, 13 May 2017, p. 40.

33. A spontaneous remark reported in *New Zealand Herald*, 22 May 2017, p. A9.

34. This discussion implies that any symbolic effect of "phonaesthemes" is slight, if it exists at all. (Initial *gl-* as in *glitter* is said to symbolise light, for example.)

35. *Dr Seuss's Book of Bedtime Stories*, Collins, 1998.

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5

Senses (3)

Their Internal Structure

DOI: 10.4324/9781003259381-5

1 Introduction

SENSES

"Senses", as used in the heading of this chapter, cannot be defined simply, just as "word" cannot. When words with descriptive meaning combine into a phrase, they often make a unit of meaning that cannot be distinguished from the meaning of one word, and that therefore should be considered as a single sense. Compare "bicycle" and "vehicle with two wheels", or "people who drink at home before going out to a party" and "pre-loaders". Even "semantic map" seems to make a single sense, although it has no one-word synonym. In "I don't believe that", "that" seems to stand for a single sense, yet the sense is likely to have been represented by a whole clause. The conclusion must be that *sense* denotes a loose class of phenomena, not a category. That accords with the conception that senses are part of a mental network, with the area activated by a word or other expression varying in extent according to context, and with its sub-areas varying in salience and apparent independence.

Again, the nondescriptive kinds of meaning are sometimes used independently, constituting separate senses; but they are often used together, and with descriptive meaning, in one word, linked intimately enough to be considered a single sense, as with descriptive, attitudinal, and emotive meaning in "an excellent job". Similarly, the concept WHEEL is independent, as a sense, in *wheel*, but dependent, as a sense element, in *bicycle*. Furthermore, even senses in their most definable form (those in a dictionary) are generalisations from usage, and therefore imprecise by the standard of empirical reality.

Accordingly, "sense" cannot be defined rigorously. Defined a little loosely, a "sense" is a unit of meaning of the kinds described in the previous chapters, as consisting of a type (or types) of meaning, having semantic dimensions, being used in specific way, and constituting an area in a mental network.

STRUCTURE

"Structure" as used in the heading of this chapter also needs definition. It is used here as it was in Chapter 2, namely, as the relationship of parts to a whole. There, we considered the relationship of senses to each other in groups and figures; here we consider the structural relations of elements within senses. Senses are units of semantic structure (as in Chapter 2), yet have internal structure, just as atoms are units of matter, yet have internal structure. The two levels of structure differ in their nature.

WHAT THE CHAPTER COVERS

As units of meaning, senses may be realised in morphemes, whole words, syntactic structures, or phonological patterns. However, senses conveyed syntactically or phonologically are usually simple (being grammatical or affective); so, to concentrate on what most needs explanation, the chapter deals largely with lexical senses.

The chapter must explain how it is that meaning can be a network, yet have units, i.e. "senses", and how senses can be units, yet have structural elements. It should show how the previously discussed elements of senses combine, as the

basis for the structures set out in Chapter 2. It should explain any variations in structure according to the type of meaning and according to semantic class. It should also show how sense elements relate to the contributory mental faculties of cognition, affect, and so on.

OUTLINE

This chapter extends the account of senses given so far: that they are characterised by having types of meaning (Chapter 3) and dimensions (Chapter 4), and by having distinct uses (Chapter 4). It shows the nature of the semantic network, emphasising how it establishes the links between senses in a paradigm and between the sequential sense of utterances.

2 General Structure of Senses

2.1 Introduction

As noted in §1, it is usually helpful to regard the various kinds of meaning as making a single sense, when a word or group has descriptive meaning, and affective or social meaning as well. However, since the different kinds of meaning have different internal structures (and are related to each other in the word rather loosely), they will for convenience be treated in this section as separate "senses".

2.2 Structure of Grammatical Senses

GRAMMATICAL SENSES CONSIDERED INDEPENDENTLY

As shown earlier in the book, grammatical meaning seen from the hearer's point of view consists effectively of procedures to be carried out (according to the speaker's instructions), organising content senses into the overall meaning of the

utterance. The procedures are relating, adding, adjusting, and so on, which are general mental processes, not specifically linguistic ones. A grammatical sense must therefore consist of a node that directs the hearer's mind from processing the content in specifically linguistic ways, to processing it in general mental ways. That "pointer" node is all that a grammatical sense consists of, linguistically. That is why grammatical senses cannot be classified into semantic classes.

EFFECT OF GRAMMATICAL SENSES ON DESCRIPTIVE SENSES

Morphologists have debated whether suffixes and prefixes operate on a word's root in the way modifiers operate on head words. It is clear that they do in present-day English, for many readers and for some of the time, at least. The evidence for that is that we now use as words elements that were only combining forms or affixes until recently – *mini* and *mega, pre* and *post* are established as words – and neologisms constructed from combining forms and affixes are accepted without question in most varieties of English. Examples of such neologisms include: *anecdata, backwardation, dashcam, neo-noir, premiumisation*, and *semi-surviving*.

We conclude, then, that grammatical meanings do sometimes operate within words. For example, in *prehistory*, "pre-" carries the meaning, "Modify 'history' by applying 'before'." In *stardom*, "-dom" carries the grammatical meaning, "Adjust the concrete sense 'star' into an abstract sense". See also §2.3.4 later, the paragraphs on polysemy.

A further conclusion is that, when examining descriptive senses (in §2.3, next), we may find two complete senses within one sense, as with *dashcam* including 'dashboard' and 'camera'. That, however, should not surprise us, since we all take it for granted that *bicycle* means 'vehicle with two wheels', which apparently contains the senses of *vehicle* and *wheels*.

2.3 Structure of Descriptive Senses

2.3.1 Introduction

This section treats descriptive senses as consisting of subsenses and sets out the relations among those subsenses. The structure of those subsenses is treated in §5.

2.3.2 Descriptive Senses as Units

Descriptive senses must be units, in some way, and the natural way is to have boundaries; but it is now more and more often accepted that they do not have definable boundaries. (See Geeraerts and others 1994: §1, and Geeraerts 2016 for linguistics, and Pulvermüller 1999: 277 for neurolinguistics.) Geeraerts and others (1994) give a useful account of their unity, through prototypicality effects, schematicity, and mechanisms of semantic extension (1994: 221). I accept their explanation, but offer the following as a better expression of it – needed because the concept of prototypicality is unsatisfactory. This section develops the argument further: that the lack of discreteness does not matter, since senses have their own identity and integrity, especially when understood as senses in use, not as the unreal abstractions printed in dictionaries.

For example, *stallion, mare*, and *foal* can be argued to have no boundaries, since they all share conceptual elements with *horse*, which shares elements with *cow, plant*, and so on indefinitely; but the words each have a distinctive combination of elements. If we take the various senses of *horse*, the same applies. Sense <1> is the basic sense (horses as a species). Sense <2> adds 'representation of' to that. Sense <3> adds 'cavalry soldiers', which relates to *horse* as 'soldiers on [horse]-s'. Sense <4> adds 'person resembling a'. Those senses make branch I in SOED (2002); branch II replaces the implicit element 'living' with 'inanimate'. Those extensions, along with figurative and other marked uses, make up the various senses of *horse*. (Along with extensions through figurative and other marked uses, they make up the "mechanisms of semantic extension" of Geeraerts and others 1994.)

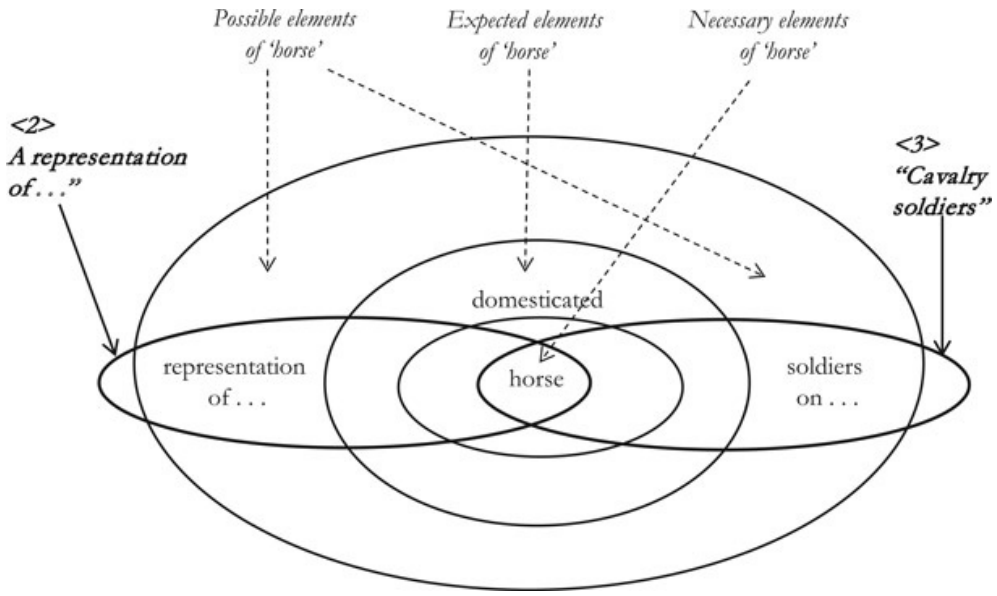


Diagram 5.1 Senses <2> and <3> of *horse*, as units

Diagram 5.1 illustrates those points. It shows the possible elements of *horse*, such as 'soldiers on horses', as occupying an outer ring in the sense; expected elements, such as 'domesticated', are in a smaller ring within that; and necessary elements are at the centre. Sense <2>, 'Representation of a horse', is then shown by the ellipse that encloses its elements: it is a unit in being a unique combination of sense elements.

In senses seen from the system view – as portrayed in a dictionary entry – the expected elements (e.g. 'domesticated', for sense <1> of 'horse') and possible elements (e.g. 'for riding' and 'of a large breed') radiate "outwards", becoming less salient in proportion to their lower frequency of occurrence. That is the insight behind the concept of "peripheral" elements in "prototypes".

A hill is an identifiable entity, even though most hills have no definable boundary; its identity lies in its salient high point. Similarly, a descriptive sense has a salient "centre". That is often a distinctive conceptual element; often, it is a distinctive pattern of elements (as noted previously), just as words are distinctive patterns of letters. (Senses that are not purely descriptive are usually salient because of their social or affective meaning.) The idea of sense identity as a peak sharing ground with other senses is suggested in Diagrams 5.2 and 5.3. Diagram 5.2 shows the necessary sense elements of *stallion, mare*, and *foal* as a network; Diagram 5.3 represents the same network with lines superimposed to show those

words' senses as peaks dominated by a distinctive sense element, but rooted in others.

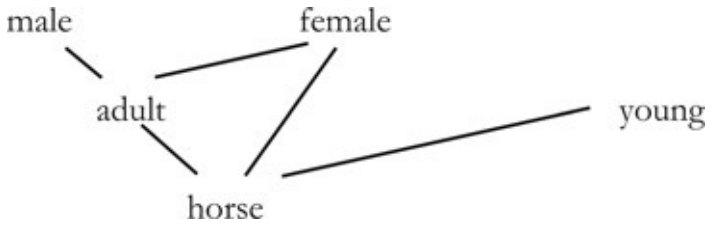


Diagram 5.2 Sense network for *stallion, mare*, and *foal*

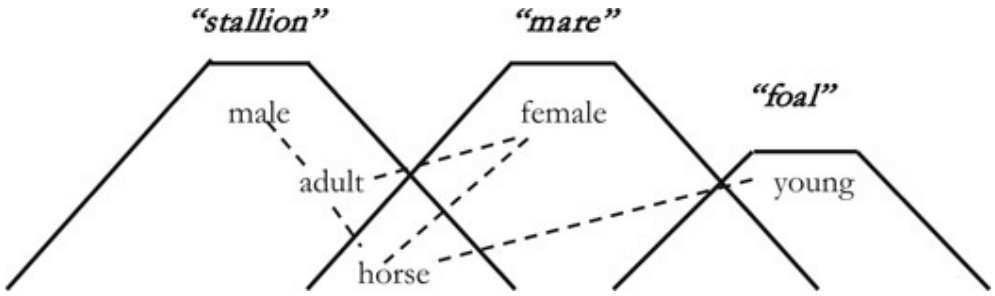


Diagram 5.3 Senses of *stallion, mare* and *foal* as peaks

Another way in which a sense can be distinct without having clear boundaries is through the speakers' and hearers' use of the system sense: they bring one area of the sense network into focus, making it more salient, in a higher level of consciousness. We have seen that process in operation in referential and descriptive uses (Chapter 4, §2): a referential use will make the necessary sense elements focused, excluding the expected and possible elements. That is shown in Diagram 5.4. The focused necessary element is shown in a bold circle; that contrasts with Diagram 5.1, showing senses <2> and <3> with possible sense elements included.

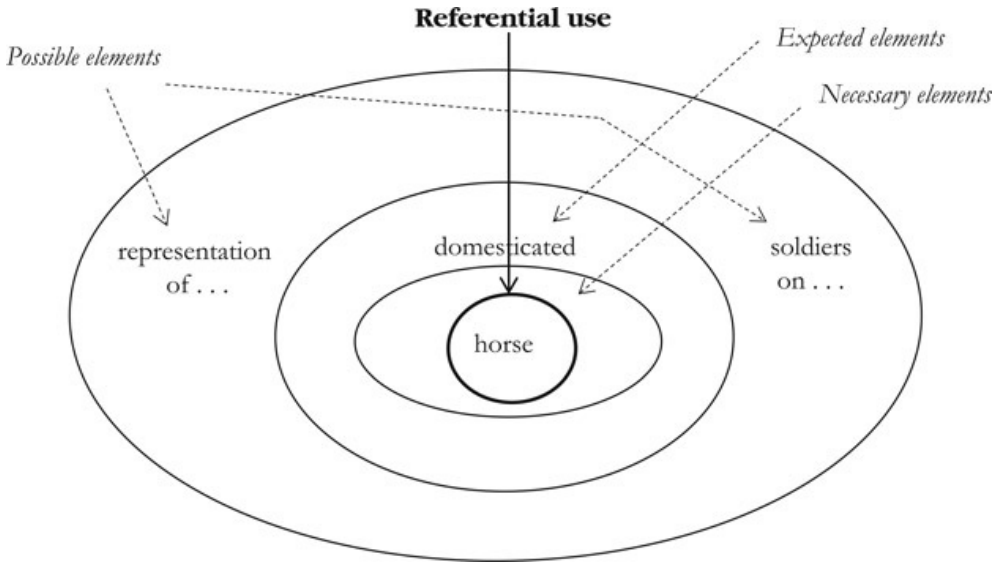


Diagram 5.4 *Horse* in referential use (sense <1>)

Descriptive senses thus have clear identity, without needing distinct boundaries. A further analogy is useful. A country's roading network has units identified by the hubs. There are no natural boundaries, but useful approximate boundaries can be drawn for particular practical purposes. The same applies to meaning networks; workable boundaries can mostly be drawn straightforwardly for various practical purposes, because speakers do not invoke all of the possible meanings – and near enough is good enough, here. (As so often, a functional approach resolves alleged problems thrown up by a formal approach.) Neurolinguistically, the boundaries lie where activation runs out.

2.3.3 Descriptive Senses as a Hierarchy; Primes

When we consider descriptive senses as resembling cognitive concepts, we see a hierarchy from a general concept such as COLOURED, and the correlated sense 'coloured', through a scale of more particular senses such as 'red', 'bright red', and 'scarlet'. That perception is valid, but a problem occurs when we consider where the scale ends. It is usually thought to end with "primes" – elements that cannot be analysed further – but there has been no consensus on their nature (such as whether they can be expressed in words), or on any particular instances. Aitchison (2012) discusses the problem usefully, dealing chiefly with the work of

Miller and Johnson-Laird, and of Wierzbicka (covering Natural Semantic Metalanguage). Jackendoff (2002: §11.2) discusses it more thoroughly, dealing with work by Pinker, Grimshaw, and Pustejovsky. I agree with their conclusion that past work has been unsatisfactory, but give different reasons.

That past work has assumed that treatments taken from logic are valid for semantics; but the assumption in logic that senses are independent units is quite misleading, as we have seen. Also, the network of meaning from which we pick out individual senses has no hierarchic "top", and no bottom where primes could reside. Furthermore, when we remember that language does not exist in the realm of abstraction, but is instantiated in the mind and brain, we remember that most concepts and meanings are ultimately based on multiple perceptual experiences, directly or indirectly (through abstraction). For 'scarlet', there are prime experiences, but no single prime element; so the concept of "a prime" as a unit is misleading. Moreover, since they are perceptual,[1] the "primes" are not semantic.

Karmiloff-Smith (1992: 14) describes a complementary kind of prime. As infants analyse their perceptual experience, they develop concepts such as SELF, MOTION, PATH, and AGENT. Those concepts are used as bases to "re-describe" (construe) the child's perceptions into the format of image schemas, which are later re-described again into linguistic form, as children create for themselves senses appropriate to the words they hear, by naming the things and events they perceive. Those basic concepts are "primes", but not semantic, being cognitive. (I take the image schemas to be the kind of "prime" most writers have in mind, and also cognitive, not semantic, and dubiously without analysable constituents.) Fortescue (2009, 2010) supports Karmiloff-Smith's analysis psycholinguistically, arguing that meaning is developed from the "affor-dances" of perceptions. Zwaan and Madden (2005: 224) and Hsu and others (2015) also support it, noting that traces of the original experience remain in the brain.

Fodor and others (1980: 313) argue that there is a comparable development, whereby complex concepts are developed into unitary meanings, which are not analysed in use, although they are capable of analysis in reflection; they would be semantic – not cognitive – "primes" (being not analysed in use), but not in the usual sense of the word (since they can be analysed).

There is, then, a valid intuition that prompted the theory of primes, but the

theory took it too far; according to Aitchison (2012: 97), it has been "mostly based on descriptive convenience and wishful thinking".

2.3.4 Descriptive Senses as Networks

RELATIONS AMONG SUBSENSES AND SENSE ELEMENTS

SOED very helpfully divides its numbered senses into subsenses, marked off by semicolons, and sense elements, marked off by commas. I begin by considering the relationships among such elements, as with the first subsense of *gracious* <3>: "Of exalted people: kind, indulgent, and beneficent to inferiors". The pattern of the three elements is a frequent one: they are points on the vagueness dimension of the base concept. One alternative ("kind") is simple and vague; the others expand it, adding other sub-elements that specify it progressively – "indulgent" adds the manner of being kind, and "beneficent to inferiors" adds the recipient of the kindness. Naturally, the repeated element is necessary to the subsense; the other elements are likely, not necessary.

Subsenses are related similarly, as in *gracious*. Diagram 5.5, part (a) (on the left,) represents some of the subsense elements of *gracious* as points on the vagueness scale, with the elements further down the diagram being the more precise ones. Diagram 5.5, part (b), represents the subsenses (boxed) expanding the sense downwards, following the vagueness scale in (a).

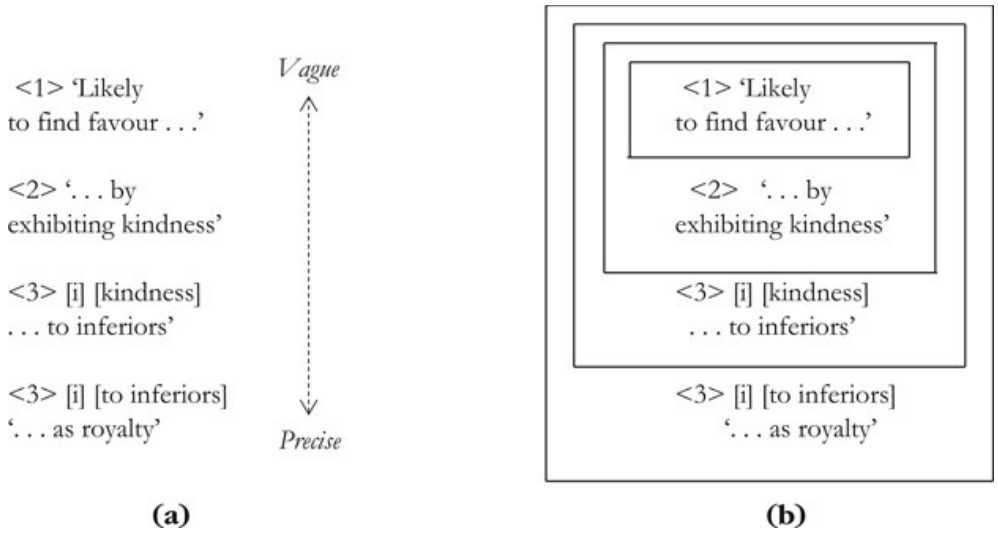


Diagram 5.5 "Gracious": relations among subsense elements, as degrees of increasing precision

UNNOTICED ELEMENTS

The possible elements are often not specified in a dictionary. For example, *bush* <7> tells us that "the bush" means "remote rural areas"; but the sense regularly also has a more specific element such as 'uncivilised', 'involving hardship', or 'discomfort'. (Perhaps the lexicographer had referential use in mind, forgetting the descriptive use.) Referential words that draw primarily on cognitive elements are treated similarly; *knap* <1> is "Strike (a thing or person) with a hard short sound"; but the action of *knapping* is specifically with a swing, and with an implement. The omission is hardly surprising, but it illustrates the fact that senses and subsenses grade "downwards" into less salient, less conscious elements – salience being one dimension of the network.

RELATIONS OF NONDESCRIPTIVE MEANINGS WITHIN A SENSE

The nondescriptive meanings were in Chapter 3 treated abstractly, as meaning "types"; here, it is useful to treat them as levels or planes in the mental network (where mental planes correlate with levels of the brain). Nondescriptive senses take the meaning to another plane and take the hearer to a different level of the

mind. Consider "His brows arched in mock-disdain. [He said:] 'You're being very gracious with me this evening'". (British National Corpus). *Gracious* here has the descriptive meaning, 'kind to inferiors' (sense <3>); in use, it expressed an attitude of jocular humour and a feeling of pleasure, since 'inferiors' was intended ironically. In its context of a friendly conversation, it carried the social value of formality, which was also intended ironically. The internal structure of the word as used, then, was a network of all four types of meaning, as illustrated in Diagram 5.6. (See also Chapter 3, §8.) The diagram represents the types of meaning as rectilinear planes, drawn as if we are looking down on them from above and to the right. Lines link words and their sense elements; 'kind to inferiors' and approval, for example, are linked to *gracious*, which expresses them.

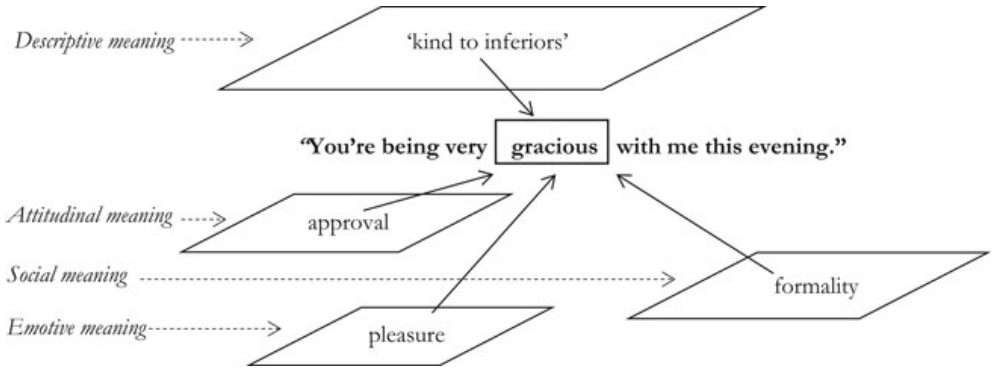


Diagram 5.6 *Gracious*, as a network of meaning types.

"RADIAL" NETWORKS

Certain elements of the sense structure act as the nodes to which associated meanings are linked. They can accordingly be pictured as being at the "edge" of the sense. That is reasonably apt for such links as were discussed in Chapter 4, §1.3.2: 'energy' – a marginal quality of horses – is linked to the idiom "Hold your horses". Other linking nodes, however, are "central", as for the links to hyponyms, antonyms, and so on. Synonyms are linked by the whole of the expected elements: some elements are shared, and some contrast. *Horse* and *nag*, for example, share their descriptive meaning, but contrast in social meaning.

FRAMES AND COLLOCATIONS

That linking may be illustrated further and related to "frames" and "col-location", through words related to *revoke* and *cancel*. *Quash* fits the frame of revoking a legal ruling, for example; *retract* fits revoking an order given by the agent himself; *repudiate* fits things that other people impose on the agent; *cancel* is much less closely related to a particular frame – it is general. In the mental lexicon, those words have moderately entrenched links to our knowledge of legal rulings, orders, and impositions respectively. For a speaker, the legal-ruling frame will activate the link to *quash*; for a hearer, the link works the other way, with *quash* activating the link to legal rulings. The 'legal' social meaning is the part of the internal structure that bonds it to other senses in the context. This relationship is commonly discussed as "collocation", but our analysis allows a fuller and clearer explanation. Collocation and frames, then, have a semantic explanation; they are psychologically real, primarily cognitive, and not part of particular word senses. That linking to frames is set out neurolinguistically by Fortescue (2010: 188–190).

COMPOUNDING

The internal structure of words with prefixes or compounded roots is a matter of controversy: do they retain the meaning of those morphemes? Chapter 4, §1.4, related the issue to the referential/descriptive distinction; here, I add a general point from Aitchison (2012: 13), which we should accept as established psycholinguistically. She says that we have a default procedure of taking such words unitarily; if that procedure fails us, we analyse the word morphologically. We also have a "lexical toolkit" that will generate neologisms. The frequency of neologisms in 21st-century English demonstrates the second and third procedures clearly – *securocrats, anecdata*, and "Sanders' *ever-presence* in the [presidential] race", for example. Clark and Clark (1979) discussed the "tool-kit" procedure for generating verbs from nouns, as with a deliverer on a bicycle "porching" a newspaper.

RELATIONS AMONG SENSES OF ONE WORD: POLYSEMY AND MONOSEMY

Although this general section is about the internal structure of individual senses, this section will for convenience deal with the "senses" conventionally ascribed to one word, as if they were all variations on a single general sense.

From the semantic point of view, we need something much better than the concept of polysemy accepted in most dictionaries. For the verb *strike*, the SOED has 9 branches, 55 numbered senses, and 43 lettered (sub)senses – 98 senses, ranging from 'make one's way', through 'lower', 'impinge upon', 'mark with a line', to 'agree' – the word is "polysemous". It gives "inactivity", "a company of bears", and "any of several arboreal edentate mammals" in a single entry, as senses of same word (*sloth*). If we accept that a word is the pairing of a word form and a sense, there are three words spelt "s-l-o-t-h", and there should be three entries, each monosemous. The issues arising from such examples have been discussed often enough, but rather inconclusively. A fresh approach will be useful.

Considered neurolinguistically, a sense is a pattern of activation of neurons; when there is no activation, there is no pattern, and no sense or "meaning" exists. (That is rather like the display on a digital clock; when it is switched off, no time "meaning" is signalled.) Consequently, there are no senses "stored" in the brain as static continuing entities. (The digital clock does not store all the possible times that it can display.) By further consequence, the issue of polysemy versus monosemy is unreal, since it assumes that continuing static senses are real. In discussing polysemy, we are discussing how to treat actual uses conveniently, when we discuss them.

That point is reinforced by the fact that linguistic sublexical sense elements are not formed into pre-existing lexical structures, as we have seen earlier in this section. They form words and become specified for dimensions, definiteness, and so on, only as the speaker constructs groups and clauses for utterance. Those precisely specified forms are varied (in hearer meaning) according to context and are fleeting. The senses as formulated by linguists for such purposes as making a dictionary are unreal abstractions; and there is little objective basis for assertions about how many "senses" we should classify all the historical uses of a word into.

Moreover, as we have seen, senses in use are not structured like the senses specified in dictionaries. They do not employ all of the possible sense elements, and they have a strong core of salient necessary elements that characterise them. The theory of polysemy is therefore unsuitable for those real-life senses, since it relies on the classification and sequencing given in dictionary senses, according to etymological history (usually) and to greater or lesser extension of the core meaning.

Psycholinguistics, however, seems to offer something more substantial and useful. Research shows that there are alternative processes that generates senses in production, paralleling those for comprehension, as cited earlier from Aitchison (2012). In one process, an entrenched combination of sense elements is activated, producing the sense ready-made, almost as set idioms are produced ready-made – as if there were pre-existing polysemous senses for the word. In the other process, the sense elements are combined or specified afresh for each use – as if there were a general-purpose monosemous sense (i.e. a deeply entrenched one), from which more specific senses are generated in use. Most people will use the two processes on different occasions, even for the same word; but some people have a general preference for one or other.

SOED seems to acknowledge the argument for monosemy, in its entry for *good* <1>: "Having (enough of) the appropriate qualities". We can generate specific senses from that by formulating the qualities appropriate in the specific contexts. However, the SOED goes on to spell out those specific senses, as if accepting polysemy. It gives <1b> "Of food or drink: fit for consumption" and <1c> "Of soil: fertile", although each of those "senses" consists simply of "having … the appropriate qualities" (<1>) in the relevant context.

Those conclusions, however, do not settle the linguistic issue, since they are matters of the psychological processing of language, rather than of language itself. Nevertheless, the two patterns have some significance for us, since they carry different linguistic advantages and can serve different functions. The monosemous process needs less memory, since there are far fewer entrenched patterns established and maintained; but the polysemous process needs more processing and is likely to be slower – generating the possible senses of *gracious* from 'To do with grace' would be difficult, and therefore slow. The monosemous process seems good for referential uses, since they need only the basic and simple

sense, without processing to add further detail. Besides, a vague sense is frequently good enough for the purpose of both speaker and hearer; many scholars have noted that language is frequently "underspecified" – language seldom needs to be a full and final statement of truth.

We conclude that polysemy is an artefact of how meaning has been represented and studied, rather than an important characteristic of semantic structure. The issues it raises, however, give useful light on how senses are structured and emphasise that semantic structures must be seen as constantly produced in life situations, and constantly changing accordingly.

That conclusion, argued from semantics and psycholinguistics, is reinforced by neurolinguistic evidence given by Pylkkänen and others (2006). They show that the varying meanings linked to the same morphological root are commonly processed "monosemously" in the left hemisphere of the brain. They also show, however, that if this does not resolve the meaning satisfactorily, the word can be processed in an opposite way, and "polysemously", in the right hemisphere.[2] (Again, we see that language must be understood functionally, not as a static structure of entities.)

2.3.5 Descriptive Senses Controlling Syntagmatic Relations: Bonding

This subsection amplifies points that were made in Chapter 2, on bonding. It shows how the internal structure of senses provides the bonds that create the syntagmatic semantic structure; that is, the relations between senses in sequence, in an utterance.

CONTENT BONDS

One method we saw in Chapter 2 was that modifiers bond to the head by providing the value of an attribute that is an element of the head sense. For example: all physical Entities have the attributes of size, shape, material they consist of, and so on. In "a slim white candle, "slim" (as modifier of "candle") provides the value for the candle's shape attribute; "white" provides the value for its colour attribute. The value–attribute relationship constitutes the bond between

the Property modifier and the Entity head. That is illustrated in Diagram 5.7, with 'value of' in italics between the words, as the bond, and ellipses emphasising the chain-like nature of bonding. The left-hand ellipse, for example, should be read (upwards) as, "*Slim* specifies the value of the shape attribute of *candle*".

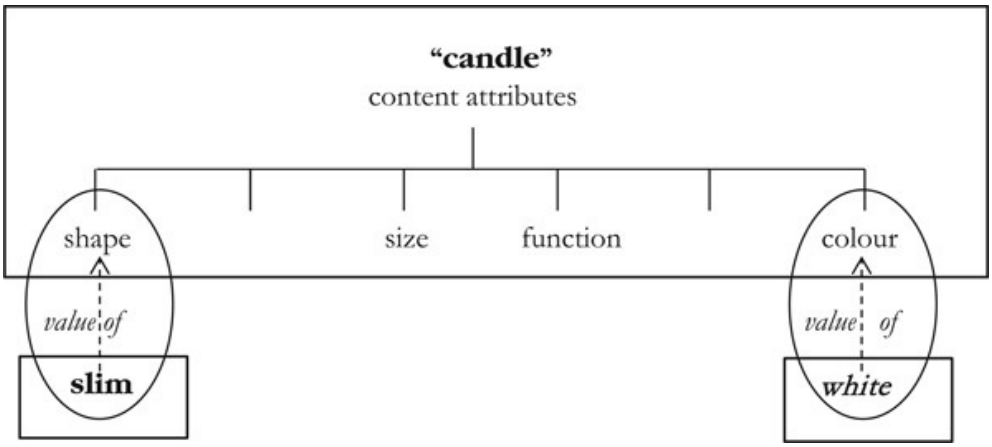


Diagram 5.7 Bond between modifiers and head, for "slim white candle"

That method, typical of subordination, sometimes applies in complementation also. As noted previously, Circumstances commonly provide the value of the time, place, or manner (etc.) attribute of the Process – the familiar roles of adverbial phrases and clauses.

GRAMMATICAL BONDS

However, complementation often consists of a grammatical bond, not a content one, relating words' grammatical attributes, not their content attributes. That is a by-product of grammatical inflections for plurality, tense, number, gender, etc., and the grammatical statuses they signify, according to the word's semantic class – Entity, Event, or Property. (See also Toman 2001). In "These data show", for example, "data" includes the attribute of number, its value being specified as plural by the plural inflection, *-a*; "show" also is plural in number, although covertly so (or, it is "marked" by a "zero morpheme"). The shared element 'plural' constitutes a bond between them. Similarly, both words are in the third person;

'third', as the value of the person attribute, is another bond. That is represented in Diagram 5.8. ("These" is linked to "data" by 'plural', similarly, of course.)

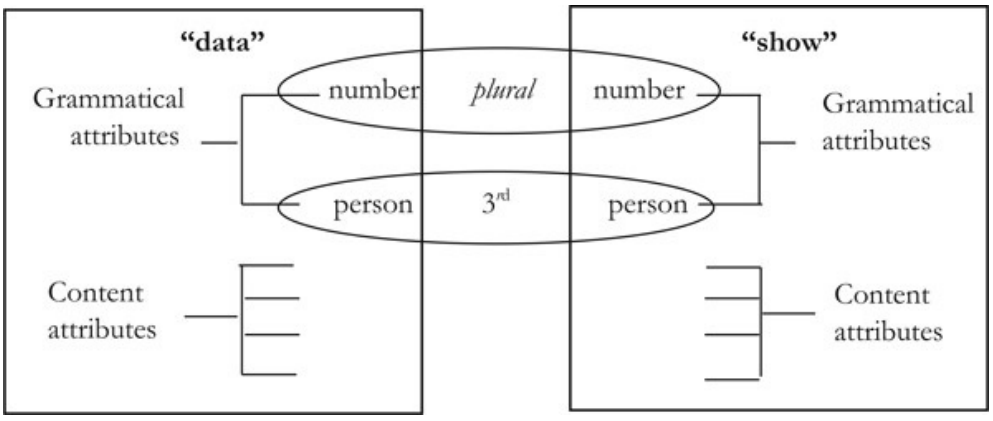


Diagram 5.8 Bonds between "data" and "show"

Note in passing that in English the distinction between singular and plural, like some other grammatical statuses such as animacy, is increasingly being treated by users as a semantic issue, rather than a morphosyntactic one; speakers now sometimes have a choice, which is made according to stylistic preference, or the speaker's social dialect. "Data is …" is now widely accepted (see the British National Corpus).

We may also note that "data show" can occur also in the Entity group, "a data show", with a quite different and complex structure. To illustrate the complexity of English structure, and to demonstrate that the theory can handle it, I will outline the structure of the group, and the sense-internal structure it relies on, as follows. A data show is a presentation that shows data, so that the group is in one respect a realisation of the Event, 'to show', and the Entity, 'data'. But in "a data show", "show" functions as an Entity with "a" as determiner, and with "data" functioning as a modifying Property (related by a Type quale). Therefore, in "a data show", "data" denotes a Property with a subordinate entity within the sense; and "show" denotes an Entity with a subordinate event within the sense. (Sometimes, "a data show" seems to be structured with "data" as the Undergoer of a transitive Process; in that use, the bond is the transitivity relation.)

DISCUSSION: WHETHER BONDS ARE PART OF A PARTICULAR

SENSE

A bond that is a shared element is clearly part of a sense, but other bonds are not clearly so. We saw in §2.3.2 that psycholinguistically senses exist in a network; sense boundaries are useful but conventional – not psychologically real; senses are not physical entities, and "parts" and "elements" are used of them only metaphorically. Accordingly, asserting that a particular bond element is part of a sense is a matter of explanatory usefulness. For example, a dictionary may give definitions of *bite* with "Of a fish: take bait", "Of chemicals: corrode", and so on. For "Chemicals from nearby factories had bitten deeply into the stonework", including "of chemicals" in the sense of *bite* would be redundant. However, for "The stonework had been bitten into deeply", including it would help an explanation of the meaning.

In many expressions, we conceptualise the bond as a relation, as in the "a data show" (just above) being bonded by transitivity. In that conceptualisation, the bond is a link between senses, not part of one of them. However, the brain network consists of neurons, which cannot be divided between nodes and links. Again, the issue of bonds as parts of a sense is unreal – although the distinction between node and link is often useful.

2.3.6 Internal Structure Controlling Paradigmatic Relations

This is the section promised in Chapter 2, §3.4, as a fuller treatment of sense relations. It makes a few general points; the specific explanations – the important points – have been made already in sections throughout Chapter 3 and this chapter.

RELATIONS BETWEEN SENSES OF THE SAME WORD

The various senses denoted by a word are linked by a shared element. (Identical word forms without such a link are homonyms, not instances of the same word.) The numbered senses of *gracious*, for example, are unified by the element, 'favour' (the original meaning of *grace*), making it possible to regard SOED's

seven senses of *gracious* as subsenses of 'To do with grace'. On the plane of conceptual elements, they differ by relating 'favour' to various other elements: 'likely to find favour', in <1>; 'exhibiting favour' in <2>. They develop 'favour' in various dimensions: <3> is specific to exalted people; <4> is specific to God. Sense <6> is more general than the others; <7> is vague ("happy, fortunate, prosperous"). (The control of syntax will be explained further in §2.3.7.)

RELATIONS BETWEEN SENSES OF DIFFERENT WORDS

This section is specifically about sense relations; lexical relations are a different matter, involving morphology, syntax, and a collection of senses that are related to each other in rather random ways controlled by history, rather than by systematic sense relations. The term "semantic relations", which is sometimes used, can be taken as either the same as "sense relations", or else as covering relations in the whole field of semantics, since most things in semantics involve relations; as noted previously, the term is avoided here accordingly, as too general. Even "sense relations" is a little unsatisfactory, since the nontechnical meaning of the term includes the relations between modifiers and heads, which is a relation of senses.

Of the sense relations studied in the literature, this book has studied synonymy, and to a much smaller extent, antonymy. Chapters 3 and 4 have shown that those relations vary a great deal in their nature, consisting of similarities and differences in meaning type, dimensions, and uses – which explain sense relations, along with so much else. The relations hold among word senses, group senses, and meanings of whole figures.

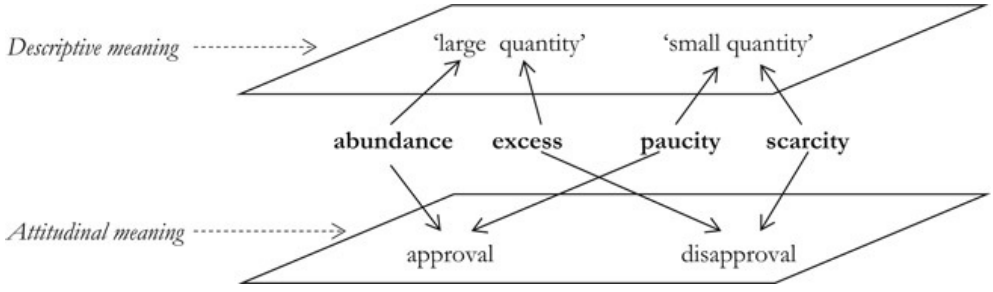


Diagram 5.9 Synonymy and antonymy in *abundance, excess, paucity*, and *scarcity*

Antonymy and synonymy typically combine having sense elements in common and having elements that contrast. Antonyms, obviously, have elements that contrast, as with *abundance* and *paucity*; but they have elements in common that make them comparable ('quantity' and 'adequacy', for *abundance* and *paucity*). As noted earlier in the book, the similarities and contrasts may be in nondescriptive meaning, as well as in descriptive meaning. Thus, *abundance* and *excess* are synonymous in descriptive meaning ('large quantity'), but antonymous in attitudinal meaning, *abundance* conveying approval of the large quantity, and *excess* carrying disapproval. *Scarcity* and *paucity* differ in a similar way for 'small quantity'. That small network of internal and external relations is shown in Diagram 5.9, which shows meaning types as planes, as in Diagram 5.6. There are some other things that are in fact sense relations, but have not been included in the traditional discussion. For example, there are the relations among the polysemous senses of one word, which are dealt with earlier, in §2.3.4, and relations by topic. (By the last, I mean what Wierzbicka 1985a: 201 illustrates as "*horse* words": relations among *horse, neigh, gallop*, and *saddle*.) They seem worth examining, too, and they have been given consideration earlier, along with the other relations.

There are yet other "sense relations". There are meronymy (the relation between a whole and its parts) and taxonomy or hyponymy (hierarchic relations), along with various sorts of incompatibility and oppositeness. They are given little attention here, because the relations are generally cognitive, not linguistic, as with *car, transmission*, and *gearbox* (meronymy); *galaxy, solar system, star, planet* (taxonomy), and *animal* and *dog, red* and *green, paperback* and *hardback* (various sorts of incompatibility). The exception to their being cognitive is illustrated by *arm, elbow*, and *wrist*, since different languages "divide" those body parts differently. Cruse (2011: chapter 9) treats those relations briefly, and Cruse (1986) treats them fully.

The relation that links these words is generally that of an attribute and its value. That is illustrated in Diagrams 5.10 and 5.11. Diagram 5.10 shows sense relations by topic for *candle*: 'burn', 'light', and so on, which are the value of its attributes, and lexicalised independently in the words, *burn, light*, and so on. 'Wax' and 'wick', as parts of a candle, make part of a miniature meronymy in *candle*'s internal structure. The attributes in *candle* are well spelt out in SOED's

definition: “A (usually cylindrical) [=shape] body of wax, tallow etc. [constituency], including a wick [parts], for giving light by burning [function]”. The concept of features, which has been deemed previously to be unsatisfactory on the whole, has a value here, as denoting the attribute or value nodes in a sense network, and as aiding the analysis of hierarchic relations and antonymy, as with ‘legs’, ‘seat’, and ‘back’ as features building up ‘stool’, ‘chair’, and so on.

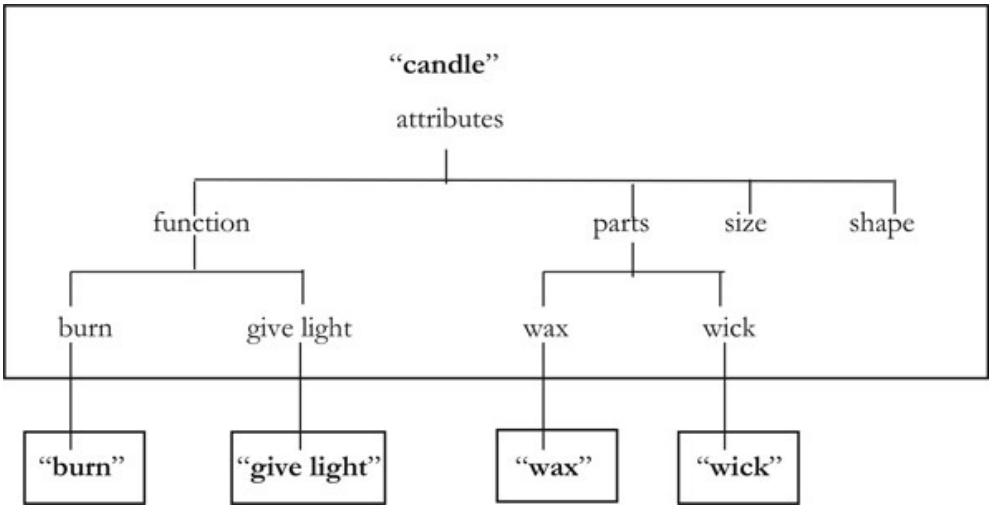


Diagram 5.10 Internal structure of *candle*, with words related by topic

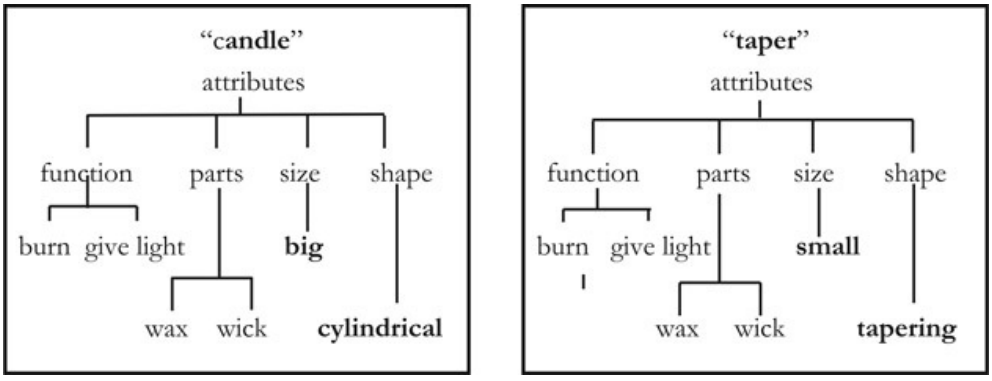


Diagram 5.11 *Candle* and *taper*: structure controlling sense relations, through size and shape elements

The whole of ‘candle’ is linked to ‘taper’ as an approximate synonym; if we take a taper as a kind of candle, then the two are linked in a hierarchy. Their relations are illustrated in Diagram 5.11. The elements that distinguish them, shown in bold type, determine their place in the hierarchy; the other elements are

shared, comprising their relative synonymy.

2.3.7 Internal Structure Controlling Word Order

ORDER IN GROUPS: PREMODIFIERS

The relation of attributes and their values, just discussed, controls the grammatical order of premodifiers in Entity groups. Chapter 2, §2.2, showed that, in groups such as "a (1) beautiful (2) white (3) wax candle", premodification is structured as (1) Epithet + (2) Descriptor + (3) Classifier. Those three types of sense supply values for corresponding attributes in the sense they modify. The Epithet sense "beautiful' gives the value of a non-gradable attribute of 'candle'; the Descriptor, 'light', gives the value of a gradable attribute; the Classifier, 'wax', gives the value of the quale attribute of Constituency (Chapter 2, §2.2.4). Such linguistic attributes are part of the internal structure of each Entity sense. (Event senses do not take several premodifiers, so the question of grammatical order of premodifiers does not arise for them.)

Diagram 5.12 shows the relation between the linguistic attributes and premodifier order graphically. It shows *candle* in much the same way as in Diagram 5.11, but showing linguistic attributes, not content ones. Below the attributes are other words that may grammatically provide the value of the attribute. They are taken from British National Corpusoccurrences of groups with *candle* as head. (The modifiers occurred there independently of each other; the top row of the premodifiers does not indicate that "a rather beautiful lighted birthday cake candle" actually occurred, though it certainly could have, grammatically.)

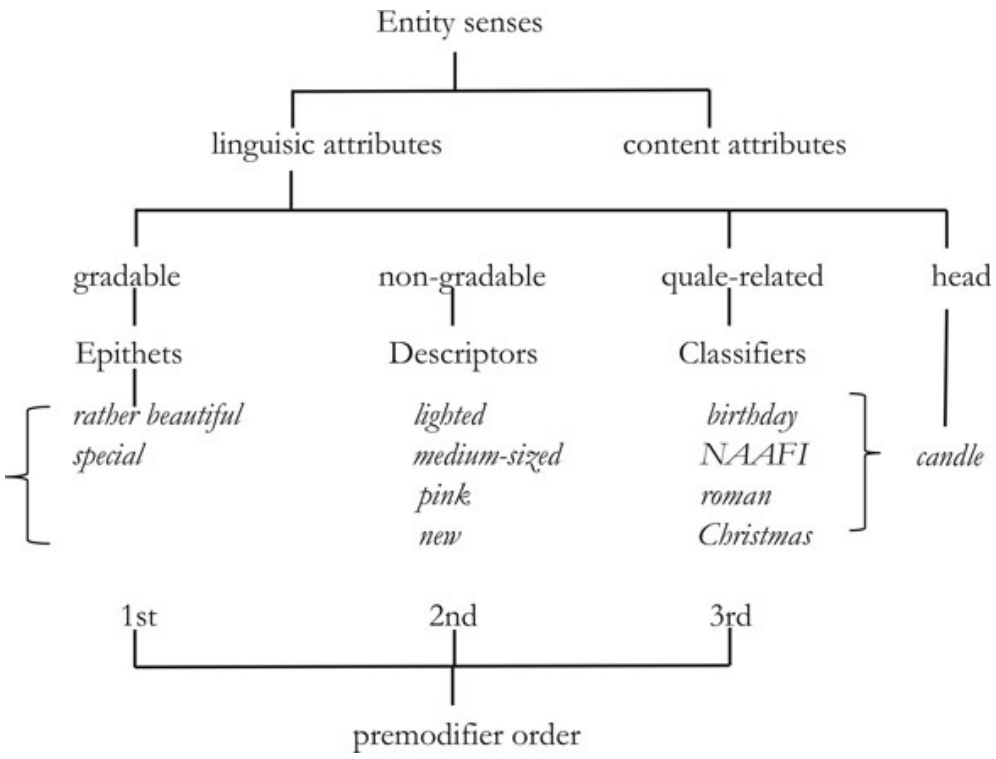


Diagram 5.12 The relation of linguistic attributes to premodifier order

There is a deeper explanation than that, however. The order is controlled fundamentally by the degree of expectedness of the attributes whose values are supplied by the premodifiers. (See Chapter 3, §1.3.1 for the dimension of expectedness.) Modifiers of a necessary attribute come closest to the head; modifiers of expected attributes come next, and so on. For example, in the phrase just studied, the Classifier *wax* comes closest because the quale attribute of Constituency (see chapter 2 §2.2.4) is necessary to the sense of *candle* as used in the phrase; it can be thought of as creating a very "strong" bond, which cannot be broken by the insertion of any other modifier between it and the head. The Descriptor *white* is one place (zone) further away, because the attribute it specifies (colour) is expected, not necessary; it creates a "weaker" bond. ("Expected" and "necessary" are being applied to the sense, not the real-world referent.) The Epithet *beautiful* is further away, because the attribute specified is merely possible; it is also a product of subjective evaluation, not of objective knowledge. Reinforcers, such as *mere* in "A mere 250,000 live television audience", are further away still, because they do not have content modifying an attribute in the head sense. (They are grammatical words, instructing the hearer to intensify

the content meaning.) I emphasise the point made incidentally just earlier, that the rating of "necessary", "expected", and so on is linguistic – specific to the sense being used in the context; it is not a cognitive rating of the qualities of the real-world substance.

With qualia modifiers in the Classifier zone (Chapter 2, §2.2.4), the principle applies in the same way. When the Classifiers denote participants in the event (or "arguments"), the principle applies in a slightly different form. For example, consider 'Israeli arms sales', which could be uttered as "Israel [Actor Participant] sells [Process] arms [Undergoer Participant]"). Something that is sold, 'arms' here, is necessary to the concept of selling; it is placed closest to the head, *sales*. The seller (Israel here) is expected, not necessary, since it need not be brought to mind in every use of *sales*; it is further away. Any circumstances of the event are placed further away still; see the following, and Feist (2012: §5.3.1 for more detail).

That explanation, through the expectedness dimension, completes the account of premodifier order given in Chapter 2, §2.2; we needed the principles of dimensionality (Chapter 4) and of bonding (this chapter) before it could be given. It also helps explain the formation of compounds: qualia bonds are so strong that the modifier + head construction is readily reanalysed as being a single complex sense. Also, we should note that it gives a precise and literal account of what lies behind the metaphor of closeness, in the iconicity school of thinking – modifiers are said to come syntactically close to the head if they are "close" in meaning.

ORDER IN GROUPS: POSTMODIFIERS

The order of post-modifying words, groups, and figures, skipped over in Chapter 2, is explained by the same principle of expectedness – when they are not in grammatically free order, controlled by the rules of rhematic order (Chapter 2, §2.3.4).

Consider "The production of O3 by this mechanism" (British National Corpus). The content of the phrase could have been formulated as a figure and expressed as, "This mechanism [actor Participant] produces [Process] O3 [Undergoer Participant]". But when it is expressed as a phrase, the reference to oxygen

(which is sub-lexically the thing produced, and therefore necessary to our conceptualisation of the event, 'producing') is placed closest to the head; the mechanism, (which is sub-lexically the actor, and further along the expectedness dimension) is placed further away. That is the unmarked order.

The post-modifying groups being discussed are syntactically subordinate to the head, but they are semantically complementary to each other (being related to each other like the elements of a Process); so another sequence is possible as a marked order. Besides, post-modification in general is subject to "end weight" in traditional terms, or "content-unit structure" in our terms. Thus, the sentence from which the last quotation came is in full: "The production of O3 by this mechanism [i.e. photolysis] becomes comparable to the production by photolysis of O2 in the SO2 cloud in July". "O2" is placed in focus after "photolysis" to contrast it with "O3" at the beginning of the sentence. The full sentence also shows us the position of other elements in post-modification. "In the SO2 cloud" and "in July" correspond to Circumstances in a figure: "Photolysis produces O3 in the SO2 cloud in July". Accordingly, they denote possible attributes, not expected or necessary ones, and follow the other postmodifiers.

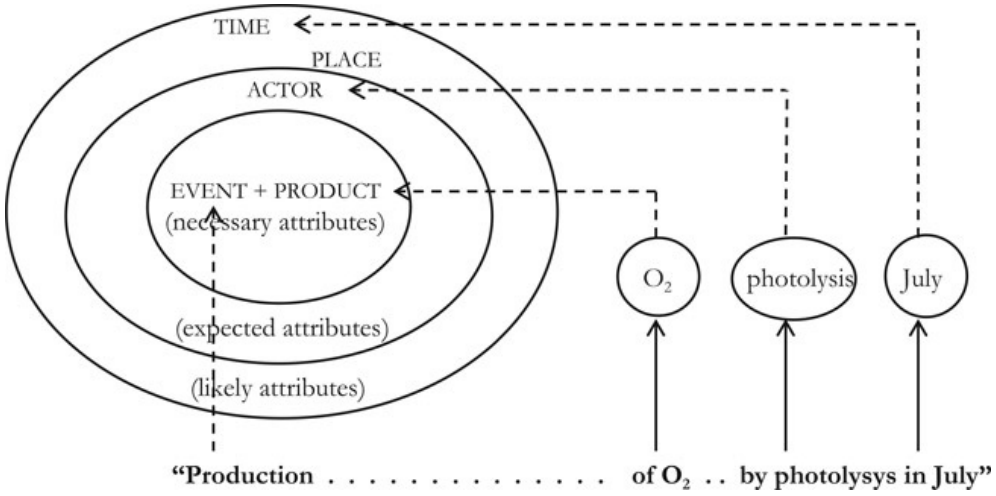


Diagram 5.13 Order of *postmodifiers*, as controlled by semantic structure

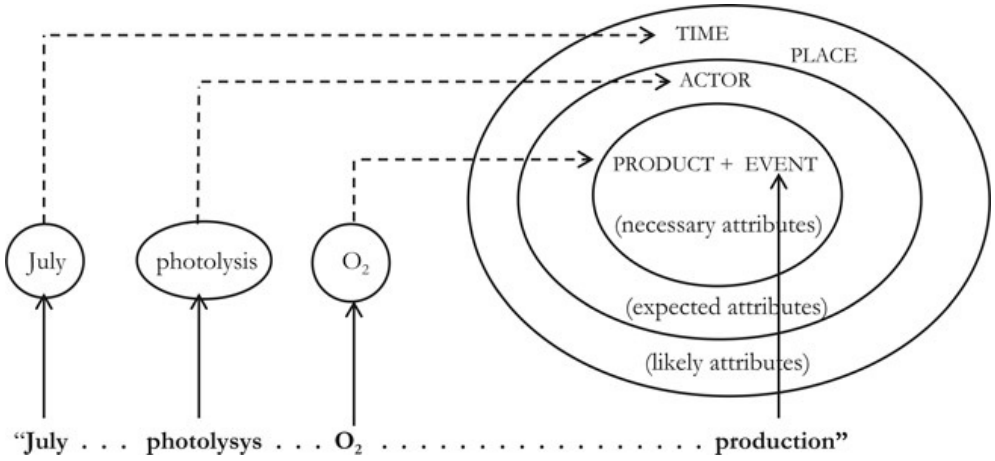


Diagram 5.14 Order of *premodifiers*, as controlled by semantic structure

The semantic nature of premodification and post-modification, and their relationship, is illustrated in Diagrams 5.13 and 5.14. Diagram 5.13 analyses "production of O2 by photolysis in July" (a slightly altered version of the phrase just discussed). It shows the complex sense of 'production', with onion-like layers representing degrees of expectedness; and it shows the simple senses 'O2', 'photolysis', and July' bonded as values of necessary, expected, and possible attributes, respectively, in 'production'; for example, 'July' is bonded to the time attribute of 'production'.

Diagram 5.14 analyses the constructed phrase, "July photolysis O2 production", which parallels the phrase "Israeli arms sales", discussed earlier. The diagram works the same way as Diagram 5.13; the two diagrams showing visually that the orders of premodification and post-modification are mirror "images" of each other, controlled by the same principle.

The reader may feel that "July photolysis O2 production" is not an acceptable English expression. The fact that it is grammatical and natural, although unusual, can be seen from Table 5.1, which shows comparable attested phrases, including "Israeli arms sales" (analysed earlier), and "July photolysis O2 production", for comparison. (The headings identify the roles that the words would take in the comparable figures.)

Table 5.1 Representative premodifier phrases

Circumstance	*Actor*	*Undergoer*	*Process*

	government	farm	buy-up
atmospheric		OH	concentration
onsite		explosives	storage
NE Pacific	deep-water		churning
	Israeli	arms	sales
July	photolysis	O2	production

ORDER AT HIGHER RANKS

We have seen that the order of simple senses (in single words) is controlled fairly strictly by grammatical rules (i.e. rules of the "grammar" of semantics), and that the order of complex senses (formulated as groups and expressed as phrases) is grammatically freer and subject to the rules of content-unit structure. The order at higher ranks is freer still, as we saw in Chapter 2. At the sentence rank, the clauses in which figures are expressed are dependent or independent, but we may reshape a dependent clause, making it independent, and vice versa. At the rank of paragraph and paratone, there is no structure of syntactic units at all – only structure of content units (Chapter 2, §2.2.4).

CONCLUSION: INTERNAL STRUCTURE CONTROLLING WORD ORDER

Control of the order of co-ordinated units has not been discussed, because they are necessarily in syntactically free order and therefore subject to content-unit structure. The discussion of the order of subordinated units has shown that the syntactic order of words and groups is controlled semantically, and that the explanation requires the concepts of bonding and internal structure, and especially that of the expectedness dimension. That reinforces the principle, noted in various places so far, that semantics explains syntax – as noted previously, syntax exists to realise meaning; and, indeed, some of what are thought to be syntactic phenomena are in fact primarily semantic ones.

2.3.8 Variation in Descriptive Sense Structure

The structure of descriptive senses varies according to the word's use – referential/descriptive and marked/unmarked. In referential use, hearers are to activate only the details that are relevant (that is, only the details that enable them to identify the referent). They act on the pragmatic principle of not wasting time, or (we might say) on the theoretical principle of minimality. Moreover, if the referent is identified successfully, it does not matter if some of the details are absent or even wrong – "Give me that thingummy" or "Give me that screwdriver" will have the correct "meaning" (i.e. will function successfully) if the only tool in sight is a chisel. Speakers sometimes restrict descriptive details deliberately, using vague or otherwise underspecified senses. In the rescue story cited in Chapter 2, §2.3.4, the narrator referred to a life raft with *something* ("You're floating around in something that's literally 5 foot square"); the vagueness was intended to dramatise the mental state of people in danger.

In marked use, however, the detail is extended; figurative use generally creates a whole additional layer of meaning. It is commonly the combination of expected/possible elements that varies, but other dimensions may vary as well. (Descriptive senses also vary according to context; that will be considered in the general discussion in §4.2.)

2.4 Structure of Nondescriptive Senses

Affective senses have very little internal structure. Whereas descriptive senses are a complex of elements, nondescriptive senses seem to be unitary (e.g. 'disapproval' as attitude, or 'resentment' as emotion). As noted previously in the sections on dimensions (in Chapter 3), the only dimension of an emotive sense is seemingly intensity, and an attitudinal meaning's only dimension is that of generality. Nor do these senses vary according to the type of use, since the distinctions of referential and descriptive, literal and figurative, and so on do not apply to them.

The structural relations among the emotive, attitudinal, and descriptive senses within a word's overall sense is a little complex. Emotive and attitudinal meaning

are linked closely, because they share evaluation; it seems that emotive senses developed from attitudinal senses, as shown in the word histories in Chapter 3, §2.5.2 and §8; and if the emotion is general and imprecise, as with dislike, then there may be no distinct difference between them, as with *horrible, awful*, and so on. The distinction between them can be characterised by saying that attitudinal meaning has evaluation, but emotive meaning has evaluation + emotion.

The relation of affective senses to the descriptive sense (if there is one in the word) is that they are linked to a particular property element, just as attitudes and emotions relate to a quality of the thing or action we like or dislike. That cognitive property may constitute the whole descriptive meaning, directly in a Property sense ("He's just stupid!"), or reified in an Entity sense ("He's a fool!"); and it may be just one element of an Entity sense (e.g. 'slovenliness' in *slut* <1>, "A woman of slovenly habits or appearance" and 'promiscuity' in *slut* <2>, "A sexually promiscuous woman"). Historically, affective senses become loosely attached to the descriptive sense, by association with the referent; they may become more strongly attached, becoming a likely or expected sense. (We saw above that *gracious* <3> is "frequently jocular or ironic".) They may eventually oust the descriptive sense (as with *nice* and *nasty*); the word would become unitary, as it was originally, but with a different meaning type.

Social senses are equally simple, having only the dimension of generality, and not being subject to variation according to referential or descriptive use, and so on. There may, however, be several social senses attached to the same word, as with *kite, prang*, and "in the *drink*", which belong to a historical period (World War II), a social group (British airmen), and a social style (informality). Social senses are quite loosely connected to the descriptive sense: they have neither a linguistic link nor a cognitive link, but are merely associated with the word. That explains why slang in particular can change very quickly.

The discussion so far – especially in the diagrams – has suggested that nondescriptive meanings occur individually on their separate planes. However, it will be clear that the social senses just discussed are closely related to each other and must be thought of as existing together on the same plane: historical period, social group, and social style; and there are relations among the different historical periods, different social groups, and so on. The different kinds of social meaning form their own network. The various emotive meanings form a network

on their plane, similarly.

2.5 Discussion: Neurolinguistic and Psycholinguistic Support for Sense Structure

NEUROLINGUISTIC STRUCTURE

There is very strong support for this account of sense structure in the work of Fortescue (2009 and 2010), building on the work of Burnod and of Pulvermüller (e.g. 1999). Fortescue describes each "word" as represented in the brain by a column in the cortex, a bundle of many neurons linked into a miniature network.

"Functional" sense elements are represented at the top of the column, i.e. near the surface of the cortex; they include abstract content elements and grammatical elements (which are necessarily abstract). The core of the column links them with sensorimotor elements near the base, which link the column to sensory perception, and (via motor nerves) to the speech organs. From the base, there are connections "downwards", into the limbic area of the brain, which is affective. Partway down the column are links to other senses (i.e. sense relations), forming a layer in the cortex, below the functional elements; and there are links for input from heard speech and output to the speech organs. I emphasise that psycholinguists and neurolinguists take for granted the connections between the cortical areas that deal with cognition and cognitive word meanings and the limbic areas of the brain, dealing with affect (Pulvermüller 1999: 261), although linguists have mostly been unaware of them, or have not taken them into account.

PSYCHOLINGUISTIC OPERATION

Barsalou (2005) gives an account of "situated conceptualisation", which complements the account of structure given earlier by showing how the neuron assemblies work. Barsalou himself does not relate his work to Pulvermüller or Fortescue; and his discussion is explicit only for concepts, but he says (2005: 625)

that it applies to memory and language as well as thought, so I have applied it to senses.

Concept formation begins with any perceptual, motor, or introspective state that recurs repeatedly. When needed again, the state is re-enacted or "simulated", as a "conceptualisation", with whatever details are needed for the occasion; the details are small subsets of the content available – never the whole content. The conceptualisations always occur with elements of relevant perceptual, motor, or internal-awareness details (such as feelings, values, and attitudes), which vary from occasion to occasion, according to the situation and the function they are to serve. They usually do not reach consciousness. "Concepts", as we define and discuss them, are abstractions from conceptualisations; they are unreal: "no general description of the category exists" (Barsalou 2005: 626). Being simply firings of neurons, they do not "represent" the real world. They are occurrences in the brain and mental processing, and incommensurable with the world.

The function of these processes, Barsalou asserts, is to facilitate our responses to experience and help prepare for future experience and action. Accordingly, the details built into the conceptualisation typically range over the following, according to the situation: percepts of people and objects; the thinker's potential action and bodily states; introspective states such as emotions and cognitive operations; and settings in which the referent occurs (Barsalou 2005: §2). The details have existing connections (neuronal links) with whatever is being simulated and with each other, in a network extending indefinitely outward. (Those details will be important in a later section, because they provide potential links to other concepts in our trains of thought.)

That psychological account fits closely with Pulvermüller's neurological work, discussed earlier, and its "cell assemblies", which I take to be equivalent to Barsalou's "simulators", which are the brain structures that produce temporary re-enactments of concepts, the "simulations", or "conceptualisations". It fits Fortescue's work similarly, with its account of cortical columns. Pulvermüller and Fortescue supply the anatomy, as it were; Barsalou supplies the physiology.

To sum up the description from Barsalou: the conceptual system produces situated conceptualisations (rather than concepts), which typically simulate four types of component: (1) perceptions of people and objects; (2) an agent's actions; (3) inner states such as emotions; (4) and the setting of the actions (2005: 627); the

conceptualisations of a concept vary according the situation of use.

Those four types of component allow for descriptive and nondescriptive meaning types, and for referential and descriptive use. The continual selection and adaptation among components fit my account of expected and possible meaning elements, and varying dimensions. Both conceptualisations and senses are dependent on context.

2.6 Conclusion: What Has Been Explained

As well as explaining the general structure of senses, this section has provided other explanation. It has given further detail about the nature of the network that meaning constitutes; in particular, it has shown how senses can be units (can apparently have boundaries) without having boundaries. It has shown how senses can be made up of elements and sub-elements, without having minimal elements or "primes". It has given further explanation of the relationship between linguistic and cognitive areas of meaning (introduced in Chapter 3, §2.4).

3 Structure Specific to Semantic Classes

3.1 Introduction

This section deals with what is specific to senses of a particular semantic class, namely their bond (e.g. the element that links a Property modifier to its Entity head), and elements that enable them to carry out their function (e.g. an Event's acting as a semantic Process and syntactic Predicator). It brings together points about semantic classes set out earlier in this chapter and develops the account given in Chapter 2, §2.2.2, by explaining the role of sense structure in building the structures studied there. For example, it will explain how the nominals that function as Participants at clause level function as Entities at group level. Note that the senses discussed are sometimes word senses and sometimes group senses: words and groups are different syntactically, but not semantically, as noted

previously; the sense ‘reddish’ maybe expressed as the word *reddish* or as the phrase *of a red colour*.

As noted in §2.2, grammatical senses are extremely simple: moreover, they do not constitute units of the message that need linking, but rather bring about the mental operation that creates the links between content senses. They therefore do not have linking elements and are not discussed further in this section.

3.2 Entities and Participants

The analysis in this section will be illustrated from the following passage, written by a newspaper columnist:

> Wright also made the point that the Government’s Predator Free 2050 goal was all very well, but it came with little detail. Some species are at serious risk right now.
>
> (From *New Zealand Herald*, 7 June 2017, p. A18)

(The phrase “the Government’s Predator Free 2050 goal” refers to a government undertaking to rid the country of predators such as stoats and rats by the year 2050; “some species” refers to birds.)

As noted previously, the sublexical elements corresponding to ‘point’, ‘goal’, ‘detail’, and so on are entities. In the mind, they have many relational links, but they are not part of a definable structure, since all of the structures they might enter into are only potential. When they are used in a group, some of those links are activated, becoming part of the meaning; for example, specification of dimensions, possessed–possessor relation, and value–attribute relation. Finally, the sense becomes determinate; for example, in the second sentence, “species are at serious risk” (with no determiner) would be unacceptable, because its sense ‘species’ is in itself only an entity, a conceptual element without reference; that is, it does not allow a hearer to know what the speaker is referring to. This amplification makes it the semantic part of a word, which has syntactic and phonological potential. It is now well enough defined linguistically to act as the head of a group, and achieve reference: it is “determinate”,[3] as an Entity. (In

earlier chapters, it was said that, crudely speaking, Entity = entity + semantic relationship. This paragraph has given a precise version of that equation.)

As an Entity, the sense is able to act as a Participant. It actually becomes one when used in a figure, which activates one of its potential bonds. "Species", for example, has its attribute of existence activated by "is", with 'at risk' as the value of that attribute. That relationship is the basis for the grammatical structure of a relational figure; 'some species' is the Carrier Participant, and 'at serious risk' is the Attribute.[4] (See Chapter 2, §2.2.2, for Carrier and Attribute.) As a Participant, it is able to act as a syntactic Subject or Complement – Subject in this sentence.

"Wright", in "Wright also made the point", is structured similarly. As a proper noun in English, it is inherently determinate, so it naturally needs no determiner. Since it has a human animate sense, it carries the semantic attribute of agency; use in a figure activates that attribute as bond, linking it to the agency inherent in the transitive Event, 'made', and to the affectedness assigned to "point" by "made". It thus becomes a Participant, serving as Actor in a mental Process.

We see, then, that the semantic structure of Entity and Participant senses includes covert elements that are necessary for the bonds within groups and within figures. (Some of the bonding, e.g. transitivity, has traditionally been thought of as purely syntactic, but it is also semantic, as we have seen before, e.g. in Chapter 4, §1.2.4.) We see again, as in Chapter 2, that the semantic structure of senses varies with their semantic and syntactic function.

In modern English, there are other forms of bonding, which go beyond that basic form. In "Predator Free 2050 goal", the first three words act as modifiers in the group, but their relations are those of a figure; they are in effect rankshifted. (The word "2050" corresponds to a Circumstance group, "by 2050"; "predator free" corresponds to another Circumstance group; thus, the goal is that 'the country will be free of predators by 2050'.)

Another marked form of bonding occurs with nominalisation. In "after last month's Manchester bombing", 'bombing' acts as an Entity, relating to the preposition "after"; but it also has an event element, since 'last month' and 'Manchester' are the time and place of the event '[to] bomb', and it could take an Agent (with a *by* … phrase). Here, a sense has in its structure an Entity element that dominates its syntactic relations; it acts as a nominal, taking modifying elements and combining with a preposition to form a Circumstance group. But it

also has an event element, which is dominant in its semantic relations with the modifying elements ('last month' and 'Manchester'). A further example, from advertising, is "massive solar sale"; the nominal "sale" has the subordinate element 'sell', taking 'solar' (i.e. solar energy equipment) as its Undergoer – as well as 'massive', as a regular premodifier.

Finally, we should note uses of Entities. They are used in different degrees of boundedness, as common nouns, mass nouns, abstract nouns, and proper nouns (Chapter 4, §1.2.3). They could be thought of as semantic classes, since they correlate with morphosyntactic behaviour, such as the use of determiners. But the degrees of boundedness apply to Participants as well as to Entities, and there are differences in boundedness within the class of common nouns in particular, as we saw in the discussion of phrases with *referee*, in Chapter 4, §1.2.3; but they have no regular morphosyntactic expression; so the senses in the series, common nouns/mass nouns, are uses rather than (sub)classes.

3.3 Events and Processes

The points to be made here can be established briefly, since they are mostly implicit in the previous section on Entities and Participants.

As sublexical elements, events are barely distinguishable from cognitive happenings; all their linguistic links are merely potential. When an event is used in a group, and made determinate in tense or aspect, some of the links are activated; it gains structure, and is an Event. For example, the event 'to run' is structureless; but "some fresh running water" has aspect, and "the water ran" has tense, so the words signify Events. The conceptual element run has been transformed into a grammatical unit, as the semantic part of the "verb" *run*. In our passage, 'to make' became *made*, and 'to be' became *are*, each with the potential to be used as a Process.

When used as Process in a figure, an Event is given bonds of complementation, as with "made" in our passage. 'Make' is here used with weak transitivity, as a mental Process, reconstrued from its basic full transitivity (as in material Processes like "He makes model trains"). The relationship with the Actor Participant makes it a Process semantically and facilitates its status as a

Predicator syntactically. Those changes transform the Event ‘make’ (as in the infinitive *to make*) into a Process such as “He makes model trains” or “He has made good time”.

By contrast, *made*, when used as a past participle and modifier in the invented phrase “the recently made point”, is also based on the event ‘(to) make’, but it has been reconstrued to modify a nominal head, and therefore as a Property. ‘Recently made’ relates to its head (‘point’) as the value of the head’s time attribute. It retains the event element within the Property, which is modified by the sense ‘recently’.

The copulas, “was” and “are” in the passage, are of course empty of content; they exist to carry the grammatical meaning that the Participants in the figure are linked by a logical relation, not by transitivity, as well as to carry tense and to thereby signify assertion. Having those grammatical meanings, and finiteness as just discussed, is the nearest they come to having internal structure. They signify Processes but are not based on Events.

We have seen that some transitive verbs, such as *make*, have a “strong” form (having strong transitivity), used in material Processes and taking an Undergoer Participant, and a “weak” form, used in mental Processes and taking a Phenomenon Participant. Increasingly in modern English, conventionally transitive verbs may be used intransitively (e.g. “Your receiver is redirecting to your computer”).[5] In all those cases, both types of transitivity are clearly provided for in the sense structure; and since both transitive and intransitive verbs in English have historically frequently gained a use of the other kind, we must conclude that potential links for both transitive and intransitive structures are present in the linguistic system for Event senses in general. Transitive and intransitive forms of a verb are two uses of the same sense; it is quite misleading now for dictionaries to present them in separate entries, because of historical change.

As to types: we have seen that Processes have material, mental, and relational types.[6] There do not seem to be any (sub)types of Event. Transitive and intransitive are now uses, not types or “classes”, for the reason just given. Finite versus non-finite makes the distinction between Event and event, not between types of Event. Copulas are included in relational Processes, since Processes are defined in part by their semantic function, and “copulas” is a functional term. As

explained earlier, they are not semantic Events (just as they do not denote real-world events), being semantically distinct in not denoting any action or change in time. Statives, and the aspectual or "Aktionsarten" types, should not be deemed classes of Event, either, since Events change in aspect according to the linguistic context, without regular change in morphosyntactic expression.[7] (See Chapter 4, §1.2.3.)

3.4 Properties and Circumstances

We come back to the passage, "Wright also made the point that the Government's Predator Free 2050 goal was all very well, but it came with little detail. Some species are at serious risk right now". In "at serious risk", *serious* seems ambivalent between being a grammatical intensifier, changing the intensity dimension of *risk*, and being a regular Property sense, with 'serious' bonding it to 'risk', as value to *risk*'s attribute of importance. (Many contemporary uses of the word suggest that *serious* is partway through a change from Epithet to Reinforcer.)

In "It came with little detail", 'little' is related to 'detail' in part by its abstract role of determiner, making the group determinate, but also by its conceptual content, SMALL, which specifies the vague concept QUANTITY, which is implicit in the mass noun 'detail'. Thus, its grammatical meaning as determiner and its conceptual content are both linking elements in its structure. The whole Entity group, "little detail", has been construed by the writer as a Property of the proposal ("it"). It has been bonded to the rest of the figure by the preposition *with*, being assigned to fill the role of accompaniment, which is frequently required by the Process 'come'. It is bonded also by the complementation structure of the figure, which assigns it the role of Circumstance.

I am not aware of any subtypes of Property or Circumstance. Some writers seem to consider that stative words constitute a class of "adjective" (= Property word), but stativity does not seem to have any regular morphosyntactic expression. Basic prepositions are Property words, in denoting position (a property of Entities), e.g. *in, under*, or denoting direction (a property of Events), e.g. *down, after*. They might seem to constitute a subclass of Properties, but they

differ syntactically rather than semantically. When they act as links (using their grammatical meaning), their Property sense is used to establish the relationship: in "the house on the hill", "on" specifies the value of the positional relation between 'the house' and 'the hill'. That is like the Property 'owns' being used to establish the relation in "Jack owns a new Ferrari", and 'exceeds' used in "Your speed exceeded the legal limit". (As noted previously, prepositions such as *of* often have a grammatical meaning only, without a Property element.) Conjunctions are much like prepositions in these respects.

We see once more that there are important elements of sense structure that are specific to particular semantic classes, and that elements essential to the bonding of senses are often covert.

3.5 Discussion: Semantic Classes

LEVEL AT WHICH SEMANTIC CLASS IS SET

Parts of speech, the classes in traditional grammar corresponding to semantic classes, have until recently been thought of as classes fixed in the grammar; words are thought to be members of a word class inherently, their membership being specified in the lexicon. That is not true of semantic classes. The class of a word's sense is set by the use to which it is being put: sublexical 'swim' becomes an Event in "She swims every day";[8] it becomes an Entity in "She goes for a swim every day"; it becomes a Property in "She wears a swim suit".[9] (In "a swim suit", "swim" has no morphosyntactic indicator of semantic class, but its semantic relation to "suit" is that of Property to Entity. "Swimming" in "the swimming sports", also relates to its head as Property to Entity, with Event as a subordinate element, from the *–ing* inflection.) As it occurs in the lexicon, as part of a "lexical entry", 'swim' is not a member of any class, since it has not been assigned to any use.

We conclude that the semantic class of a sense is set when it is used; it is not set in the speaker's mind beforehand; it is not set in the linguistic system. That is becoming an increasingly common assertion, even for parts of speech. See

Hopper and Thompson (1984), and other works cited at the end of §5.2. Croft (2007: §4.1) makes essentially the same point in a different way.

SENSES WITH NO SEMANTIC CLASS

The preceding paragraphs may suggest that all senses occur in use as a member of a semantic class. That is not so. It is not true for the senses of "interjections". That traditional term includes several things: one-word emotive ejaculations (e.g. *hey* – "expressing joy, surprise, inquiry", according to SOED); Expressive utterances (which include the original use of *hey* – a "natural exclamation", according to the SOED). To assign something to a class is to give it a place in a well-organised structure, but not all meaning is uttered in organised structures. Historically, furthermore, classes and structures take time to become well differentiated. So it is not odd that some bits of meaning do not belong in a semantic class.

As to discourse markers (or "discourse particles"), it seems more precise to treat them as belonging to pragmatic[10] classes, not semantic ones, since their use is controlled by social conventions of acceptable management of conversation, rather than by linguistic conventions. Pragmatic classes would include fillers (e.g. "um", "er"), attention-getters (e.g. "Hey, you!"), and devices for claiming a turn in the conversation.

Finally: we have noted that copulas are different from other Processes in not being based on an event. In modern English, forms of *be* are derived from Old English Event senses, but are now empty of content, having only a grammatical sense as Predicator. Copulas in such expressions as "It weighs three tonnes" and "He exceeded the speed limit" have the same grammatical meaning and some content (related to the entities 'weight' and 'excess', presumably).

SEMANTIC CLASSES AND PARTS OF SPEECH

The discussion of semantic classes and the references to other linguistic classes have provided explanation for all the semantic issues to which the theory of parts of speech is applied. Moreover, the discussion of bonding explains the relation of

semantics to syntactic structure better than conventional concept of parts of speech does.

Moreover, this account does not entail the very great difficulties of the part-of-speech theory. Being prototypes, the various parts of speech do not enable a user to determine quickly and reliably what part of speech a word is, when interpreting it or when about to use it; as prototypes, words are semantically or otherwise "verb-like" and "noun-like" and so on, to various degrees. That is because each criterion for any part of speech applies only sometimes, making a decision on its part of speech probabilistic; the probabilities are not specified in the theory, so the theory makes calculations for the decision impossible. At best, these prototype parts of speech can only exist in linguist's minds, as part of linguistic theory; they cannot function in speakers' and hearers' use of language. Since one use of a word may fit some of the criteria for different parts of speech, many uses belong (in degree) to different parts of speech at once, which is absurd, for what are meant to be categories. The concept of part of speech is incoherent, as applied to modern English semantics. (Its relation to syntax and morphology will be considered in Chapter 7, §2.5.10.)[11]

SUPPORT FOR THE SEMANTIC CLASSES

LINGUISTIC SUPPORT

The basics of my account of semantic classes are fairly close to much thinking in recent linguistics, since most work now emphasises that nouns as entity words and verbs as event words are central to grammar; and the third basic class, properties, is often not thought to be central but is not denied, either. Croft (2010), in particular, is in accordance with most of this account, including support for the classes' basis in cognition, their development by construal, and the importance of including motivation in the explanation.

NEUROLINGUISTIC SUPPORT

Kemmerer (2014) provides neurolinguistic support for the semantic classes below group level described earlier in §3.6.1. Specific areas of the brain formulate conceptual units from visual motor elements: they correspond to my "events". Similarly, other parts of the brain form conceptualisations based on shape features of objects perceived: my "entities". Adjectives are implemented similarly, but at a higher level of the brain. (Syntactic relations form separately, later.)

CROSS-LINGUISTIC SUPPORT

I cannot make any confident assertion about semantic classes in other languages. However, there is strong evidence that most scholars accept that there are semantic units equivalent to Entities, Events, and Circumstances in other languages; that is, they accept that there are nouns, verbs, and adjectives in most languages studied, and they accept a more or less notional or conceptual understanding of parts of speech, the concepts being those of ENTITY, EVENT, and PROPERTY. Further, the assertion by several writers in recent years, that certain languages set their "parts of speech" in use (not in the lexicon), suggests that the writers see in those languages the structure that I have set out for semantic classes. (See §5.2 for relevant references.)

3.6 Conclusion: Semantic Classes

3.6.1 Semantic Classes in Syntactically Organised Structures

This section summarises what has been said about semantic classes in syntactically organised semantic structures (groups and figures), with which §3 has been concerned exclusively so far. §3.6.2 will deal with semantic classes in content structures (Topic, Comment, and so on).

DEFINITIONS

CLASSES BELOW GROUP LEVEL

This following paragraph prefigures §5 below, but is provided here to give complete coverage of the semantic classes in syntagmatic structures, all in one place – and the material is implicit in previous discussion. The classes below group level are defined by their internal structure and by their relation to cognition. Thus, entities are sense elements (not whole senses) that are based on what are treated cognitively as things, and that are bounded spatially; events are sense elements that are based on what are treated cognitively as happenings and are perceptually bounded in time; properties are sense elements that are based on cognitive qualities. They are not only partially cognitive; their linguistic qualities are not fully developed. They are only partially semantic, and form sub-semantic classes.

CLASSES AT GROUP LEVEL

At group level (i.e. when we consider the group's internal nature, not its role in an utterance), Entities and Events are senses composed from sense elements (entities or events or properties) that are linked to morphological expressions and function as semantic heads, being available for modification. Entities function as heads of Participant groups (including the groups that combine with a preposition in prepositional groups). Events function as heads of Process groups (as do copulas, which are not Events). Properties are senses that are also linked to morphology and function to modify heads, either Events or Entities; thus, they are distinct from properties, as just defined.

The following are characteristic features, though not defining ones. Group-level classes are expressed as words, rather than groups or figures. Entities and Events are subject to being bounded, in either space or time,[12] and cannot be graded (see §1.5). For developmental reasons, they have some characteristics of what are treated cognitively as things or happenings but have been reconstrued (in being determinate in boundedness and gradability, and being linked to morphology). Properties are not subject to being bounded and are gradable; they retain sense elements of cognitive qualities.

CLASSES AT FIGURE LEVEL

Semantic classes at figure level are defined by their semantic function in the figure. Participants are senses that function as Actor, Undergoer, and so on in figures – and thus as syntactic Subjects or Complements. Typically, they are expressed as groups (but sometimes as noun clauses), rather than as single words; they "inherit" the properties of Entities, from which they have developed historically.

Processes are senses that function to make a predication, as syntactic Predicators; they also make figures determinate as statements, questions, and so on. They include Event senses (with the extra function of predication) and copulas. (Copulas have no semantic class, because they have no content as Events do, only this grammatical meaning of predication; grammatical senses do not seem to classifiable grammatically, as noted previously.) Typically, they are expressed as groups.

Circumstances are senses that function as units complementary to the Participant–Process structure. They are expressed either as Property senses usually are (in "adjectival" or "adverbial" phrases), or as prepositional phrases, or as "adverbial" clauses; in all those forms, they are usually syntactic Adjuncts.

RELATION TO OTHER LINGUISTIC CLASSES

Since the other linguistic levels are distinct from semantics, we should expect them to have their own classes. Morphology should presumably posit inflectional classes: for example, words inflecting in the *–ing*/*–ed* etc. paradigm, and the *–er*/*–est* comparison paradigm. We should expect syntax to have classes for "word order" (i.e. order of constituent units) and the relationships that they realise, such as modifier/head in groups, and Subject/Predicator/Complement/Adjunct in clauses. Phonology would have sound-structure classes, such as types of metrical foot, types of syllable, and types of tone.

In Old English, there was a direct connection between semantic classes and the other classes, with the consequence that there was good justification for the concept of parts of speech. Words with Entity senses regularly inflected

(morphologically) for plurality and possession, and functioned (syntactically) only as Subject or Complement (except for genitives); so they could validly be classified as "nouns". Event words were "verbs", and Property words were "adjectives", similarly. Those formerly tight connections among semantics, morphology, and syntax are now so loose that speakers can break them almost at will, using what are usually Entity words, for example, as modifiers and even as Predicators. Further, words can be used with no determinate "part of speech" – as in "swim suit" cited earlier and the headline "Remand on high school stab charge". "Part of speech" was a valid category for English in Old English times, but is so no longer.

TABULAR SUMMARY

Table 5.2 summarises classes in syntactically organised structures, and below them.

Table 5.2 Subsemantic and semantic classes in syntactic structures

Classes of word sense element	**entity**: a sense element based on a (cognitive) object.	**event**: a sense element based on a (cognitive) happening.	**property**: a sense element based on a (cognitive) quality.
Classes of word sense	**Entity**: a sense that functions as head of a Participant group.	**Event**: a sense that functions as head of a Process group.	**Property**: a sense that functions to modify the head of a Participant or Process group.
Classes of group sense:	**Participant**: a sense that functions as a Participant, e.g. Actor, Undergoer.	**Process**: a sense that functions to make a predication (complementing it).	**Circumstance**: a sense that Complements a Participant- Process structure.

3.6.2 Semantic Classes in Content Structures

Classes of content-structure, or "information", were set out in Chapter 2, §2.3.5 (although, as suggested there, it is better to think of them as functions than as classes). They are substructures of information structure – structure of "raw" content, not of the content as construed in groups and figures. They form paradigms of complementary pairs: Topic and Comment, Theme and Remainder, Focus and subordinate items (in Rhematic structure). Halliday (2004) gives subclasses of Theme, namely topical, textual, and interpersonal; but the distinctions are in effect cognitive, not linguistic.

The "information" is content of any sort, not just propositional content, and not only descriptive meaning. Nor is it to be equated with cognition: the structures are signalled linguistically and consequently are linguistic structures, not cognitive ones. As noted previously (Chapter 2, §2.3.5), information structure is not (yet) fully developed in English; sometimes, what seems intended as an element of it is not marked linguistically, and utterances are often ambivalent as to these class structures.

These classes are outlined in Table 5.3.

Table 5.3 semantic classes, in content structures

Relevance structure:	*Topic:* what an information unit is about.	*Comment:* what is said about a Topic.
Orientation structure:	*Theme:* what orients the hearer to the information being presented.	*Remainder:* the body of the information.
Salience structure:	*Rhematic units:* the items into which the information is divided, including a focus, the unit of greatest importance for speaker and hearer.	

3.6.3 What Has Been Explained

Along with sense structure specific to semantic classes, several topics recurrent in the book have been explained further. Explanation of the concept of bond, introduced in Chapter 2, has been completed. We have seen in sense structure the basis for the functioning of senses within syntactic structures; for example, in

seeing what makes a word sense the head of a group sense, we have seen the basis for group structure and figure structure, and thus the basis for syntactic structure. Finally, we have taken another step in the slowly developing argument for the rejection of the standard concept of "word classes" or "parts of speech", and for the acceptance of semantic classes as the nearest equivalent. (Semantic classes do not replace parts of speech in this theory; and the fundamental concept of word classes as at once semantic and morphosyntactic is rejected.)

3.6.4 Principles Illustrated

The semantic classes illustrate quite strikingly the principles of construal and systematicity. The perceptual cognitive classes of objects and happenings have historically been construed into sublexical classes and reconstrued repeatedly for the upper levels of language. Participants, developed from objects, are defined by their role in a figure and so are rather removed from cognition; Processes, which include semantically empty copulas, are disconnected from cognitive happenings, from which they evolved.

All of that has evolved to increase the expressive power of language, first in the ideational function of embodying cognitive information and second in the interpersonal functions of predicating, and making assertions, asking questions, and so on (which are functions of Predicators, which embody Processes).

The evolution of semantic classes just referred to illustrates again the principle of development. The classes also illustrate once more the principle of functionality, since function is part of their definition. By contrast, they do not (in English) conform thoroughly to the principle of semiosis: they do not always have distinctive signs, since in the last several centuries the language has evolved away from the state in which they were signalled reasonably by inflections (e.g. for plural, tense, and aspect), and no other simple sign has evolved for them.

4 Discussion: Internal Structure of Senses

4.1 Compositionality of Senses

Group senses are composed by the hearer, from the word senses making up the group, just as the syntactic phrase is composed from the words; the hearer uses grammatical senses to combine, adjust, and structure the content senses. (See Chapter 2 for structures, Chapter 3, §7, for grammatical meaning, and Chapter 3, §7.5.3, for the compositionality of group senses.)

The compositionality of word senses (sometimes referred to as "decomposition") is quite different from that. For the hearer, the whole meaning of the word (the dictionary meaning) must be "decomposed", since much meaning is eliminated (potential senses and sense elements, that is). For example, on reading Shakespeare's "Go; [get] fresh horses. And gracious [be] the issue!", we must eliminate senses <1> to <6> and <8> of *gracious*, and then from <7> ("Happy, fortunate, prosperous") eliminate 'happy' and 'fortunate', selecting 'prosperous' as the meaning; we have eliminated 16 of the 17 subsenses, and two of the three sense elements within that last subsense, to find what Shakespeare intended.

In the traditional sense of "decomposition", however, descriptive meanings can be decomposed, according to the kinds of bonding set out earlier in §2.3. Senses consisting of a descriptive sense and an affective one are often compositional, however. For example, Jonathan Swift once wrote in a letter, "When I am fixed anywhere … I may be so gracious to [sic] let you know".[13] We must select the descriptive sense of <3>, "beneficent to inferiors", and add ironic humour as an affective sense.

4.2 How Context Affects Meaning

INTRODUCTION

The preceding sections have referred here and there to the effect of context on meaning – which is a prime example of the situatedness principle in language, since the meaning of a word is sometimes not what any dictionary specifies it is, but what the context requires it to be.

The relevance of context is shown more vividly by the following personal anecdote. I was working in my garden when I heard a child say boldly, "Hello, mister gardener!" The voice came from a girl surprisingly high up in a neighbour's tree, with a couple of friends. I took her intention to be drawing attention to herself, with an implicit message, 'Look at me, and admire how high up I am!' I took it also that she had a message to her friends: 'Note my boldness and initiative in calling out to that man we don't know!' The meaning (speaker and hearer meaning) was very different from the system meaning. This section will set out such effects of context on meaning more systematically.

Firth (1957: 182) sets out the "context of situation" as including (1) "the relevant features of participants" (e.g. the age and sex of the child mentioned earlier, and my age and my being unknown to her), including in particular their "verbal action" and "non-verbal action" (e.g. her companions' silence, and my working with my back to her); (2) the relevant objects (e.g. the tree); and (3) the effect of the verbal action (e.g. my stopping work and switching my attention). Leech (1981: 66–67) says the effect of context is "narrowing down": (1) eliminating polysemy and ambiguity; (2) indicating the referent; and (3) supplying unstated information.

TYPES OF CONTEXT

Cruse's outline of social meaning (2011, discussed in Chapter 3, §6.1) approximates a categorisation of context types, with dialect and register as the main ones. Becker (1993: 66) gives a fuller discussion, in another analysis, which has a couple of thought-provoking additions. He lists six context types, which cover most of the types usually discussed (the exception being context of speech situation). The list is taken here simply as useful; I do not believe it is possible to construct a definitive list, or a coherent classification. The types will be illustrated chiefly from the passage used earlier, in §3.2, and repeated here:

> Wright also made the point that the government's Predator Free 2050 goal was all very well, but it came with little detail. Some species are at serious risk right now.

- Context (1), surrounding text, provides the content for "made the point", guiding the reader to selecting sense <17b> for point ("significant part of a … discourse"), not any of the 59 other subsenses. "Europe's oldest country", from a different news report, gained identification of the country quite straightforwardly from the preceding clause, "two in five Germans will be over 60 by 2050"; but "oldest" gained a non-standard meaning from "over 60 by 2050" – "oldest country" meant 'country with the oldest inhabitants', not 'country which has existed for longest'.
- Context (2) includes the "language act" – "someone is languaging to someone, somewhere, sometime" (Becker 1993: 66). The predator free goal was relevant at the time our passage was written, so the word *come* should semantically have been rendered as "comes", present tense; but the language act was that of reporting speech, so grammar required it to be rendered as "came".
- Context (3), evoked memories of texts and of personal experience, was called on at the end of the article quoted from: "[Birds are] not obsessed with, or even aware of the notes. Just the song". The writer clearly had her own memories of birdsong in mind and intended readers to invoke their own memories.
- Context (4), the world outside language, clarifies the rather obscure phrase "the Government's Predator Free 2050 goal". Readers were expected to grasp the reference to ridding the country of rats, stoats etc. from their knowledge of current politics.
- Context (5) is the medium – the medium in which the message is composed (a human brain, to Becker) and the medium of expression (sound waves in the air, or ink on paper). For example, the end of the article switches from the conventionally accepted style for writing in English to speech style, using an incomplete sentence ("Just the song"). The reader should take it as a switch from fairly formal and almost official discussion of a social issue to expression of the writer's own feeling.
- Context (6), "silence", is Becker's final type of context; that is, "the unsaid … and the unsayable" (1993: 66) – linguistically unsayable, not socially unsayable. "Just the song" leaves unsaid the beauty of the birds' song and

its importance to writer and reader. “Some species are at serious risk right now” leaves unsaid the ecological and social importance of preserving native species.

ILLUSTRATION FROM A TEXT

The types of context can usefully be illustrated by applying them to a fuller text, of a quite different type: John Betjeman’s poem, *Station Syren* [sic].[14] It describes a young woman sitting reading at an Air Force station; she is evidently waiting for someone. It is heavily dependent on context for its full meaning, as follows.

- The second stanza describes the young woman as having a “well-knit torso”. That is effective enough in itself, but the previous stanza has described her as “a beautiful panther” which is waiting to pounce. So “well-knit” in fact evokes a predator’s supple and efficient muscles and sinews, and “torso” becomes more appropriate, invoking the panther’s strong physique. “Well-knit torso” depends on the first stanza for its full meaning – which is type 1 context, surrounding text.
- The poet’s attitude seems at first to be detached (the woman is a little distance away, and he has no involvement with her); but we sense that there is some deeper purpose beneath the description. The woman is well bred – her stockings are made of silk, and she is “an officer’s lady”. Then it becomes clear that the speaker is mocking her gently, by imitating the way she would speak: to buy ready-made clothes is to “buy off the peg” (which she evidently scorns); being petted is “that sort of thing”. The poet himself uses ironic and understated language: the woman “isn’t exactly partial” to petting. Thus, there is a deeper purpose: ironic and humorous entertainment, and social comment. That language act (context type 2) transforms what is a superficially just a physical description of a woman.
- Evoked memories (context type 3) are needed for the full effect of the imagery of a panther, and for imagining “each big strong leg”, curled round beneath her, and clad in silk.
- The poem is heavily dependent on the reader’s knowledge of the world outside language (type 4), however. We should know about the following,

which are all referred to: Warwick Deeping (a popular novelist); Southgate (a modern and well-to-do suburb of London); the high social status of the Air Force in Britain, and the vast social superiority of air vice-marshals over flight-lieutenants. (It is an air vice-marshal who is the panther's prey.)

- The medium of expression (context type 5) is delicately ambivalent. At the beginning, the poem is formal, literary writing. However, the poem gradually turns into somewhat upper-class conversational speech. That comes about from several things: the upper-class tone (illustrated earlier, for context type 2), the colloquial syntax (e.g. a number of clauses have no Subject or Predicate), the polite diction, the ironic humour, and understatement. The whole piece sounds rather like a chat; nevertheless, it remains poetic, and the reader must respond to the tight and continuous rhyme and the light rhythm, which conflict with the almost sarcastic description: the deftness with which it is done creates humour and aesthetic pleasure.
- The poem has a message – the poet's scorn for snobbery and social pretension – but it is unsaid (context type 6). That is the poet's choice; but it occurs also because such cutting social comments are, for the poet's well-bred persona, unsayable.

Becker's six types may well not exhaust all the ways in which context can influence meaning, but they should clarify what is intended by the references to dependence on context in the earlier parts of the book. The variation with context we have seen in this section emphasises the centrality of function, in meaning: in determining the meaning of an utterance, we are constantly allowing for the function the speaker intends the utterance to serve.

TYPES OF VARIATION

The preceding analysis indicates what varies with context. A word may vary among its "polysemous senses" by the selection of the elements within its descriptive meaning; and their dimensions may shift along their scale ("isn't exactly partial" is understated). There is variation in whether emotive or

attitudinal meanings associated with the descriptive sense are in fact invoked ("tweed" and "officer's lady"). Senses often vary in a regular pattern, according to their use – between referential and descriptive meanings ("jaguar"), and between literal and figurative meanings ("well-knit"). Finally, the context shifts the text as a whole out of the realm of cognitive meaning, into linguistic meaning: there are no propositions and no truth values in the sentences.

If we think of the sense as the whole of a dictionary-type sense, then the variation is usually a narrowing down, by eliminating irrelevant polysemous and associative elements of the sorts just noted. (See Leech 1981: 66–67, for example.) But the sense may be enriched, of course, as by metaphor.

SUPPORT

Neurolinguistic research shows how contextual variation operates in the brain. The depth of lexical processing varies: the extent of activation of the sense's possible elements varies with the strength of the stimulus (Frisson and Pickering 2016: 508); elements that are not used in constructing the contextual meaning of a phrase sometimes remain briefly available for use later in the text. Similarly, if the elements activated at first do not provide a credible sense, feedback can activate other sense elements. Neurolinguistic processing also allows for suppression of irrelevant elements and enhancement of important ones (Gernsbacher and Faust 1991), since it includes inhibition, and activation is proportional to the strength of the input.

Structure on the expectedness dimension (Chapter 3, §1.3.1) also helps explain this variation. Activation of the sense spreads outward from the central, expected elements, to less and less likely elements, until a credible sense is achieved. Variation in context normally consists of element selection; presumably, it is only when selection fails that this activation of new elements begins, as with "Europe's oldest country" from earlier.

4.3 Realisation of Senses

In this chapter on senses, very little has been said directly about the realisation of

senses. That is mainly because it was fairly fully treated in Chapter 2, §5; in explaining the realisation of structures, that section set out the realisation of the senses that constitute structures. Section 1 of this chapter repeated the important point that senses are realised in not only morphemes and words, but also syntactic structures and phonological signs. Chapter 4, §2, pointed out that realisation of senses entails not only the words or other signs, but also their use. Emotive and attitudinal senses, for example, are often realised through ironic or metaphorical use; Expressive meaning is often realised through phonic use (Chapter 4, §2.3.4). We can control the extent to which a word's minor sense elements are realised by referential use of the word. We should also remember that it is not simply unitary senses that we realise in using language and not only "meaning" of dictionary-type senses; we realise significance and (more widely still) intentions. Only sometimes do we "encode" or "map" a sharply distinct unit of meaning.

Cross-linguistically, realisation through lexis, syntax, and phonology seems universal. However, analytic languages use morphology much less than English, or possibly not at all; and polysynthetic languages use it more. Languages that do not use groups (utterances/clauses being constituted of words) use syntax less.

5 Structure of Sublexical Elements

5.1 Introduction

This section deals with the simplest and most basic units invoked by meaning – occurring below the level of both the senses and subsenses of words, described in previous sections, and taken to be below what we should regard as "linguistic".

They are almost entirely descriptive. The exceptions are pointer elements; those are either the central nodes that direct the hearer's mind to the descriptive linguistic elements of the sense; or they are the substance of deictic senses (pointing to something in the linguistic context, e.g. *which, the*, or in the physical situation e.g. *there*); or else (I presume) they point to cognition. No affective or social elements are discussed here, because those types of meaning do not seem

to have elements; their linguistic signs (e.g. words, groups, and intonation patterns) are connected directly to the affective and social faculties, when we hear the utterance.

The existence of these elements is hypothetical, since by definition they are not expressed directly and unchanged in words; and we have no other way of perceiving them, because they are below consciousness. However, we must presume they exist, to explain why words appear in different forms and why the various sense relations exist among word senses. We must not presume, however, that they correspond to words or even senses. Consider the expression of the English meaning 'fetch' (as in "fetch some firewood") in the Kalam language, as described by Newman (2004: 204–205). 'Fetch firewood' is expressed by a serial verb glossed as "go wood hit smash get come put"; Newman analyses that as the actor's movement ("go"), + the affected object ("wood"), + the pivotal act ("hit" + "smash"), + movement, + outcome. Reflection on English *fetch* shows that there are comparable elements in what the action entails; that suggests that there may well be comparable sublexical elements in the linguistic meaning of *fetch* – but we have no direct way of knowing whether that is so. (A complex array of synonyms might indicate a possible answer, indirectly.) Consequently, the following discussion is tentative.

I have previously referred to these descriptive elements as occupying an "overlap area", between linguistic and cognitive meaning. That is imprecise, since it is metaphorical; it is probably better to say simply that they are used by both cognitive and linguistic activities. That fits the neurolinguistic evidence that semantic processing activates widely separated parts of the brain (not just Broca's area and Wernicke's area), some of which are primarily not linguistic, having sensory and even motor functions.

The discussion to follow is based on Barsalou's description of conceptualisations as the basic unit of cognitive processing; see §2.5 earlier.

5.2 Characteristics of Sublexical Elements

INTRODUCTION

The first part of this section completes the treatment of semantic classes. Chapter 2, §2.2.2.4, set out classes of groups at figure level; section 3 of this chapter set out classes of word senses at group level; this section sets out classes of sublexical elements. The section then treats those elements' dimensions and their relationships.

SEMANTIC CLASSES

In common with many scholars, I presume that subsense elements have a cognitive basis. Studies of child development show that in the first few months of life, children learn to identify objects, distinguished first by having an outline in space and by their movement against a background; see for example Karmiloff and Karmiloff-Smith (2001: 63). As children begin to understand language, they construe cognition into language, to fit what they have been hearing, beginning at the sublexical level. The cognitive class of mental objects is gradually extended to include things like water and bread, which have no outline but are extended in space, and eventually to include abstractions. Those mental objects are construed into "entities". I hypothesise that they are used by cognition, as well as by language. They can be reconstrued into the subclasses of Entity, noted in §3 of this chapter. (Some Entities, such as negative things like a gap, are presumably constructed, rather than based on perception, and some Events and Properties likewise.)

In a similar way, movements and changes in time are perceived as bare happenings, which are construed at the sublexical level as events, and then reconstrued linguistically as Events. Percepts that do not fit into either object or happening classes – those that are not delimited in either space or time – are conceptualised as qualities (of objects or happenings); they are developed progressively into sublexical properties, linguistic Properties, and Circumstances.

This account of the three sublexical classes is supported neurolinguistically by Hurford (2003). He shows that the dorsal "stream" of the brain delivers awareness of objects and their location, and that the ventral stream gives awareness of happenings. The streams then provide more deliberate processing of objects and happenings, delivering properties for them. (The streams are major bundles of

neurons effectively surrounding the brain and feeding many of its functions.) To emphasise the reality and importance of qualities (and their derivatives, properties), I cite further neurolinguistic support. Martin (2007) gives neuroimaging evidence that basic knowledge of perceptual things ("objects", to Martin) is not stored as things, but as their qualities, with the things emerging from the qualities in use.

As already noted, the three subsemantic classes – entities, events, and properties – are derivationally cognitive. They are linguistic only to the extent that they have weak (merely potential) links to the corresponding classes at group level; nor are they fully determinate, since the bounding is not fully specific (as it is for count-noun senses, mass noun senses, and proper names, for example), and their gradability is not determinate, for example.

These subsemantic elements constitute the first stage of development on the linguistic dominance scale described by Gentner and Boroditsky (2001; see Chapter 3, §2.5). Croft (2007), giving what are essentially the same three classes, summarises these developments in the title, "The origins of grammar in the verbalisation of experience".

RELATION TO SENSES

These sublexical elements combine into senses. It seems possible that a single element may constitute a sense, but there must usually be a considerable number of them. They may be used as nodes or links. For example, the conceptual element cause (which is very likely complex) can be lexicalised as a node (as a syllable such as *–ise*, or as a whole sense in *cause* or *make*), or as a link within a sense (in *kill*, if that means 'act–cause–death') or as a covert link in a figure (as an element of the transitivity relation, for example).

Sublexical elements are not only combined, but also frequently reconstrued. As noted earlier, entities are reconstrued as Entities, gaining the count/mass distinction, for example. Presumably, the same set of sublexical elements underlies *loaf* and *bread* in most uses; *onion* and *garlic* must have similarly structured sublexical elements, but *onion* is construed as a count-noun and *garlic* as a mass noun (see the interesting discussion in Wierzbicka 1985b). cause may be

realised as either an Event or an Entity as *cause*, or a Property as causative. It may become part of *causation*; it may become a subordinate element in complex sense, as in *result* and *effect*.

DIMENSIONS

We have seen previously that senses become progressively more determinate as they are assigned roles in words, groups, and figures. It follows that sense dimensions are very weakly defined at this level.

In particular, sublexical elements are not conceptually bounded. Beneath individuated 'Bill Jones', bounded 'a man', and largely unbounded 'mankind' must lie something completely lacking conceptual individuation, represented here as the conceptual element man. There must be an unbounded wine beneath generic 'wine' and specific 'wines'. The Event and Entity uses of 'flash' must have the same undifferentiated underlying element; so must the Entity 'dirt', the Entity premodifier in "a dirt track", and the Property premodifier 'dirty'. This explains what has happened historically to *pickpocket* (a person who picks pockets) – the meaning elements have been reduced towards their basic form. It also explains uses like "stab charge" noted earlier and "the burn time of the rocket", where the underlined words are not in themselves determinate Entity and Event.

Vagueness, similarly, does not apply here. What underlies 'circle' in "a perfect circle", "standing in a circle", and "a yellow chiffon circle skirt" (British National Corpus) must be neither precise nor vague. Intensity, salience, expectedness, and point of view are more clearly inapplicable, being characteristics of utterances, not of individual senses.

RELATIONS AMONG THE ELEMENTS

The familiar sense relations such as synonymy and argument structure apply at the level of the word senses and figures, not here. The relations that do occur among these basically cognitive elements are relatively weak, because all links in the cognitive network are available for use, and relatively few can be entrenched.

The links must include the hierarchies of scientific and everyday knowledge; links to experience and abstract concepts; mere random associations; and links to other faculties, such as personal memory, the affective faculty, the will, and the perceptive and motor systems.

In one respect, it is likely that there are fewer of these elements than of words: just as English forms many thousands of words from 26 letters, so relatively few basic sense elements could form many thousand senses. For example, the senses 'near, 'close', 'distant', and 'remote' may have no more elements than distance, modified in use by various operators. For example, increasing and decreasing the distance element would produce 'close' and 'remote', just as intensification with 'very' produces the sense 'remote' from 'distant'. Negating DISTANT (which is not distinct from DISTANCE) would produce 'close'. Situating the referent would produce the deictic element in "Her son lives at a distance" (i.e. 'distant from her'). The theory of Natural Semantic Metalanguage (see, for example, Wierzbicka 1972), at one stage of its development, went so far as to reduce the number of elements in languages worldwide to 11.

On the other hand, it also seems likely that in some areas there are more sublexical elements than words. To begin with, there may well be many elements used in cognition that do not appear in senses, just as the myriad underlying perceptions do not. Further, two linguistic phenomena suggest it. First, most scholars accept that the word *kill* is not simply 'kill', but is more complex, being at least 'cause to die'. Second, serial verbs suggest more extensive sublexical complexity. 'Fetch', cited earlier, illustrated that. Becker (1993: 78) cites a serial verb in literary Burmese, roughly equivalent to *compile*, which is glossed as "collect – arrange – compare – write – set down – edit – amend". Crowley (2002) gives more examples. We are led towards the conclusion that we simply do not know how many sublexical elements our words contain, and accordingly that we have very little understanding of their nature.

Combining the sublexical elements must be a little like Wierzbicka's scheme (1972) combining "primes", just referred to; but such elements do not correlate with words one to one, as Wierzbicka assumes they do, and we have seen (§2.3.3) that primes are not linguistic but cognitive (or affective, if we go beyond descriptive senses).

SUPPORT

There is now a good deal of linguistic support for this account. Bierwisch and Schreuder (1992: 24) give general support. Support specifically for sublexical forms being not bound to morphological forms and syntactic functions comes from Hopper and Thompson (1984), Mosel and Hovdhaugen (1992: 73), Hengeveld and others (2004), Haspelmath (2007), Lehmann (2008), and Štekauer and others (2012), on various languages. Miller (2014) gives support from a generative grammar approach. (Linguists who have analysed meaning as consisting of "features" appear to be supportive, except that features are simply listed items, where these sublexical elements are related, in a network.)

Mel'čuk appears to give specific support, with his concept of "semantic quarks" (2012: 183–184). They are semantic elements that have no lexical realisation; examples are 'actionality', 'stativity', 'performativity', and 'terminality'. However, they seem to be dimensions of meaning rather than elements, and to be purely cognitive, not potentially linguistic.

There is psycholinguistic support in Pulvermüller (1999: 275), evidence from priming studies in Pickering and Branigan (1998), and the neurolinguistic work by Hurford (2003), cited earlier.

5.3 Conclusion: Structure Among Sublexical Elements

SPECIFIC CONCLUSIONS

We conclude that sublexical semantic elements, at the "bottom" of the semantic scale, are dimensionless, and that their relationships and functions are only potential, not actual. It is easy to think of them as "reduced", or as essentially parts of something larger; but it is more accurate to see them as not yet developed – developed by specification and combination into fully linguistic senses. Sublexical elements are thus like geometric points, which have no reality until they are linked, as when three points are linked to form a triangle. To change the analogy, they are nodes that become substantial only when linked, creating a sense network.

WHAT IS EXPLAINED

This account of elements below senses helps to explain several things. It shows that there is (or was) some validity in the traditional presumption that nouns name things and verbs name happenings. The origin of events in perceived happenings shows why the class does not include copulas or states. (Copulas are grammaticalised forms functioning in figures, without a direct correlate at the lower levels; states are not only not eventive, but not sufficiently grammaticalised to constitute a semantic class.)

The account integrates cognition with semantics through the intermediate sublexical level, and then with syntax, as semantics becomes increasingly functional (less symbolic) at the group and figure levels. It makes nominalisation one instance of a regular pattern, not an oddity. It explains the nature of the "overlap area" by showing that its elements are neither specifically linguistic nor specifically cognitive: each of the two faculties combines the sublexical elements with its own elements and uses them in different ways, for different functions.

The account of these elements provides an explanation for the possibility of translating languages, and for its difficulty. The elements' being largely cognitive facilitates translation (on the assumption that cognition is relatively universal in mankind); and their being reconstrued when they enter language – and they are sometimes reconstrued repeatedly – hinders translation (since two words that are equivalent in their basic form may be significantly different in derived forms).

The potentially large number of elements that constitute a sense also helps explain the difficulty of finding "the right word" when we speak. That they are usually not expressible in a single word, and are below consciousness, helps explains our difficulty in understanding the difficulties.

6 Conclusion: Internal Structure of Senses

6.1 Some Conclusions Drawn

LEXICON

The idea of a lexical entry is a common-sense one, like the common-sense idea that each "word" is a unit, and it is useful to refer to "entries" in the "lexicon". However, there is no structural or functional unit in the mind and brain that corresponds to an individual "entry"; there are only separate links from our perception of a word to parts of the semantic network, and to the processing areas for morphosyntax and for phonology. Similarly, there is no unit in the mind or brain that constitutes "the lexicon"; see Elman (2009) for discussion of that (as a possibility).

FLEXIBILITY

It was noted earlier, in §3.3, that there are alternative routes through the semantic network, even to the point of providing the potential for intransitive and transitive constructions for the same Event; it was also noted that any link in a network may be activated, if its input is strong enough. We must conclude that routes through the network are not determined by rigid "black-box" categories.

It follows that "verbs" (i.e. Event senses) in the lexicon are not "subcategorised" – not fixed as transitive or intransitive, and as having a specific "argument structure". Although most Events default to use as either material, mental, or relational Processes, they can often be reconstrued into another Process type. Similarly, sublexical entity elements can often be construed into either count and mass Entities; in modern usage, they can be radically reshaped by reduction when used as premodifiers.

It follows also that schemata of semantic structure such as that of Pustejovsky (1995) are too rigid. Pustejovsky says (e.g. 1995: 61) that the lexicon has four "levels of representation", namely argument structure, event structure, qualia structure, and lexical inheritance structure. That single framework of meaning is presented as fitting all words. That is clearly useful for Pustejovsky's stated purpose of laying out a formal computational system, but not for the purpose here of describing the variety in real-life semantics.

ARGUMENT STRUCTURE FOR ENTITIES

Less significantly, we have noted that Entity senses have different types of link (for example, animate Entities have entrenched links to transitive material Processes, and abstract Entities have entrenched links to relational Processes). Consequently, we conclude that Entity senses do have "argument structure" (although, like Events' "argument structure", it is not rigidly fixed), contrary to the assertion of Van Valin and LaPolla (1997: 184).

6.2 Summary: Senses and Semantic Structure

This section brings together points from previous chapters as well as points from this chapter on the internal structure of senses, to bring together all of what is important about senses. The summary also serves as a general conclusion to the exposition of new material in the book.

SYSTEM MEANING

Sense structure, as system meaning, may be pictured by analogy as a three-dimensional spatial network, where we may focus on the link intersections as nodes – or on the "links" themselves, which (as foci) may then be conceptualised as nodes. For a word sense of the descriptive kind, we should first think of it as a node, with long-distance lines in various directions to other word senses. But we should also think of it as a miniature network of short-distance lines, which has at its centre an access node and has as a core the definition of the sense, which is thus often like an "essence", contrasted with "accidents" beyond the core. The dimensions of meaning (Chapter 4, §1) then build up the sense network outwards. The expectedness dimension leads from the necessary elements in the core to the expected elements, and to the possible ones; the vagueness dimension leads similarly to precise elements; and the point-of-view dimension "jumps" to a contrasting neighbouring area of the network. The generality dimension extends "upwards" to what is general and "downwards" to the particular. From concrete perceptual elements, links lead to image schemas, and then to perceptions, which

are outside language (and the nearest things there are to linguistic "primes"; §2.3.3). That relation to perception provides "grounding" of the sense (Chapter 4, §1.3.2). Group senses, formed with the long-distance links, are essentially the same in structure.

Senses of the affective and social kinds have their own structure, which is much simpler. They may be thought of as existing on separate planes from descriptive meaning ("below" description, perhaps, being realised in lower parts of the brain), with relatively loose links to it. Also on separate planes, "above" basic descriptive senses, are the senses of corresponding semantic classes. Above an entity sense on the sublexical level, for example, is the corresponding Entity sense on the level of words in groups, and the Participant sense on the figure level.

Because it has links to surrounding senses, a sense is not fully distinct. However, it has its own identity and unity through the unique pattern of its elements and the strength of the links between them, and through the salience of the central elements, contrasting with the weakness of the peripheral elements. (Perhaps "peripheral" should be "lower", to indicate the "lower" level of consciousness with which they are conceptualised.) The sense in its network thus resembles a city as the hub of a transport network.

SPEAKER AND HEARER MEANING

Speaker and hearer meaning are meaning in use, varying with the context and occasion. We call up a meaning from memory for different purposes and in different contexts. We may call up 'candle' in relation to 'light' or 'wax' or 'old-fashioned': a network has no set point of entry. But when we hear a word, we first activate the access node (§2.2, and Chapter 3, §2.2.3), which begins activating the relevant content nodes. The strength of the input stimulation controls how much of the network of system meaning is activated; figurative uses, for example, need stronger activation than literal ones, and if strong enough will create a parallel plane of meaning (Chapter 4, §2.3.2). Repeated strong activation entrenches a meaning, making it more and more accessible (i.e. needing less activation); and a pattern of elements that is entrenched throughout a speech

community constitutes an established "dictionary" sense.

The hearer's pattern of activation among the sense elements is controlled primarily by the use to which the sense is being put (as signalled by the speaker). For example, referential use will reduce the detail activated (Chapter 4, §2.2); marked use will evoke details that are not established parts of the sense (Chapter 4, §2.3); and phonic use will rouse articulatory and perhaps auditory awareness of speech sounds (Chapter 4, §2.3.3). Second, the activation of the sense elements is controlled by the context (§4.2), some of which is already set, and some of whose speakers can manipulate to help achieve their intention. For example, speakers can bypass an Undergoer Participant by simply omitting the syntactic Complement, since Events have alternative links for transitive and intransitive constructions (§3.3). Any link in a network may be activated, depending on its degree of entrenchment and the strength of the input; alternatively, a link may be inhibited; those are fundamental characteristics of mental networks. In languages such as English, the network operates very flexibly (§6.1). That is a consequence of language being instantiated in the neurological network of the brain, and of the evolution of English, which has favoured an ever more expressive system.

The network of hearer meaning is completed by activation of those potential links, forming bonds that create the syntagmatic structure of groups and whole utterances – the bond between agency in the Subject of a transitive figure, for example, and the transitivity of the Predicator. In the ideational function, those bonds between content elements are activated by grammatical meaning. It directs the hearer's mind through the almost infinite potential for meaning provided by the system meaning of the language's lexicon, by "instructing" the hearer how to adjust the senses, and how to compose them, as groups and figures, into complete messages (Chapter 3, §7.5.3; also §4.1 in this chapter). The grammatical meaning then guides the hearer in evaluating the information and relating it to existing knowledge, as content-unit structure (Chapter 2, §2.3). In the interpersonal function, emotive and attitudinal meanings are activated, with or without descriptive meanings, and composed similarly.

6.3 Looking Back, and Looking Forward

We have now concluded the general exposition of the theory of semantics that the book set out to present. The substance of it began in Chapter 2, which set out semantic structure. Chapters 3, 4, and 5 have completed the exposition by presenting the units that go into make up the structure, completing the theory. The units are senses, which have been described through the descriptive categories of type, dimension, and use. Those categories were set out in Chapters 3 and 4 and have been used consistently in the description and explanation of senses in those chapters and in this chapter. The remainder of the book supplies general discussion (Chapter 6) and a conclusion (Chapter 7).

Notes

1. We may wish to allow for non-perceptual primes constructed by the mind to help in processing perceptions. They would include Kant's "categories" such as space and time.
2. That result held for only about half of their experimental subjects. Consequently, they take it to be tentative; but it suggests also that linguistic processing may vary between individuals – a possibility that seems worth investigating.
3. The word "determinate" is here a technical term, with a narrower meaning than "determinate" in general use.
4. There is a clumsy clash of terms here; "attribute" (related to "value") is Barsalou's psycholinguistic term; "Attribute" (related to "Carrier") is Halliday's semantic term.
5. Television receiver message.
6. If we followed Halliday (2004), we would add three more; I have discounted them for reasons given in Chapter 2, §2.2.3.
7. That is open to dispute, I realise; perhaps Events in English are undergoing historical change, being in the process of developing aspectual classes.
8. That is true also for a sense carried by a unit larger than a word.
9. The forms "swim suit", "swim-suit", and "swimsuit" all occur in the British National Corpus; "swimsuit" is commonest.
10. The fact that discourse markers are pragmatic, not semantic, is the reason why they are not treated fully in this book.
11. It seems to have applied quite well to Old English; see §3.6.1 in the following.

12. Typically, Entities are bounded in space, and Events are bounded in time; but abstractions are usually not bounded in either respect.

13. SOED citation.

14. *Collected Poems*, 2006, pp. 195–196. New York: Farrar, Straus & Giroux.

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6

Discussion

DOI: 10.4324/9781003259381-6

1 Semantic Change

1.1 Introduction

The purpose of this section is to support the theory given in the body of the book, by showing that the theory contributes usefully to describing and understanding semantic change. The section does not give a general theory of semantic change, which would be outside the scope of this book, since it entails other issues, such as sociolinguistic ones. The focus is on the development of senses, rather than the development of words. The section is structured by the leading explanatory ideas of the book, considering in turn how type, dimensions, and uses of language contribute to understanding semantic change.

In the past, discussions of language change generally consisted of listing and illustrating several types of change, such as generalisation and broadening, specialisation and narrowing, "pejoration" (becoming pejorative), "amelioration" (becoming approving, as the opposite of being pejorative), and change by metaphor or metonymy. Recent writers, however, generally agree that those classes are unsatisfactory, being vague and overlapping, and offering little understanding. See Fortson (2004), Riemer (2010), and Campbell (2013), for

example. I agree with those judgements and offer a better approach.

1.2 Change of Sense

1.2.1 Change of Sense by Meaning Type

DESCRIPTIVE MEANING

The distinction between concrete and abstract senses, as the main types of descriptive meaning, provides a good way of describing the main changes in descriptive meaning. Concrete senses very frequently become gradually more abstract. That was illustrated in Chapter 4, §2.3.2, where the use of *Byzantine*, which originally applied to a particular city, led to a use applying to the empire with Byzantium as its capital, then to a sense applying to qualities characteristic of the empire, and so on, until now the senses include quite abstract 'complicated' and 'inflexible'. (Each main use was retained, so that the word now has several senses.) It seems that most abstract Entity senses developed from concrete ones. The mechanism for such changes is either metaphor or association.

ATTITUDINAL MEANING

By distinguishing attitudinal meaning from descriptive meaning, we can make clear another kind of semantic change, the addition or change of attitude. It is obscured in dictionaries by being included only implicitly, in synonyms, as when Byzantine is said to mean "inflexible", whose meaning includes descriptive 'disinclined to change' and attitudinal disapproval. Similarly, "pejoration" and "amelioration" include this change implicitly.

Attitudinal change can be illustrated from the history of *capital*, some of which was given in Chapter 3, §2.1.2. As it came to mean 'Involving loss of the head or of life' (<2>), it gained unfavourable attitudinal meaning, as <2b> 'deadly', by association with enemies and then with crime and with punishment. At the same

time, a new descriptive meaning developed (‘chief’), and by different associations a favourable subsense was added (‘leading, important’, in sense <3>). Some senses have even developed both favourable and unfavourable meanings: *chuffed* ‘displeased’ and ‘pleased’.

EMOTIVE MEANING

The value of emotive meaning for explaining semantic change is like that of attitudinal meaning and has been illustrated earlier in the book. This section will simply give another example. *Awful* first had the descriptive sense, <1>, ‘causing terror or dread’; but it had developed the emotive sense, ‘appalling’, already in Old English. Again, the mechanism must have been association, with speakers associating their own feeling towards awe-inspiring objects with the word itself. That development from descriptive meaning to emotive meaning seems to be mediated by an attitudinal meaning: first comes weak affect as attitude (favourable or unfavourable), then a general feeling (of liking or disliking), and then a more specific feeling. (The modern sense with very weak feeling, ‘exceedingly bad, long etc.’, developed into uses such as “awful bad”, where the word has grammaticalised into an intensifier.) Note that emotive senses, as well as descriptive senses, change on dimensions such as vagueness and intensity.

SOCIAL MEANING

Development of dialectal use of *wicked* illustrates change in social meaning. Sense <4b> ‘excellent’, is slang (social dialect, of the young) – by irony. Regional dialect occurs with sense <4a>, ‘dauntingly skilful; … formidable’, an American use (which is also slang). Historical dialect is illustrated by <2a>, “Formerly also … malignant”, of a wound, and by <4b>, “Of bad quality; poor”, now archaic. As with other types, social meaning provides an explicit and precise way of describing such changes as “pejoration” and “amelioration”.

GRAMMATICAL MEANING

Grammaticalisation (sometimes called "grammaticisation") is usually regarded as the "bleaching" of content and the replacement of a content item with a grammatical one. That view has some validity but is inaccurate. More accurately, the process is, first, the change in meaning type. That can be illustrated from the history of *single*, outlined in Chapter 4, §2.3.3, on syntactic markedness. It can be summarised as follows. The referential use of *single*, as a Classifier in "young Nigerian single parent", became a more descriptive Descriptor use, as in "indivisible single self", and an abstract use (as Epithet) as in "simple, single toroidal winding". Finally, the use became emphatic as a Reinforcer, as in "single largest capital investment" (where "single" emphasises the uniqueness implicit in "largest"). Even the abstract descriptive meaning has been abstracted away; the whole significance of the word is now grammatical (emphasis, in this instance), without content of its own; it has become a "grammatical item".

Grammaticalisation is, second, a change of function, which occurs in two ways. The first way, illustrated by *single* just mentioned, is as follows. The function of conveying factual content changes gradually to that of expressing an attitude or feeling; that affect becomes stronger, and speakers want to emphasise it; emphasising then becomes the function, the function of conveying content having faded away. In the second process, also evident in *single*, the content meaning becomes more and more abstract, with some such sense as 'completely', 'extremely', or 'only' (as in *single*). Those senses are tantamount to reinforcement of the utterance and so are easily converted into the function of a Reinforcer. (Feist 2012: 72 illustrates the points in more detail, from *positive*.)

Using the concepts of meaning type and of function as the significance of words, we can explain simply, clearly, and precisely how a "content" item can become a "grammatical" one.

CONCLUSION: CHANGE OF SENSE BY MEANING TYPE

By showing that change of meaning is commonly a change of meaning type, this section has confirmed the value of meaning type as a category in the theory of meaning. Type of meaning also helps explain the differences in the rate at which senses change. Development of grammatical senses is very slow, usually taking

centuries, because grammatical structure is fundamental to language. Changes of social meaning, such as becoming slang and becoming technical (e.g. *mouse* and *program*), are often very quick (within a few years), because the social meaning is linked to the base of descriptive meaning by arbitrary association, with no intellectual link to it. Changes developing new descriptive and affective meanings come in between those extremes.

1.2.2 Change of Sense by Dimension

INTRODUCTION

This section sets out to demonstrate that the concept of dimension is also useful in explaining semantic change – perhaps more so than type of meaning. It will do so by dealing with the most important dimensions in turn. It assumes throughout that the changes may in principle be in either direction on each dimension; for example, senses may change from general to particular, or from particular to general.

GENERALITY

Change in generality is fairly obvious. The original sense of *cat*, namely the domestic species, spun off a more general sense, that of the cat family, including lions, tigers, and so on. Conversely, *steel* became more particular; from denoting the metal, it came to denote any of various instruments made of steel, which differentiated into specific steel instruments for striking a spark, sharpening a blade, and so on.

SALIENCE

The word *sprog* began in military slang in the 20th century, evidently with the sense 'someone new to the organisation'. SOED (2002) does not specify that, just

giving particular instances, “a new recruit, a trainee, a novice”. ‘Someone new to the organisation’ has several possible minor elements. One element, that of being in the armed services, is salient in the subsense, “a new recruit”; the element of being trained becomes salient in the subsense, “a trainee”; and the element of being inexperienced becomes salient in the subsense, “a novice”. The changes in salience have mediated the formation of the various subsenses from the basic sense, ‘someone new to the organisation’. Similar changes occurred when the word was taken up by the Navy, when being ‘young’ became salient: <2>, “A youngster; a child, a baby”.

EXPECTEDNESS

Taper first meant ‘any wax candle’ but came to mean ‘gradual diminution in width’. That seemingly extraordinary change is explicable through the concept of expectedness. The language already had the word *candle*, which remained in use for the general sense, ‘candle’. Its alternative, *taper*, became more particular, to denote candles used in churches, which were slim and round, and which were narrower at the top. ‘Gradual diminution in width’ was thus a possible element in its use, becoming more and more expected until it became a necessary element, with the development of <2>, “An object that tapers towards one end”). Finally, it became the only element in the sense, in <3> “Gradual diminution in width”.

DISCUSSION AND CONCLUSION

Change on other dimensions will be fairly clear to readers; most of them need no more than an example. Vague *brutish*, “Not possessing … reason or understanding”, was differentiated into precise ‘senseless’, ‘stupid’, ‘bestial’, ‘cruel’, ‘sensual’, and ‘passionate’. That process often occurs by association with specific referents. *Stiff*, for example, is shown by SOED as developing from <1> “Rigid” to seven specific senses, such as <2> “Of a body:”, <4> “Of semi-liquid substances:”, and <5> Of a ship:”. Change on the intensity dimension occurred with *sprog* <2>, given earlier: the youthfulness of the referent intensified from

'youngster' to 'child' to 'baby'. The weak affective meaning of *bloody* (<2b> 'unpleasant') intensified as 'deplorable', and then as still stronger 'perverse' (also <2b>).

Go changed in point of view from being "irrespective of point of departure or destination" (i.e. no point of view) to "with the point of departure prominent". Point-of-review words such as *this* and *that* presumably began as lexicalisations of gestures, subsequently differentiating into contrasting *here* and *there* etc. The direction of change in boundedness is usually towards an unbounded sense (generic *man* from particular *man*), but *water* went from unbounded mass noun to bounded count-noun *waters*.

Changes in transitivity are often more complex, with sense elements being lexicalised in a different way. For example, the original use of the verb *farm* was transitive as 'till', as in "He farms the soil for a living", with Undergoer 'the soil' lexicalised as a separate word. But *farm* verb 2 <5> is intransitive, meaning 'till the soil', with 'the soil' lexicalised as part of the verb (as in "He farms for a living"). Another type of change has been that the attribute involved in the situation has become assigned to the Actor entity, instead of to the Undergoer entity. For example, *fascinate* used to mean 'bring [something] into a state of irresistible attraction' – the Undergoer is changed into the state (of being fascinated); but modern sense <4> is 'be irresistibly attractive' – the Actor has the state (of being fascinating).

This section has shown that sense dimension is an important category for understanding semantic change.

1.2.3 Change of Sense by Use

REFERENTIAL AND DESCRIPTIVE USES

The most obvious change through change of referential/descriptive use is with proper nouns becoming descriptive words – a fairly familiar phenomenon. There are usually stages, such as one in which the speaker must explain the intended meaning, as with "a Moses company" cited previously (Chapter 4, §2.3.2). These nouns or derived adjectives may finally lose all trace of the original referential

use, as with *byzantine* (with a lowercase letter B), 'complicated'. In the reverse process, descriptive uses have sometimes become proper noun uses, as in the origin of many surnames – "John the miller" became "John Miller".

MARKED USES

The development of figurative uses from literal ones, and of new literal uses from figurative ones, is too familiar to need illustration here. Syntactically marked uses usually produce senses that are more descriptive, as with *moving*. As premodifier, it was first a Descriptor, with a simple descriptive sense (e.g. "a single moving video image"). By marked use, it developed a more complex Epithet use, with emotive meaning (e.g. "a moving 27-minute multimedia documentary"); but it also developed a Classifier use, with referential function (e.g. "a beat-up white moving van"). (These changes in zone were described in Chapter 2, §2.2.4.)

1.2.4 CONCLUSION: CHANGE OF SENSE

This section has shown that meaning types, meaning dimensions, and the use of senses as concepts in the theory presented in this book are highly explanatory for understanding semantic variation and change.

1.3 Change in Semantic Class

1.3.1 Scope and Frequency of Change in Semantic Class

To study the frequency of class change by conversion (not by derivation with morphological change), I arbitrarily chose the beginning of the G- section of SOED. Of 110 Entity senses, 22 have changed – one into another Entity, and the others evenly into Events and Properties. Of 34 Event senses, 11 changed, 9 into Entities and 2 into Properties (adjectives). Of the 26 adjectival Properties, 8 changed: 5 into Entities, 2 into other Properties (adverbs), and 1 into an Event. Of

the 6 adverbial Properties, none changed. Since conversion is the non-standard ("marked") type of class change in English (derivation being the standard type), that seems a fairly high proportion of senses changing.

For change by derivation, I used the H- section. The first 50 eligible words produced 246 Entities, 30 Events, 110 adjectival Properties, and 18 adverbial Properties – 404 other forms from the 50 words. On average, each word formed 4.9 Entities, 6 Events, 2.2 adjectives, and 4 adverbs. Only 7 words developed no derived forms. The one word *hand* produced 63 Entity senses, 10 Events, 34 Properties (adjectives and adverbs) – 107 other forms.

We must conclude that change of semantic class in English has been frequent historically, and wide-ranging in scope among the classes, and that it must be "easy", as it were. For that to happen, there must be, for most senses, well-entrenched links between the semantic class forms for the sense, which can be used quickly and are used frequently. That is natural, since senses are related in a multidimensional network.

1.3.2 Nature of Changes in Semantic Class

Change in semantic class, then, consists of the activation of new links among the sense elements and deactivation of existing ones. The links are both grammatical senses and content sense elements. For example, *habitation* as Entity forms the Property word *habitative*, "Of or pertaining to habitation"; and *habit* forms *habitually* ("With respect to habit"). The underlined wording does not express content, but is a grammatical sense guiding the hearer, equivalent to "Create a Property sense related to the base element". *Water* forms *watery* with a link such as 'characterised by'. Entities form Events similarly. *Gaiter* forms *to gaiter* ("Dress or provide with gaiters") by linking the basic entity sense to new content ('dress', 'provide'), as well as by a grammatical sense for the new syntactic function. (The choice between 'dress' and 'provide' is left for the user to make according to context.) *Water* forms *to water* with the addition of the concept of causation.

Those changes are shown graphically in Diagram 6.1, which shows the changes just discussed. The semantic classes are represented as planes, with senses. The arrows represent changes, activating sense elements given in italics.

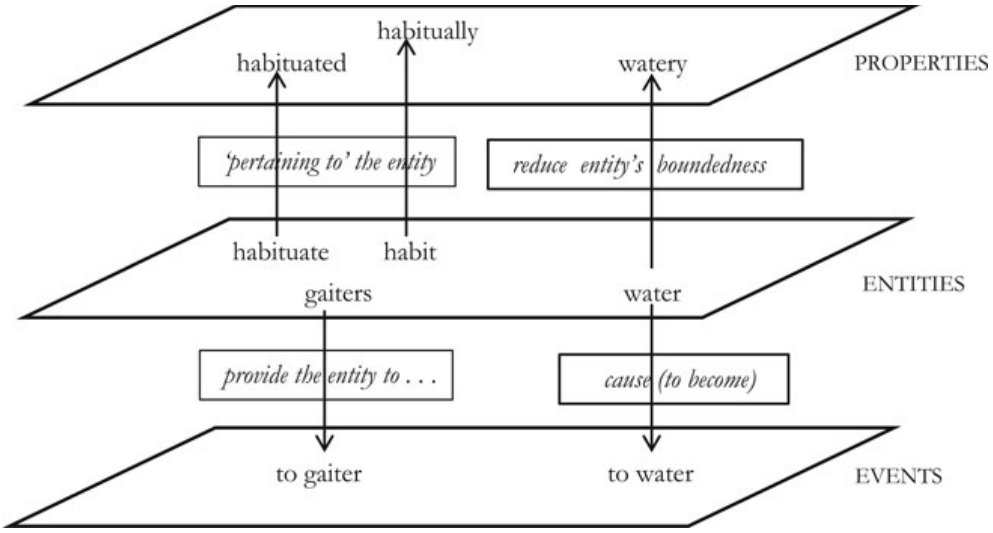


Diagram 6.1 Some changes in semantic class

When an adjective becomes an adverb, typically by the addition of *–ly*, there is no distinguishable semantic change. The Property word *habitual*, for example, signifies in context that the Property of being constantly repeated must be added to the head word; so does the Property word *habitually*. The change is syntactic, not semantic.

1.3.3 Conclusion: Change in Semantic Class

We have seen in this section that users flip easily and frequently between the semantic classes. We saw in Chapter 2 that sense elements are "promoted" to different semantic classes in the stages of realisation; for example, a sense element that is cognitively a thing normally is construed as an entity when it is semanticised, then is reconstrued as an Entity when it is fitted into a group, and is then reconstrued further as a Participant when it becomes a figure element. The semantic classes are therefore not categories in the sense of being classes whose membership is fixed, so much as roles that senses adopt in varying situations.

There is a noteworthy psycholinguistic element in these changes, as well as the narrowly linguistic changes dealt with so far. According to Pulvermüller (2010), sequence detectors, consisting of assemblies of neurons, provide linkages at the level of perception; for example, perceptions of deliberate actions are linked to

perceptions of living things, and flight-related happenings are linked to perceptions of the flying things (2010: §7). It seems natural that such close and fundamental links should provide a "pathway" for these changes in class.

In these changes of semantic class, the perceptual basis of thing, happening, or quality remains; we reconstruct the network presenting the thing 'water' as a network presenting the verb "to water". The reconstrual must have a motive, which cannot be the semantic form or the syntactic structure; it commonly lies in the content-unit structure. For example, if we want to merely mention a happening, we choose the Event form (e.g. *occur*); but if we want to talk about it, we want to make it a topic of talk, so we choose the Entity form (e.g. *occurrence*), so that it can be the linguistic Topic. If we want to lower the salience of a thing, we convert the Entity sense to a Property word (making it a premodifier): "check out moles that rouse suspicion" becomes "check out suspicious moles". Achieving economy and being vivid constitute other common motives.

The analysis above has important implications. First, for the relationships between semantics, syntax, and morphology: we have seen that choice of meaning elements and of information structure follows directly on the formulation of speech intention. Those two largely determine the choice of semantic class and thus the syntax chosen (subject to the constraints of what is acceptable in the syntax of the language, of course); the morphology follows from those two. In this respect, morphology and syntax are dependent on semantic form, and semantic form is dependent on the speaker's intention. Second, semantic form and word classes (including traditional parts of speech) are not directly dependent on our perception of the world: meaning does not reflect metaphysics.

1.4 Discussion: Semantic Change

DIFFERENTIATING VERSUS SWITCHING

The analysis in §1.2.2 used the concept of differentiation. I believe it to be much more important in understanding linguistic history than has been recognised. The general concept can be illustrated from rainbows: they differentiate the sun's

light into different colours; but changing from red to green is a switch in colour. To exaggerate a little, when a meaning differentiates, it stays the same meaning but in different forms. When *gracious* as vague <1> 'pleasing', developed into <2>, <3>, and <4>, 'pleasing' remained, since <2> is 'pleasing by courtesy', <3> is 'pleasing by indulgence', and <4> is 'pleasing by showing divine grace'. In §1.2.2, we saw differentiation in 'steel' and 'brutish', and pointing differentiating into deictic pointing with 'here' and 'there'. Switch of meaning has been illustrated in *Byzantine, wicked*, and *single* (in §1.2.1). (There are other forms of change beyond differentiating and switching, such as the addition of meaning, as with the addition of attitudinal, social, and emotive meaning.)

Beyond semantics, topic (as generic 'what you are talking about') differentiated into (information structure) Topic and (grammatical) Subject, which are two applications of the same idea, rather than two different ideas. Copulas have become differentiated from other verbs; the zones of premodification have differentiated since the beginning of modern English.

CHANGE IN THE SEMANTIC SYSTEM ITSELF

Compared with the semantic system of Old English, the system of modern English is much more complex. It is not only that particular words have added types of meaning, but that the types themselves have become more salient in the meaning of those words and have come to form an identifiable paradigm. Many Old English words had emotional colouring, but I am not aware of any pairs of synonyms that contrasted simply as affective versus neutral, or as attitudinal versus emotive. There were variations by region, and variations of styles (in a general sense) as in poetry and Latinate religious writing; but there were far fewer varieties of social meaning, and, as with the other types of meaning, it does not seem that speakers felt they had a choice of the meaning type for expressing particular meanings. Similarly, it seems that the dimensions themselves have developed, especially since the Renaissance, as growth in synonyms prompted sense differentiation by contrast in dimensions. Several of our semantic categories were probably not distinct and not part of a system. New paradigms formed, and existing ones became more salient and more regular.

1.5 Conclusion: Semantic Change

This section has described some of the well-known phenomena of semantic change by means of the key concepts developed in the previous chapters. That has been intended to support the theory of semantics given, in three main ways.

First, it demonstrates, I believe, that the theory's concepts provide a clear and precise description of the phenomena. Second, the theory offers new insight into the nature of semantic change. In particular, it explains several important aspects of how semantic changes occur: in the types and dimensions of the linguistic area of semantics, but also in the cognitive area (§1.2.1 and §1.3.3); and that they occur by means of the uses, particularly marked use (§1.2.3 and §1.3.2). It shows that they occur through the process of association, and through either differentiation, switching, or addition (§1.4). The theory also helps explain the rate of change (§1.2.1) and the relation between semantics and syntax (§1.3.4).

Finally, the section has confirmed again several of the principles developed throughout the earlier sections: the principle that language is fundamentally functional rather than representational, that it develops evolutionarily, and that the development is towards greater systematicity (§1.4).

2 Semiosis

2.1 Introduction

This section studies semiosis, as the nature of signification – the ways in which the various kinds of meaning studied in the body of the book are conveyed to hearers by signs. So far, we have considered the related process of realisation, but the approach here is the complementary one of considering it systemically and impersonally (rather than considering how it furthers the speaker's intentions) and of focusing on the signs. As in other sections, the generalisations are asserted firmly for English, but for other languages they are only tentative.

The aims of this section are as follows: to bring together and develop points made earlier, as a contribution to semiotics; to support the book's theory of

semantics by showing it has worthwhile implications for this among other areas of linguistics, and by showing that an understanding of semiotics confirms the theory.

The research reported here began by accepting basic points from the work of Peirce (1931–1958: volume 2): that some signs are "indexes" (as smoke is an index of fire; Chapter 4, §2.3.5), that some are "icons" (as maps are icons of landscape), and that some are symbols (as the word *landscape* is a symbol of landscape; see Chapter 2, §2.3.4). However, examining the phenomena of meaning forced the conclusions that those three types do not fit all expressions in language, and that we must accordingly recognise other types of sign: markers (Chapter 2, §2.3.5) and signals (Chapter 4, §2.3.3).

The next subsection (§2.2) examines a preliminary general issue. Section 2.3 discusses the types of sign and how they work. Section 2.4 relates semiotics to semantic functions, types, and strata. Discussion and a conclusion follow.

2.2 Semiotic Strategies

2.2.1 Semiotic Strategies for Identifying Referents

Three semiotic strategies have been identified previously (Chapter 3, §2.1.2 and §2.4): pointing, naming, and describing. To identify someone in the room, you can point to the person, or name him or her (e.g. "Jane Bloggs"), or describe him or her (e.g. "the woman with the big hat").

NAMING AND DESCRIBING

The difference between naming and describing has been explained through the semantic structure of such words. In the describing strategy, comprehension moves from the word form to the central meaning node (which gives access to the necessary elements), thence to the sense's descriptive elements, and thence to the hearer's knowledge, in the cognitive faculty. But in the naming strategy, comprehension moves from the central node direct to the hearer's knowledge.

(See Chapter 3, §4.2.2.4 and §4.2.2.5.) That is illustrated in the use of *pilot* and *whale* in the phrase "a pilot whale". Pilot whales are dolphins, not whales, and only the leader of the group is a pilot (i.e. leader); so the phrase "a pilot whale" cannot use the descriptive linguistic elements 'whale' and 'pilot', but takes the shortcut from the phrase form to our knowledge of dolphins. A "Jerusalem artichoke" does not come from Jerusalem and is botanically a sunflower, not an artichoke. The phrases use naming, not describing. (Words often use the two strategies at once: *steed* names a class of referent (horses) and evokes a hearer's cognitive knowledge of horses, but also evokes descriptive elements associated with the word *steed* ('powerful', 'spirited').

POINTING

"Pointing" in language, or deixis, grades off from being close to literal pointing (as with demonstratives), through words like the personal pronouns (which "point" back to previous words in the text), to tense forms (which merely "point" to the speech situation to indicate the Event's time of reference). For background, see Cruse (2011: chapter 16), for example.

Deictics, or "pointers", use access nodes as "pointer nodes" (Chapter 5, §2.2) to redirect the hearer to the intended content. But whereas naming leads us to our systematic knowledge (sometimes called "semantic memory"), and describing leads us to descriptive content in our linguistic system, pointing leads to our experience of the referent (sometimes called "episodic memory"), facilitated by an antecedent word or some other element in the context.

2.2.2 Semiotic Strategies for Describing Referents

In comprehension, we need not only identification of the referent, but often also description of it. Obviously, the descriptive strategy is effective for that, and naming is obviously ineffective. Pointing can be effective in some situations, as in pointing at green things to convey 'green'; but that is impossible for abstract description and is very inefficient at best. Nor are descriptive expressions very effective on their own; as we have seen previously (Chapter 3, §2.6.1), descriptive

content needs nondescriptive grammatical words as well. Moreover, the three strategies together do no more than serve the ideational function – referring to things, and giving factual information about them. Language in its full scope needs other strategies altogether.

2.2.3 Other Semiotic Strategies

The strategies considered so far, which all work indirectly (through words), cannot serve the Expressive function (Chapter 3, §1.3); affect must be expressed directly, in some form of action. Although we begin and end conversations with language, those processes also need active and direct strategies, like smiling. So does the phatic sharing that is the underlying goal of many conversations. Expression is a further strategy, working sometimes through a word or a phrase, by intonation, pitch, speed, and so on; they are direct, and are linguistic action.

Other strategies again are less distinct, and without linguistic forms of their own. One is evocation: arousing associated elements, mainly merely possible ones (in the expectedness dimension). Another strategy is using language as stimulus, rather than as symbolisation of content – in humour, imagination, playfulness, and teasing, for example – in the region where "meaning" shades off into "significance".

The pointing strategy is basic, close to gesture; naming is more sophisticated; describing is the most sophisticated still. These other strategies are in one sense still more refined, being ways of acting by other means – language.

2.3 Types of Sign and How They Work

2.3.1 Introduction

We have already seen some inadequacy in the usual understanding of the semiotics of language, based only on Peirce's indexes, icons, and symbols. This section will expand on that inadequacy and suggest a more satisfactory understanding of linguistic semiosis.

A first and general point is that the sign types are rather variable, being open to subclassification. A further qualification is that the types overlap somewhat, since a single sign may have elements of two types; as Nuckolls says (1999: 228), "Clear-cut types are practically non-existent". Peirce himself, as cited by Kravchenko (2007: 665), noted that there are no pure symbols.

2.3.2 Indexes

INTRODUCTION

As noted in Chapter 4, §2.3.6, indexes are phenomena that have a natural significance, by signifying their cause, as with smoke signifying fire, or a footprint signifying that someone passed that way. Paralinguistic phenomena are indexes; excitement causes us to speak fast and loudly, so speed and volume index excitement; silence in the middle of an utterance is an index of uncertainty or of intention to surprise the hearer.

PHONOLOGICAL INDEXES

Most linguistic indexes are phonological. A newspaper reported[1] that, in a boating accident, a witness in a boat nearby said the victim's screams shocked everyone into action. "The lady was screaming, 'Help, help!'". "Help, help" were symbols, but they were also screams, whose pitch, volume, and length were indexes of the woman's desperation.

Vocal utterances that are purely indexical, such as laughter and sighs, are often conventionalised as words, such as the interjections "hum", "ha-ha", "phew", and "wow". They are then only partially linguistic, since they have no syntagmatic properties; but they become fully linguistic when assigned a syntactic role (e.g. "They hummed and hawed and I could tell …"),[2] or when derivatives are formed (e.g. *yucky* as derived from "Yuck!").

This indexical function of speech sounds has in many instances been systematised and established as conventional in the speech community, i.e.

grammaticised. Expressive volume and pitch, for example, have been grammaticised into unmarked and marked stress; and rising/falling tone as an index of incomplete/complete intention has been grammaticised into the intonation contours that mark off information units. They are indexes no longer.

PHONETIC INDEXES

As well as those suprasegmental signs, there are indexical signs consisting of features within a phoneme. As we have seen in the discussion of phonic use (Chapter 4, §2.3.3, on phonological markedness), extra force in initial plosive consonants and extended length of vowels and initial consonants have their own significance; that occurs sometimes in the Expressive function, and sometimes in an aesthetic or playful function.

CONCLUSION: INDEXES

Indexes are thus the most primitive signs; that is, they occur first in evolutionary development, not being derived from other signs; they signify a whole situation, not an intellectually analysed element of it (a concept). They are not usually uttered intentionally, have no content of their own, and do not depend on a speaker–hearer relationship; since they are not intended as communication, their semiotic value is not inherent, being the speaker's response to a natural phenomenon. They are independent of other linguistic signs.

Indexical signs remind us that language is rooted in biology – they are language as natural phenomenon – and that it is functional. They highlight the importance of the Expressive function.

2.3.3 Signals

INTRODUCTION

Signals, as a type of sign, were introduced in Chapter 4, §2.3.6, to explain such signs as the lengthening of /m/ in "It must have cost millions!" They are like biological signals: they gain their significance through an evolved association of sign and significance, as flowers' colour began as an index of pollen and nectar but became a signal of food for bees; signals retain the characteristic of indexes that they signify a fact or a situation, rather than concepts.

Typical linguistic signals are uses of the "discourse marker" *oh*, with a falling intonation, in utterances like "Oh, as to that" or "Oh, I should have said". The fall indexes fading speech intention, as the speaker begins to develop a new intention; it has thus come to signal that the speaker disagrees or is about to change tack. They are thus like biological signals, acting as warnings or cues to prompt a specific response. Like indexes, they do not convey content, but unlike indexes, they need a hearer and exist to serve a function. Other examples include politeness forms, such as "Hello!", "Please", and "Your honour", and their opposite – boos and jeers. Unlike animal signals, linguistic signals are deliberate.

GENERAL DESCRIPTION OF SIGNALS

Signals often develop from indexes. For example, a baby's cries are at first instinctive reflexes, but gradually babies learn from their carers' responses that they carry significance for the carer, and that the significance varies with the situation and the type of cry. One type of cry becomes a signal of pain, another a signal of hunger, and so on. Other signals develop from a different kind of source. "May God be with you!" is a standard form for expression of thought and personal feeling (expressed in symbols); but as its sounds were elided into "goodbye", it became a formula, with a social function – a social signal of politeness.

Signals typically act independently, as interjections for example, without syntactic relation to other utterances, as the examples given so far illustrate. There is also an important degree of conventionality in linguistic signals: the examples given show that they consist of words that are standard in the language, being conventionalised and synchronically arbitrary. They are like symbols in that respect. The conventionalisation extends to the hearer's response:

just as there is a standard form of the stimulus signal, so there is often a standard response to it; "Thank you" brings "You're welcome", for example.

Hurford (2007: 178–179), studying the evolution of meaning, supports the assertion that linguistic signs include signals.

CONCLUSION: SIGNALS

From that discussion, the following definition of signals may be formulated: they are intentional signs signifying a whole situation and operating directly from the speaker to hearer, not indirectly through the message, which develops in parallel with them.

Most of the signals we have considered have been fully linguistic, as indexical signs are not, but they lack the integration into the semantics and syntax of articulate language that distinguish the signs to be studied in the following sections. Signals also illustrate the way that the scope of semantics is extended in the approach followed in this book; here, semantics studies linguistic signs and their significance, and significance includes a range of mental phenomena, not only the comprehension of concepts.

2.3.4 Icons

Icons were introduced earlier, in §2.1, by the example of maps as icons of landscape. Where indexes are signs that gain their significance through a natural association of cause and effect, and signals are signs that gain theirs by an evolved association, icons gain significance through similarity. In general semiotic thinking (e.g. Peirce 1931–1958: volume 2), the similarity may be of three kinds: either literal, as (1) an imagistic similarity as in a painting or photograph, or (2) a schematic similarity as in a map or wiring diagram, or else figurative, as in (3) a metaphor or simile. In linguistic semiotics, metaphor and simile must be seen differently, since their basic meaning is conveyed by words used symbolically, as most words are.

Linguistic iconicity is illustrated by Caesar's "I came. I saw. I conquered": the sequence of utterance is an icon of the sequence of Caesar's actions. Chapter 4,

§2.3.3, quoted a weary private detective as saying, “We surveilled, surveilled, surveilled”. The repetition of the words is an icon of the repetition of the actions. Stress could be thought of as iconic, with increased pitch and volume an icon of increased importance.

I believe that iconicity is not important in English semiotics. The examples given from phonology are from marked use; unmarked phonology may have been iconic but has become conventionalised and symbolic. The examples that would make it important, such as those of Haiman (1983: e.g. p. 781), “conceptual distance”, for example, rely on metaphor in the explanation. The “conceptual distance” example implies that modifiers closest to the head word are “closest” to it in meaning, iconically. However, closeness to the word is a matter of time (in speech) or space (in writing); but “closeness” or “distance” in meaning is a matter of logic (relevance, normally), and there is no similarity between time or space and logic; the iconicity is illusory. There is, moreover, a general reason why iconicity is not an important type of semiosis in language. Effective iconicity, as in road maps, organisation charts, and network diagrams, relies on having two or more dimensions; since speech has only one dimension (linearity), its scope for useful iconicity is sharply limited.

2.3.5 Markers

INTRODUCTION

In Chapter 2, §2.3.4, markers were introduced as a type of sign to explain the way in which final position carries meaning in English. On its own, a group’s final position in a figure suggests that it carries the focus, but hearers take it to be the focus only if it also carries the main stress, which confirms the interpretation. Position and stress together constitute the sign; each is a “marker”. Markers, then, are helpful indicators rather than robust signs that stand for a meaning reliably and one to one. Four loose classes may be distinguished; three of them consist of pairs of signs, the other having a single sign.

TYPES OF MARKER

TYPE 1: POTENTIAL + ACTUATION

In one type of marker, a linguistic form has its meaning as a marker only when its potential significance is actuated by another sign. A sequence of information items normally carries significance only as individual items, but it becomes a marker of rhematic structure when the items come at the end of a figure and conclude with the main stress. In Chapter 2, §2.3.4, we saw another instance of this dependence on other signs in the use of pronouns as markers of Topic when they form a series dependent on a full nominal phrase. Semantic clash may be simply the speaker's error; it becomes a sign (a marker) if the context implies it is intended to create a metaphor (Chapter 4, §2.3.6).

So-called sound symbolism consists semiotically of markers, not symbols. Some writers have alleged that certain sounds have become so strongly associated with certain concepts or moods as to mean them, symbolically. For example, *gl-* is said to mean 'light', as in *gleam, glitter, glow* and so on. That cannot be so, not only because there are many words with *gl-* that have no association with light, but chiefly because there are many uses of *gleam, glitter*, and *glow* that do not have any sound effect. They have such an effect (as was observed in Chapter 4, §2.3.3, on phonological markedness) only when the speaker's intention to use them in that way is confirmed by another marker. Such markers include emphatic articulation of the sound, previous sound effects, and other imaginative use of language. There is no such effect, and no such marker, in "I … found it in ruins, with the fire yet glowing".[3] However, in the line of rhymed verse describing traffic lights as dusk falls slowly, "Green, ember-red, amber, the lights glow out as the day fails",[4] the various assonances and the slow rhythm act as markers to confirm that *gl-* is a marker (along with the assonance and rhythm themselves, and the repeated vowel length). Tellingly, the effect of "glow" here comes through the length of the sounds, and the significance is of slowness and gentleness, not of light.

TYPE 2: GENERAL SIGN + SPECIFIER

In another type of marker, a sign is inherently meaningful, but the meaning is not inherently determinate until specified by another sign. We have seen, for example, that initial position in a figure always signifies importance of some kind; but whether that importance is of being Subject / Topic / Theme, or marked focus, or stylistic inversion, is specified only by some other marker in the figure. Several types of punctuation mark act as markers: commas especially need another sign to determine their significance; so do hyphens, as in "fighter-bomber", and the slash in "clock/radio". By contrast, exclamation marks and question marks are fully determinate and are symbols.

TYPE 3: MUTUALLY REINFORCING SIGNS

The third type of marker consists of grammatical signs that work together in pairs or groups, one or more of them being redundant. For example, in "They walked", both the pronoun *they* and the *–ed* inflection carry the grammatical meaning, "Make this item third person". *To* as a sign of the infinitive is also redundant, and a marker, to the extent that infinitives are infinitives without *to*, as in "He can go".

TYPE 4: OPTIONAL SIGN

The last type of marker is exemplified by articles and premodifiers as signs indicating the head: that is not their basic meaning, and they may be absent: "Ducks eat frogs" has no signs for headship; "He used concrete reinforcing" has a marker for only one of the three heads. (See Chapter 3, §7.2.1.3.) The significance of the marker is apparent, even when it is absent.

CONCLUSION: MARKERS

I have shown that some of the previously considered sign types are part of a

developmental sequence. That applies to markers as well, in the fact that pronouns and the prepositional form *to* now have an information-structure significance that they did not have a few centuries ago.

Markers are defined by their lack of independence or "autonomy", in not being essential for the speaker's intention, or in being redundant, or in being incomplete; they do not stand for a sense, one to one, as *sparrow* means SPARROW. To my knowledge, markers are not recognised in the semiotic literature as a type of sign, but their reality is sometimes acknowledged implicitly, as by Quirk and others (1985: part III, §1), for example: stress, rhythm, and intonation "help to communicate grammatical distinctions"; "help" indicates that those signs share the semiotic load with others (inflections, for example).

2.3.6 Symbols

DEFINING CHARACTERISTICS OF SYMBOLS

"Symbol" is used here very much as it is used in the tradition of Peirce (1931–1958: volume 2) and Saussure (1915). The term denotes a sign with a determinate, conventionally fixed and synchronically arbitrary meaning. "Fixed" here contrasts with "conditional"; linguistic forms of some sign types are signs only conditionally; and for others, the meaning is conditional on the context. Some word symbols are polysemous, depending on the context for the hearer's choice among the meanings, and most symbols are dependent on context for determination of possible meaning elements; but the range of possibilities is fixed, and the nature of the basic meaning of each sense is fixed. "Synchronically arbitrary" allows for a symbol to have been motivated when it was first used; "They hummed and hawed and I could tell…," (cited earlier) has a synchronically arbitrary symbol that began as an ejaculation – a signal, and motivated.

OTHER CHARACTERISTICS OF LINGUISTIC SYMBOLS

In typical symbols, the meaning is displaced; that is, it is not dependent on the

speech situation. (The exceptions are deictic symbols; see later in this chapter.) Indexes are dependent on the speaker; signals are dependent on the social situation; icons are dependent on the structure of the referent; markers are dependent on other markers. That displacement is a consequence of conventionalisation, which abstracts away from specific contexts.

Other signs work directly, as stimulus to response (signal) or as a likeness (icon), or as an indicator (marker). But symbols work indirectly, sometimes with small-scale signs (letters/phonemes and morphemes) combining into a large-scale sign that is the communicative unit. Similarly, they are distinct in that utterances need both of two complementary types of symbol, those for content and those for grammatical meaning; neither can carry out the speaker's intention on its own.

Symbols usually rely in part on a pattern of choice, such as a paradigmatic semantic field, a grammatical paradigm, or a scenario or frame. That choice also helps to define the meaning. The meaning of the present tense forms in English, for example, is affected by there being only one alternative (the non-past), whereas some other languages have several alternatives. Similarly, the significance of plural forms depends partly on whether there is only a singular form as an alternative, or a dual form (for example) as well.

Putting aside the issue of polysemy, we can say that symbols are generally isomorphic, with one distinct meaning for each distinct form. Indexes and signals may have several meanings, which may be indistinct, and there may be different indexes or signals with the same meaning. Markers carry distinct meanings, but two or more are needed to convey them. (As to polysemy, the universally accepted distinction between polysemous words and homonyms shows that we accept the polysemous word as a semiotic unit, with its range of meanings being ultimately variations on a single basic meaning.)

CONCLUSION: SYMBOLS

Symbols may well have a historical motivation: the meaning of *tawdry* came from "St Audrey's [fair]", which became notorious for cheap and shoddy goods; the meaning of "antidisestablishmentarianism" is motivated by its root and affixes. However, their synchronic arbitrariness, their thorough

conventionalisation, and their determinate and displaced meaning make them distinct as signs. To that extent, they support the view, held by some linguists, that "language is an entirely self-contained system" (DuBois 1985: 343).

2.3.7 Conclusion: Types of Sign

We have seen that (in English at least) language uses many types of sign; not all linguistic signs are symbols. We have seen also that the various types of sign form a rough scale in sophistication, that in general signs develop towards sophistication, but that in some cases they change towards simpler types. As a consequence of change, particular signs may have characteristics of different sign types at once, and a particular expression may carry two types of sign at once, as layers, just as symbolic content words may carry two types of meaning at once (e.g. descriptive and affective). For example, Mary Trump, sister of US president Donald Trump, said of him, in his last months in office: "He has no principles, none, none!"[5] "No" was stressed, the first "none" was stressed more strongly, and the second more strongly still. "None" thus became a signal (of stronger feeling), as well as a symbol of conceptual meaning.

The types of sign vary in precision, ambiguity, isomorphism, systematicity, and motivation. Presence and absence of those qualities may both be valuable, for different purposes. Symbols are used for all three semiotic strategies; and all types of sign are used for describing; but the naming strategy uses only symbolism. The semiotics of English, at least, is thus very flexible, and consequently powerful.

This section has illustrated the full range of the kinds of significance carried by English signs, and thus the scope of what is treated in this book as semantics. (The exclusion of pragmatics is based on the absence of any signs for pragmatic inferences.) If semantics is to be regarded as the study of meaning, then "meaning" should include all of those kinds of significance.

2.4 Relations of the Semiotic Strata

2.4.1 Introduction

This section moves from the semiotic strategies and types of sign to the strata in which they are embodied – lexis, morphosyntax, and so on. (Note that the strata of language are not only grammatical i.e. structural in language, but also semiotic i.e. with the function of realising meaning.) The intention is to show that, behind the detail set out so far in this section on semiosis, there are broad characteristics in the way that meaning is embodied, making a system that is basically simple but allows for the variation that gives language its richness and subtlety.

2.4.2 Relations of the Strata and the Meaning Types

MEANING TYPES AND STRATA

Two facts stand out, in the relation between meaning types and the lexical, morphosyntactic, and phonological strata. First, the lexical stratum carries all types of meaning, including grammatical meaning; it dominates the realisation of meaning, just as it dominates our awareness in reading and hearing; it is versatile and powerful. Second, grammatical meaning is embodied in all the strata: as prepositions and articles in the lexical stratum; as inflections in the morphological stratum; as constructions in the syntactic stratum (such as Predicator-Subject inversion, and head-modifier relations); and as intonation units and certain tones in the phonological stratum. That is partly because each stratum needs grammatical signs to organise its own distinctive structures, and partly because language provides parallel means of conveying meaning, for flexibility and for protection against failure. A third point, and one that we have noted before, is that realisation of descriptive meaning is almost entirely limited to lexis; the exception is the incidental inclusion of concepts such as plural and past in noun and verb inflections.

2.4.3 Relations Among the Strata

INTRODUCTION

This section discusses the strata of language, as used in English, from the point of view of speakers realising their speech intention, and drawing on Chapter 2, §5. It treats realisation as a process, imagining the speaker's intention as "moving upwards" through the strata in turn, although that is not always psychologically realistic.

SEQUENTIAL USE OF THE STRATA

The basic process that relates the strata begins with speakers formulating their intention (and any knowledge they intend to utter), and from that formulating sublexical elements (Chapter 2, §5.2, Chapter 5, §5) with the potential for embodying it (semanticisation of the intention), in the semantic stratum. Those sublexical elements are combined and structured into words (lexicalisation), in the lexical stratum. The words are combined and structured in the morphosyntactic stratum (syntacticisation). The syntactically structured words are realised in the phonological or the graphological stratum.

Semantics is represented in that account as a separate stratum, which it is often not thought to be. It is a distinct stratum because it is distinct from speakers' intentions, since the intentions may be not uttered at all, and may be expressed mathematically, or in drawings, and so on. Also, semantics is distinct from the form and meaning of the various words, since the same meaning may be realised in different words, as with the use of synonyms.

In practice, that basic process is varied in several ways. In one variation, morphology becomes a separate stratum. For example, a semantic figure may be realised as "It dates from before the Norman conquest", with 'before' realised lexically. Alternatively, it may be realised as "It predates the Norman conquest", with 'before' realised morphologically; that entails an extra step, treating morphology as a separate stratum.

In a second variant, phonetics works independently of phonology. For example, when speakers realise emphasis by lengthening the initial consonant ("M-m-marvellous!"), or by giving an initial plosive marked aspiration ("Don't be so st[h]upid!"), they use the standard phonological system of phonemes (e.g. /m-a-r-v …/), to realise the emphatic words, but then call on phonetics separately, to

realise extra emphasis (using the length or aspiration features of a phoneme – not a morpheme, or even a whole phoneme.) Phonetics then acts as a separate stratum adding meaning, not as a mechanical subsystem within the phonological stratum. Feist (2016: §14.4.10) gives more detail on the routes through the strata which meaning can take as it is realised.

USE OF THE STRATA IN PARALLEL

The spoken question "Why did you do that?" uses the three strata in parallel. Lexis is used in *why*, the question word; syntax is used in the inversion of "you did" into "did you"; standard phonology is used in the final rising tone. This parallelism is used frequently for realisation of secondary intentions. For example, in an extremely common use, we realise our primary intention (of conveying information) by using descriptive meaning on the lexical stratum, but realise a secondary intention (of expressing feeling or maintaining our relationship with the hearer) by using affective or social meaning on the phonological stratum (with the stress or intonation). See Halliday and Greaves (2008) for full discussion.

CONCLUSION: RELATIONS AMONG THE STRATA

As we have seen often before, language uses the natural resources for expression in ways that provide not only a basically straightforward method, but also variants that facilitate a wide range of communicative intentions, in accordance with the expressiveness principle; but the resources remain systematic, according to the principle of systematicity.

2.5 Discussion: Semiosis

2.5.1 Units of Meaning and Forms of Sign

It is usually thought that the morpheme is the basic unit of meaning in language. That belief has some truth, since morphemes do constitute units for signifying meaning and they are not made up of smaller meaningful units. However, it is sharply limited in value because of three false assumptions that are made.

First, by dealing only with words (which morphemes constitute), the belief assumes that only words carry meaning, whereas we have seen that syntactic and phonological forms also carry meaning. Second, in passing over those strata, it assumes that meaning consists only of concepts. We have seen repeatedly that that assumption also is false. Specifically, we have seen that in phonology, intonation units and metrical feet are units of meaning, for example, but are made up of change in pitch and stress (not of phonemes). We have seen also that phonemes and even individual features can be units of meaning (e.g. plosiveness and aspiration in phonic use, allophones in dialectal social meaning).

The third assumption is that only perceptible forms can present units of meaning. However, we have seen that the absence of a form can be a unit of meaning (e.g. absence of a Subject signifies that a command is being given), and so can the order of forms (e.g. the order of Subject and Predicator), and a grouping of forms (words in a phrase, and phrases in a clause), and the relationship of forms (dependency, complementation, and co-ordination). Again we see units of meaning that are not morphemes.

Cognitive Grammar and Construction Grammar improve on the idea that morphemes are the basic semiotic units by making forms in general ("constructions") the basic unit; for example, it is said that a form-meaning pair makes the unit of meaning (e.g. Langacker 1987). Those approaches, however, have not been helpful about the types of form and the way they carry meaning.

To put the foregoing points differently: signs occur in many different forms. The form can be a word, the order of words, a syntactic construction, a phonological unit, or absence of a word or other unit, for example.

2.5.2 Motivation and Arbitrariness

Another limited view in thinking about the semiotics of language has been an excessive emphasis on the arbitrariness of language. The view is associated with

Saussure but is much older and is widespread. "In every spoken language, the words have two fundamental properties. First, they are in temporal sequence.... [Second,] the relation between the serially ordered sequence and the word's meaning is arbitrary" (Gupta and Dell 1999: 447).

Again, the belief has some truth, but it is limited by assumptions similar to those just discussed. In assuming that linguistic signs are words, it allows for individual sounds (phonemes), which are combined arbitrarily, but not for features such as the length of consonants and sibilance (in /s/ and /z/), all of which we have seen to be expressive and fully motivated, in much use. Nor does it allow for other phonological signs discussed in the last section, such as tone, stress, and rhythm, which are also well motivated.

As recent research has shown, many syntactic signs are also motivated, by either iconicity or psychological processing, in the limitations of short-term memory, for example – especially signs consisting of order or position. There is even some motivation in lexis – in the condensation of meaning into holophrases (Chapter 2, §4.4), and in the syllabic structure of most ideophones (Chapter 2, §4.4). For some speakers and hearers at least, the historical motivation of word borrowing and etymological formation is still alive, acting as a synchronic motivation; the social meaning of recent borrowings, neologisms, literary words, and so on is sometimes a motivation for choosing the words, beyond the message the speaker wishes to convey.

There is noteworthy support for these suggestions of synchronic motivation in the literature on "competing motivations"; see for example Martin (1992: 1–2), and especially the various work in MacWhinney and others (2015).

2.5.3 Isomorphism

This section on semiotics, and the preceding chapters, have incidentally supported the widely accepted general principle of isomorphism, showing that it is valid to say that generally one semiotic sign bears one meaning. Nevertheless, there are a number of important exceptions.

The tendency towards isomorphism can be illustrated from words such as *royal* and *regal*. Etymologically, they are a single word, being variant spellings of

Latin *regalis*, from *rex/reg-*, 'king'. However, they have diverged: they share some meaning elements, and *royal* can be used for all the senses of *regal*; but *royal* is distinct, in meaning 'originating from a king' and 'of, or pertaining to, a king', whereas *regal* does not. Since they are different in form, English has assigned them a difference in meaning. Similarly, *tension* and *tenseness* are alternative nouns from the same root, but they have little overlap, since *tenseness* has a general and apparently monosemous sense (SOED does not give distinct senses for it); nevertheless, *tension* has several specific and technical senses.

We have noted previously some of the exceptions to isomorphism. For example, the derivational morphemes *–ion* and *–ness*, just mentioned, along with *–dom* and *–hood*, are four forms with a single meaning – the grammatical one, 'Treat the sense of this word as an Entity sense'. We have noted that English has lexical, syntactic, and phonological signs to signify that a figure is a question. Many punctuation marks are graphological signs equivalent to corresponding phonological signs. The converse situation of several meanings for one sign is illustrated by most words in English – that is, polysemous words.

2.6 Conclusion: Semiosis

This section has dealt with semiosis on two levels: it has noted three broad semiotic strategies and described five types of sign that they employ. Further, it has discussed the relationships among those strictly semiotic factors, semantic factors such as meaning type, and the linguistic structure through which they are realised.

The discussion leads us to several conclusions. First, the nature of linguistic semiosis supports the theory of semantics set out in the body of the book, through showing it has worthwhile implications for this other area of linguistics, and through the understanding of semiotics itself. (That was given as a goal of the section, in §2.1.)

Considering the range of signs and how they work has shown that traditional linguistics has assumed an understanding of semiotics that is seriously restricted. It has generally considered only words as signs, which is a limited view. More seriously, with the isomorphic assumption that each unit of meaning (a word or

morpheme) stands for something (a referent) has come the assumption of referentiality or "representation": that semiotically language corresponds to reality straightforwardly. Most semiotics has erred in a further respect. The nature of representation will be given further consideration in Chapter 7, but we can conclude now that many signs are not "representational" in any sense. An uttered swear-word, being an index, is an Expression of anger, not a representation of it. Ellipsis and elision signal the speaker's intention to establish an informal relationship with the hearer; they create the relationship, not represent it. Inflections, articles, auxiliary verbs, Subject/Predicator order, and so on signify the grammatical status of other items, guiding hearers in how to construct the utterance grammatically. Giving a command and asking a question constitute actions and trigger a corresponding action by the hearer. None of those expressions represents anything (in the sense relevant here). The significance of a linguistic sign, then, is functional: it transfers information, or triggers a response, or carries out a social action, and so on. Similarly, we have seen that it is unsatisfactory to regard meaning as being "in" words or utterances, as if they were containers.

3 Relations Among Semantics and the Other Strata of Language

3.1 Introduction

This section brings together points made in the earlier chapters and extends them, as an attempt to make clear the relations between semantics and the other strata of language – a topic on which there has been very little agreement in the past. It builds on the last section, but the approach here is linguistic rather than semiotic, and the relations are considered in more detail.

We have seen repeatedly in the previous chapters that meaning is expressed in phonology, in syntax, and in morphology, as well as in lexis; and that the realisation of meaning is not a simple linear process, through words,

morphosyntax, and phonology in turn. Accordingly, the following subsections give an account of how each stratum realises the stratum immediately below, then an account of how it realises meaning from a lower stratum. As well as supporting previous chapters by setting out explicitly semantic relations that underlay the material there, these sections are intended to clear away some confusions and misconceptions in past work.

3.2 Relations Between Phonology and Other Strata

RELATION TO THE STRATUM BELOW

The phonological stratum realises the morphosyntactic stratum below it, producing a sequence of sounds making physically real the sequence of syntactic abstract forms. To that extent, the stratum produces no meaning other than what is carried by the morphosyntax. Phonological /kæt/ is morphosyntactic *cat*, no more.

DIRECT REALISATION OF THE SEMANTIC STRATUM

However, phonology often carries meanings of its own, additional to those realised from morphosyntax. To do so, it generally gives particular significance in one of the four dimensions making up phonology: tonality (the arrangement of words into vocal groups), tonicity (the presence of a main stress in the tonal group), tone (melodic pitch contour on the main stress), and rhythm (pattern of subordinate stresses). For example: using a certain allophone of /r/ will signify an American rather than a British context. In that example, the phonological expression adds to what the morphosyntax expresses. In other instances it duplicates it, as when an exclamatory tone emphasises exclamatory syntax (a construction with *what* or *how*). For details of the four dimensions, see Halliday and Greaves (2008); for more detail of their use in realising semantics, see Feist (2016: §2.5).

Clearly, the exclamatory effect just referred to and other significance of

intonation, stress, and tone are expressions of the speaker's intention and created by the phonology; they are not part of the phonology, nor are they in it. That may seem obvious, but it has an important consequence in a following section.

3.3 Relations Between Lexis and Other Strata

RELATION OF LEXIS TO SEMANTICS, BELOW IT

Word senses, as the semantic part of lexis, realise a pattern of elements in the linguistic/cognitive network below it (as discussed in Chapter 5). Senses are not fundamental semantically, in three ways. First, senses cannot be equated with knowledge; we must distinguish linguistic meaning (senses) from cognitive meaning (knowledge). Second, lexical senses are probably always composed of sublexical elements. Third, senses combine descriptive elements of cognitive meaning with other content elements (feeling and attitude). The elements from cognition are realised (i.e. given structure) in varying combinations, as we saw in the analysis of the various senses of *gracious* and its synonyms (§1.7 earlier) and in other word studies.

Subsenses from non-cognitive faculties are also realised in various combinations. For example, the concept well known combines with an approving attitude in the sense realised as *famous*, and with disapproving attitude in *notorious*, and appears on its own in *well known*. Those are entrenched combinations; some combinations are formed as occasion requires, as when POOR is combined with a feeling of compassion or of condescension, in different contexts. Those combinations constitute senses.

RELATION TO THE HIGHER STRATA

Most of what needs to be said about the relation between lexis and morphosyntax will be dealt with in the following section, but there is an important point that does not fit there. Some word senses are realised as independent units, not as part of syntax; they stand outside its structure, as interjections or "discourse markers".

The speaker may have a choice, however. While the sublexical element of surprise may be realised as the non-syntactic word *wow*, it may be realised in the morphosyntactic word *surprising*, or as the high rise and fall intonation pattern, which can be superimposed on neutral wording or on a non-verbal sound such as "uh".

COMPLICATIONS

Speakers' continual search for greater expressiveness, for shortcuts, and for ways of fulfilling various language functions effectively has produced many complications in the way lexis realises speakers' linguistic intention.

MISMATCHES BETWEEN LINGUISTIC AND COGNITIVE SENSES

There are a number of ways in which the linguistic sense of a word may not match the cognitive meaning it is intended to evoke.

- The linguistic meaning often underspecifies the cognitive meaning, as in vague words, leaving the hearer to expand it.
- In figurative use, the literal linguistic sense does not match the figurative cognitive sense.
- Nominalisation also creates a mismatch. In the statement about a wall that "There is no risk of immediate failure",[6] the cognitive meaning concerns the risk that the wall will fail immediately; cognitively, we must conceptualise the Event 'fail', replacing the Entity 'failure'.

GRAMMATICAL SENSES

Grammatical senses such as those of the articles do not each realise a semantic item; and, although they are realised as words, they thus do not seem to belong on the lexical stratum. They seem to be artefacts, generated in the transformation of lexis into syntax. Much the same seems to be true of the grammatical function

of prepositions. Here, the metaphor of "strata" breaks down. In these circumstances, we are better served by such words as *semanticise, lexicalise, grammaticise* – and perhaps *syntacticise* and *morphologise*.

CONCLUSION

The lexical stratum does have items (senses) that realise elements from "below" it – which may be thought of as semantics, or significance, or the speaker's intention in speaking, which include both cognitive meaning and linguistic meaning. However, there is considerable complexity in the relations between lexis and those elements.

Words, as lexical items ("in the lexicon" – before they are uttered) link semantic structures with syntactic and phonological properties. They are not yet real and, as patterns of linkage, are not distinct units. They have the potential to be realised and become morphosyntactic words.

3.4 Relations Between Morphosyntax and Other Strata

INTRODUCTION

This section has been left to last among the sections on stratum relationships, because it is the most controversial; the hope is that the analysis in previous sections will guide us to sound and acceptable conclusions. Morphosyntax and semantics will not be taken for granted as linguistic realities; rather, the approach will be that of examining and describing what we can observe, and deciding subsequently what "syntax" and "semantics" should be used to mean.

REALISATION OF THE LEXICAL STRATUM, BELOW

In the stratum usually called "morphosyntax", the words carrying content senses are given position in a sequence, ready to be uttered in phonological sequence.

That is all that morphosyntactic realisation of content senses consists of – all that needs to be done. In that "syntacticisation", the lexical meaning is given a new form (i.e. linear order, instead of network structure).

DIRECT REALISATION OF SEMANTICS, FURTHER BELOW

Simultaneously with the realisation of lexis, some semantic elements that are not in lexis are realised. That is needed because the lexical senses in themselves do not show the hearer which words are to be related, and how, even though that is a vital part of the speaker's message. The relationships are of course indicated primarily by word and group position, in English; for example, preceding a head word typically indicates modification of the head. (See Chapter 3, §7, on grammatical meaning.) Other languages use other primary means, such as morphological case.

In English, morphology makes a second contribution to meaning similarly, through word form. For example, having a form that can be inflected for tense typically indicates an Event and indicates to the hearer the time of occurrence and the aspect under which the event will be considered; and, as Predicator, it frequently signifies whether the hearer should accept the statement or answer the question, etc. The "grammatical categories" that constitute syntax exist to convey meaning, as Halliday notes (2004: §3.2); they are not fully autonomous. Transitivity and the "semantic roles", "theta roles", "grammatical relations", or "argument structure" are not in the syntax; nor are they part of it: they are meanings created by it. That is parallel to the status of meanings in the phonological stratum; see §3.2.

A third element of the total meaning that appears here without having appeared in the lexis is the bonding between words and groups. As explained in Chapter 5, §2.3.4, §2.3.5, and §3, the bonding is between certain sense elements in each of the related words or groups and is constructed by the hearer in response to grammatical meanings. For example, the fact that *red* precedes *leaves* in "those red leaves", which signals modification, leads the hearer to bond red as value to the colour attribute of *leaves*.

Those processes develop the ideational meaning. Only a little interpersonal

meaning is added at this level, as when exclamatory structure realises emotion (Chapter 3, §2.3.4,) and tag questions realise attitude ("is it?"/"isn't it?", Chapter 3, §2.3.5). Content-unit structure, however, is developed fully; see Chapter 2, §2.3.

We have noted previously the radical difference between a syntactically structured utterance and a list of the same words in alphabetical order; the processes described in this section explain how that difference comes about. Morphosyntax contributes far more to the speaker's intention than its simple realisation of lexis.

CONCLUSION

Lexis is a series of signs (words) realising content senses (i.e. it gives them form). What we call "morphosyntax" is twofold: realisation of the lexical words (in the sense of giving them order), and realisation of grammatical senses (in word order and word inflections, as signs). It realises meaning both indirectly (content semantics), and directly (grammatical semantics).

Since "grammatical relations", "roles", and "argument structure" are meanings created by morphosyntax, not parts of it, they are semantic rather than "grammatical" or even morphosyntactic.

Reference has often been made to the "syntax–semantics interface". We conclude that that conception is misconceived. First, the "interface" of syntax is primarily with lexis, not semantics. Second, the "relation" between them is the abstract one of realisation; the reality consists of the processes of combining sense elements and ordering them. There is none of the mechanism and extra processing entailed in an "interface" (such as the screen and electron flow in a computer–user interface).

3.5 Semantic Stratum

3.5.1 Introduction

The relation between the semantic stratum and the others has been set out in the

previous sections. In summary: it is realised by them; sense elements are combined and related to morphosyntax in the lexical stratum, which makes up most of the realisation; some elements are realised on the phonological stratum; some elements can be realised on all of those higher strata.

3.5.2 Nature of the Semantic Stratum

The preceding discussion shows that semantics is not like the other strata. It has no apparent bottom, since it disappears, as it were, down into undefined unconscious depths of the mind (in perception and other faculties). Calling it a stratum of language suggests that its content can be satisfactorily defined verbally; but we have seen that the material that is formed into word meanings includes the expression of attitudes and feelings that defy verbal definition (expression of affect, as in swearing, being distinct from statement of it), and even a basic descriptive element may be too close to perception to be put into a word of its own.

"Semantic" also suggests something that is conveyed from speaker to hearer. However, conveying things is only one function of language, and it may seem odd to describe as "semantic" such functions as inducing the hearer to carry out an action or share feeling, or be amused; those seem to be consequences of language or responses to it, rather than meanings.

Even "the" in "the semantic stratum" is potentially misleading, for two reasons. First, as we have seen, some forms of meaning seem to appear in the upper strata without being evident in the lower putative "semantic" stratum; that is true of many grammatical meanings, and of meanings carrying out speakers' secondary intentions (such as being clear or sociable and guiding the hearer's absorption of information). Second, it seems essential to distinguish between linguistic meaning (in the linguistic faculty, presumably) and cognitive meaning (presumably in the cognitive faculty), as if there are two "semantic" strata. We could avoid that dichotomy if we spoke of a gradient between the two, which is more accurate in one respect (see Chapter 3, §2.4 on areas of meaning), but complex senses commonly combine cognitive and linguistic elements. As to "stratum", then, it is clear that we must simply accept that there is no clear layer, and little unity; that

is a fact of the way language has evolved.

As to what being "semantic" should be taken to mean, I suggest that there is no fully satisfactory resolution of that problem, either, for two reasons. First, since there is no agreed satisfactory understanding of what I have discussed as "linguistic", "cognitive", and "grammatical" meaning, and so on. Second, "meaning" and "semantic" each have several well-established uses (some of them dependent on a specific approach), which will certainly continue. The best we can do, I believe, is to base our terms on the semiotic approach. That approach, treating language as a system of spoken and written signs, provides "language" with a satisfactory definition, and provides a sound basis for analysing it (as phonological, syntactic, morphological, and lexical signs of various types and in various structures).

Following the semiotic approach, then, we begin from signs, and the fact that signs have significance. "Significance", then, makes a reasonable term to cover both what has been thought of as "meaning" or "semantics", and the range of functions that language has evolved to serve. The significance of an utterance may be the message it was intended to convey, the action it was intended to bring about, the response it was intended to stimulate, the maintenance of social relations it was intended to ensure, and so on. "Significance" also naturally includes intention, which has often been implicit in "meaning", and which is a characteristic of linguistic functions (even if not always fully conscious); and it can naturally include also the Expressive function, which is often not conscious or deliberate.

"Semantic" can then mean "to do with significance in language". Significance in language is whatever its signs evoke in hearers and readers in accordance with the language's grammatical system; that excludes idiosyncratic hearer interpretations, and (of course) any "meaning" the speaker intends but does not realise in signs. As to "meaning", it seems better to extend its meaning to that of *significance* than to restrict it to the varying and ill-defined narrower senses it has had in the past. That it is intended to answer the questions about "semantic" and "semantics" raised in the first chapter of the book.

3.6 Conclusion: Relations Among Semantics and the Other Strata

3.6.1 Relations Between Semantics and Syntax

The section has argued that "grammatical relations", "roles", and "argument structure" are meanings created by morphosyntax, not parts of it, and that they are therefore semantic rather than syntactic or even "grammatical" (§3.4). That account slims down the bulky figure of traditional syntax and "grammar"; but it follows from assumptions and analyses that are themselves traditional, and it resolves confusion.

3.6.2 Autonomy of the Strata

In the last few decades, there has been much discussion about "autonomy", especially for syntax; so it will perhaps be useful to outline the issue for all of the strata here. As so often, discussion has been confused by variation in the meaning of the key term: I suggest that four elements can be distinguished. All of the strata are autonomous in the sense that they have their own kind of structure (kind of unit and relations between the units). They are all autonomous in the second sense that they must be present, except that morphology may be marginal, as in some English utterances; also, it seems possible that there may be languages where morphology is absent. Third: in principle, all the strata have (or may have) a role in the most obvious function of language, bearing content. Finally, the strata have varying degrees of control over the other strata; each controls the form of the stratum above directly, to some extent, and therefore controls the higher strata indirectly.

In English, semantics has for a long time been becoming more dominant, reducing the autonomy of the other strata; that is, semantics can increasingly (in English) prescribe not only word meanings but also syntactic structures and morphological and phonological forms (as with "The committee <u>are</u>…", breaking morphological rule). In marked uses, which seem to be increasingly common, semantics overrides lexical, syntactic, or phonological rules; figurative language has been in use throughout recorded history, but marked position of premodifiers in English has been possible only in the last century or so (Feist 2012: chapter 8). The misrelation and most of the neologism discussed in earlier chapters has been

a breach of established convention or rule in the interest of expressiveness (e.g. switching the transitivity of verbs, and converting senses from Entity to Event, and vice versa). Similarly, we can breach prepositional idiom for the sake of shades of meaning. (The managers of an Australian firm were said to be "relaxed about Amazon's arrival to Australia";[7] *to* has replaced *in*, to suggest that Amazon had come from America to Australia. "The banking system continues to direct capital at favoured projects";[8] *at* has replaced *to(wards)*, to suggest forcefulness, and targeting perhaps.) In English, the relative autonomy of the strata has been changing.

4 Relations Between Meaning and Knowledge

4.1 Introduction

ARGUMENT

Historically, it was generally assumed that the "content" of language simply is knowledge, and that there is a close parallel between semantic structure and knowledge structure; it was axiomatic, for example, that a sentence is a complete thought. This book has challenged that in distinguishing between cognitive and linguistic areas of meaning. This section on relations between meaning and knowledge will develop that distinction further. The argument will be based on explanations given in previous chapters and on recent neurological research.

I will use "knowledge" to denote what we take to be an understanding of the real world, both physical and mental. Knowing contrasts with other mental activities such as feeling emotions and making decisions. "Cognition" is now often ambiguous, sometimes denoting knowledge as just defined, and sometimes denoting any mental activity. The word cannot be avoided, however; I will use it to refer to knowledge and use "cognitive" similarly – as I have so far, in the distinction between cognitive and linguistic meaning.

OUTLINE OF THE SECTION

Knowledge is usually seen as having units (concepts), roughly equivalent to word senses, that are combined into structures such as propositions, which are at once thought or knowledge structures and semantic structures. The chapter accordingly discusses the nature of concepts and their relation to meaning (§4.2), then thought and its relation to meaning (§4.3). Discussion and conclusion sections follow. The last part of this introduction (§4.1.3) sets out recent research on the conceptual system, as an introduction to both concepts and thought.

Among the types of meaning (Chapter 3), only descriptive meaning has concepts and is comparable to knowledge. So emotive, attitudinal, and social meanings are irrelevant to this section, although they were included in "content" in Chapter 3; "senses" will here always denote descriptive senses.

CONCEPTUAL SYSTEM

Modern research, especially with brain imaging, has given us a new understanding of how concepts are formed. A clear understanding of concepts now needs an understanding of the conceptual system that forms them. This section offers such an understanding, based on recent neurological and neurolinguistic research. It contrasts with the view of concepts as uniform imprints on the mind, which persists: "Semantic properties have the form they do because the form of all human minds is the same" (Frawley 1992: 50).

The understanding of the conceptual system accepted here rejects the following four assumptions commonly accepted in the past: that (1) concept formation works independently of action, emotion, and motivation and is thus modular; (2) its representations, similarly, are distinct from those of perception and thus amodal; (3) the representations are abstract in being independent of their exemplars and not subject to variation with context; and (4) they do not vary from person to person, or with different occasions of use.

The alternative view, adopted here from Barsalou (2005: chiefly), is that the conceptual system, in the sense of a set of operations, is the processing ability that forms knowledge from all "modalities" (for example, internal and external

perception, emotion and memory), and uses it in most of our daily activities – including problem solving, decision-making, and talking, as well as academic and logical tasks. The operations were set out in Chapter 5, §2.5; briefly, they are those of conceptualisation, making simulations (temporary re-enactments of concepts), selecting and combining elements from the network according to the needs of the moment, with each simulation accordingly varying from others slightly. I emphasise that conceptualisations are not to be identified with concepts; they are real, as occurrences in the brain; they are short lived, being momentary impulses in the brain; different conceptualisations of the concept cat, for instance, differ from each other; the concept cat is psychologically an abstraction from real conceptualisations of cats, just as it is metaphysically an abstraction from real cats.

In the abstract sense of "system", the conceptual system is the connected pattern of concepts that make up knowledge; they are activated temporarily for conceptualisations in the operative conceptual system (along with memories and so on). The concepts are often thought to represent categories, that is, classes of objects; but recent scholars insist that we have concepts, or even "categories", for "locations, times, events, introspective states, relational roles, properties etc." (Barsalou 2005: 621).

That account is supported by recent research in behavioural psychology, brain lesions, and neuroimaging of brain processes – see for example Barsalou (2005: §3) and the work cited there, as well as Ashby and Valentin (2005), Fortescue (2009), and Pulvermüller (2010).

4.2 Concepts and Meaning

4.2.1 Introduction

In "the current literature on concept theory", says Panaccio (2005: 993), "confusion reigns". In particular, there is unresolved controversy as to the nature of concepts. It is now becoming accepted, however, that the various descriptions can be grouped together into four main types of concept, with scholars dealing with some or all. The types are as follows:

- “classical” concepts, defined by genus and differentia;
- “prototype” concepts, with several criteria of varying importance, and with some members of the class denoted being better examples than others;
- “exemplar concepts”, denoting the exemplars that make up the category, rather than an abstraction; e.g. ‘all the things on my desk at this moment’, for which there is no single word or single abstract idea;
- “theory concepts”, coherent structures of conceptual elements that go to explain an area of knowledge.

The confusion Panaccio refers to also includes several assumptions rejected by many modern scholars, and this theory, as follows.

- A concept is a general mental description of a category, used across all occasions.
- All concepts are of the same type.
- Concepts match words; in general, there is one concept for each word.
- Concepts refer to classes of things in the world; that is, they have a direct correlation with reality; and the correlation is with things, rather than with events, qualities, or relations.

The various accounts of concepts commonly have such problems as the following.

- An alternatives problem: what is an element of knowledge if it is not a concept? In particular, are the “features” of a concept themselves concepts?
- A size problem: how “big” is a concept? That is, how inclusive as it? For example, bird is generally given as having parts such as wings, which must also have parts (e.g. feather). Are the parts represented by concepts? How many more elements (concepts, perhaps) are included? In what “larger” concepts is bird included?
- A distinctness problem: is the Greek concept of an atom (for example) a different concept from the modern one? Is the scientific concept of bird a distinct concept from the popular one?

There is also confusion in terms, resulting from careless thinking. We need to distinguish between a concept and the class or category of things it identifies. "Concept" applies to knowledge, but "meaning" applies to language, so they cannot be simply equated. Those in turn must be distinguished from words, since a word may have different meanings and be linked to different concepts. Yet I have on several occasions read a passage where the author began by referring to something as a concept, referred to it later as a category, and went on to refer to it as a meaning, or as a word.[9]

This section sets out to show how the controversy about different types of concept can be resolved, to show what is wrong with the assumptions, to show how the questions are to be answered, and thus to clarify the confusion.

4.2.2 Types of Concept

This section argues that the various types in the long controversy about concepts are variations within the conceptual system. The variations occur because conceptualisations develop differently, adapting to different functions and different situations. The types will be illustrated from HORSE.

A conceptualisation of horse would develop into a classical concept when (for example) the situation is scientific and requires a concept with indisputable reference; that requires the elimination of all sensory details such as its appearance, its loose everyday uses, all personal associations, and so on. The classical concept has the value of allowing strict reference and reliable inferences, in language and in thinking.

HORSE as prototype concept would include as typical details the elements of being about the height of an adult person, having a mane and a long tail; peripheral details (occurring in only a few instances) would include being sometimes black and white, and having heavy hooves. Such concepts are most useful in everyday personal interaction, where identifying the referent is easy, or where vagueness is wanted; since the range of constituent details is indefinite, such concepts do not suit accurate reference or logical thinking. There is neurological evidence that features are always integrated with such a concept, often below consciousness (Hurford 2003: 275); Barsalou's conceptualisations can

form prototypes naturally.

Small children learning the word *horse* would presumably form an exemplar concept of horse, consisting of images of horses and related elements from their experience. Such concepts are likely to be useful also when we are thinking rapidly and associatively, but not thinking logically, or speaking descriptively. For more detail on these concepts, see Hampton (2016), and particularly Chandler (2017).

A theory concept of horse would be useful when we are thinking biologically. It would include such elements as MAMMAL and EVOLUTION. See Murphy and Medin (1985) and Murphy (2002) for further detail.

CONCLUSION: CONCEPT TYPES

We conclude that we can resolve the old controversy about concept types as follows. There are different types of concept, not reducible to a single type, and suited to different occasions and functions. That is clear from the very nature of the types and from our own experience of using them; Barsalou's account of conceptualisation provides the mechanism. Thus, the common assumption that concepts are all of the same type is false. Many scholars now support that; see Machery (2010) and the works cited there. We also conclude that there are conventional descriptions of "concepts" that fit the nature of descriptive meanings, as set out in Chapter 3; that confirms the repeated assertion in the book that cognition and meaning overlap.

4.2.3 Descriptive Senses as Like Concepts

Like several types of conventionally understood concepts, descriptive meanings consist of an indefinite number of details, ranging from image schemas to more abstract elements, and from elements that are necessary to the word's meaning to merely possible ones; they vary according to context. Just as descriptive senses have indefinite boundaries, with possible meanings included in some uses but not others, so do conceptualisations activate a varying number of the conceptual elements to which they are closely linked. We conclude that the relation between

concepts and knowledge, then, is simply that (in what we have dealt with so far) descriptive meanings simply are knowledge – items of knowledge, at least.

That is in accordance with the often uncritical assumption of many linguists and cognitive scholars, for whom "conceptual structure" is both knowledge and meaning; for example, see Jackendoff (2011). It largely agrees with those who have refused to distinguish between "encyclopaedia" and "dictionary" in word senses e.g. Langacker (2008). The view of the formal linguists, Lang and Maienborn (2011: 737), is similar in that "Conceptual Structure representations" are conceptual in nature (but there are also "Semantic Form representations", which have a linguistic basis).

4.2.4 Descriptive Senses as Unlike Concepts

Many senses are determined by other senses, rather than by categorisation of the world. Red and blue are perceptually distinct, categorially, but the gradation of colour hues is not; and the distinctions between *scarlet, crimson*, and *maroon* are likewise not dependent on any categorisation that the world demands of us. Again, if you want to use one of the English words denoting walking slowly in a particular manner, you must understand the word set including *amble, stroll*, and *saunter* and *shamble, slouch, totter*, and *stagger*. The senses, then, are delimited by the senses that English happens to have words for, not by logical or metaphysical categorisation of how we walk; they are subject to "linguistic dominance"; see Chapter 3, §2.4, and Gentner and Boroditsky (2001). Their sense elements do not constitute classical, prototype, exemplar, or theory concepts.

In many other words, conceptual elements are combined with non-conceptual ones. *Achromatic, anaemic*, and *albino* are distinct because of the register they belong to; *bloodless, washed out*, and *sallow* have emotive meaning; *off-colour, pale, wan*, and *underexposed* have disapproving attitudinal meaning. Those types of meaning (Chapter 3) control how the words are used. That is, many words do not consist simply of cognitive concepts.

In other sorts of word, the cognitive elements are combined in non-cognitive ways. Saussure noted that the choice of linguistic sign is in a sense arbitrary (*tree* could be *arbre* or *bink*), but it is also true that the choice of what is to be signified

is often arbitrary. That arbitrariness is far more extensive (in English at least) than is allowed for in theories of semantics that take semantic structure to be conceptual structure. *Feak*, for instance, means (if you are a falconer) 'to wipe' (your bird's beak); if you are the hawk, it means 'to wipe' (your own beak, that is), or as an intransitive verb, 'to wipe your beak after feeding'. If descriptive meanings simply presented cognitive reality, content words would relate to concepts one to one. But we can choose between *enter* and *go in*, between *exit* and *go out*, with a choice between two words and one word for the same concept. We have words like *serendipity*, combining a group of concepts with no connection in the natural world. ("A supposed talent for making happy and unexpected discoveries when looking for something else".) Some senses, then, are determined by personal or cultural needs, not by disinterested categorisation of the world.

A final way in which descriptive senses are unlike concepts is that they are regularly reconstrued. Generally, items we conceptualise as happenings are represented by semantic Events, in verbs; and vice versa; but many verbs do not represent conceptual happenings. Most clearly, that applies to copulas; it also applies to relational verbs like *weighs* and *owns* and stative verbs like *knows*. Words with cognitive meaning of position or direction often become semi-grammatical words, as prepositions, rather than content words denoting a cognitive concept. Reconstrual of a word is in fact always a move away from its cognitive base, and we have seen that reconstrual is widespread.

Those four ways in which descriptive senses are unlike concepts also serve to explain the difficulties of translation. The sense you want to translate is likely to be determined by a different set of senses in the new language; its conceptual elements are likely to be combined with different non-conceptual ones; the elements may be combined in non-cognitive ways; and it may have been reconstrued from knowledge in different ways.

4.2.5 Conclusion: Concepts and Meaning

We conclude from §4.2.3 and §4.2.4 that, for many descriptive senses, the conceptual structure is controlled by our knowledge, and that the meaning

elements are very like knowledge, or simply are knowledge. But we must also conclude that many descriptive senses are strongly affected by linguistic issues and are quite distinct from knowledge. We cannot equate conceptual structure with semantic structure, even for descriptive meaning.

The section has suggested a resolution of some of the confusion noted in §4.2.1. The controversy about the nature and structure of concepts can be largely resolved by accepting that there are several types of concept, which have their own value in different situations – in everyday thinking, conversation, scientific analysis, and so on. That implies that two of the common assumptions noted in §4.2.1 are false: the assumptions that a concept is a general mental description of a category, used across all occasions, and that all concepts are of the same type. Other discussion in this section has shown that the other two are also false: the assumptions that concepts match words; and that concepts have a direct correlation with reality.

The "problems" noted in §4.2.1 have not been so well resolved. The discussion provides a way of dealing with the distinctness problem: since "concepts", as abstractions from conceptualisations, cannot be identified in mind or brain, the issue of distinctness is unreal. As to the alternatives problem, we have not seen what other elements there may be in concepts, although Barsalou's account gives some hints, in specifying that there are elements from internal and external perception, and from emotion. The size problem also remains: every account of concepts assumes a hierarchy of elements, but they do not recognise the problem; concepts are presented as consisting of concepts, and so on indefinitely (except in the exemplar theory) – but we could perhaps consider the issue unreal, like distinctness. We must certainly be wary of the term "concept".

4.3 Thought and Meaning

INTRODUCTION

Knowledge does not consist of unrelated concepts, but links them – as "facts", perhaps, or conceivably as "propositions". We have worked from the premise that dictionary words and senses are not real but are rather generalised abstractions

from real-life use. Similarly, we must take it that abstract facts are not real, apart from their realisation in thoughts. We have research such as Barsalou's about realised concepts, but I have found very little about realised thought, as distinguished from abstract thought as logical structure. I will accept what Stanovich (2009) asserts to be a modern consensus from psychology, adding what Barsalou (2005) implies; and I will add neurological evidence from Pulvermüller (2010), with some comments of my own. The argument will be that there are very great differences between thought structures and meaning structures.

TYPES OF THOUGHT

Stanovich describes "mental processes" as belonging to two types. "Type 1" processes occur "online" while we are busy with our daily activities; they construct perceptions and assign perceived happenings and things to categories; they operate below consciousness and are significantly independent of conscious processes. They work fast and need structurally simple concepts, so would accommodate classical concepts easily; being below consciousness, they would accommodate exemplar concepts also. "Type 2" processes are more conscious; they include predicting likely perceptions and events, making inferences from categories, making decisions, solving problems, making plans, forming attitudes, and pursuing goals. They would handle prototype and theory concepts naturally, as the type 1 processes would not. (See Stanovich 2009: especially pages 21–28.) That account fits closely with Barsalou (2005), who describes conceptualisation as practical and as using all parts of the mind – not only intellect, but the faculties of memory, affect, and conation. They therefore include not only "concepts" conceived as narrowly cognitive but also what are often called "mental states", such as attitudes, values, and feelings.

I equate the occurrence of those "mental processes" with what in everyday English we call "thoughts". Stanovich and Barsalou seem to be considering only goal-directed processes, so I make "thoughts" more precise by excluding reveries and daydreams.

SPECIFIC DIFFERENCES BETWEEN THOUGHTS AND

MEANING STRUCTURES

This account does not specify the structures that the processes create; but we must infer them (from the nature of the processes), in order to assess whether it is true, as many linguists assume (Crowley 2002: 262), that thought structure is reflected in clause structure. Just as concepts are thought to be equivalent to meanings, so thoughts have commonly been considered to be equivalent to clauses or sentences.

Inferences drawn from categories are likely to be structured through the category's attributes and their values. Making a plan for an alternative route for driving to work would presumably be structured as a spatial sequence of places to go through, or of directions in which to drive, or a sequence in time of actions to take. Forming an attitude would entail logical processes of comparison and contrast, starting from established values. Solving a problem in dealing with other people could be much more complex, entailing a comparison of alternative situations and courses of action, each of them being complex, as well as our knowledge of the people, including their mental state.

Much of that knowledge, and some of the processing, would be below consciousness, so we cannot grasp directly what its structure is – it may well have no formal structure; but we can see that it would not all fit the structure of everyday language. It would entail holding situations and courses of action in mind – statically, as it were – not just proceeding step by step, as connected meaning does. It seems that thought must often entail a series of happenings alone or of things alone, where figures must be combinations of happenings and things, as Participants and Processes. It may well be proceeding on parallel "tracks", which language cannot do directly. Nor is there any objective distinction between nodes and links (as noted previously); in the plan of a driving route, we could call the places "nodes" and the directions between them "links", but we could instead call the directions "nodes" and call the places "links". (In language, nodes are by default expressed as content meanings, with the links expressed as grammatical meanings.) Thoughts do not seem to have any equivalent of "grammatical" words or meanings.

Those analytical considerations are reinforced by the neurological evidence, in Pulvermüller (1999), for example. That work shows that concepts have centres of

activity in specific parts of the cortex (specific to particular senses, actions, and so on), but extend over wide areas of the cortex and, for some concepts, into deeper levels of the brain; the areas of activation often overlap; there are no observable boundaries, and no observable repeating patterns. Utterances are quite different, occurring on a single level (speech or writing), and having sharp boundaries between units. Thoughts and meanings are constructed quite differently.

The neurological evidence I have adduced, then, tends to the conclusion that although thought and language share concepts, thoughts evidently have much more varied structures than figures, which regularly consist of Actor + Process (+ optional Complement and Circumstance) – with variation of Actor according to figure type.

GENERAL DIFFERENCE BETWEEN THOUGHTS AND MEANING STRUCTURES

The conclusion just reached, that the structures of thought are very varied and not predetermined, creates a marked contrast with semantics, which has pre-established and conventionalised group and figure structures, and particular types of figure. It seems that the relation between thought and semantically structured utterances is indirect and in one sense remote. The relation between thought and such unstructured utterances as one-word answers and holophrases is, of course, even weaker.

There is a further contrast. Current psychological and neurological thinking emphasises that thought integrates intellectual cognition with intuitions, values, attitudes, and so on, since it commonly occurs in holistic situations, and includes evaluating what we perceive, making decisions, and planning how to deal with other people, which involve all of those faculties. More precisely, some of that contrast between thought and semantics is as follows. Although there are fixed semantic structures, they are used very flexibly. We have seen repeatedly that meanings and structures are reconstrued, reaching an extreme perhaps with Classifiers like "beer baby",[10] that do not present attributes of the head Entity, as the syntactic construction requires. Again, we have just seen that thoughts need not include any Events, as figures in standard English must (apart from copular

figures). Evidently, thinking does not regularly have a two-part structure like that of Subject and Predicate, and Topic and Comment (although some thought may be propositional); it need not even have a distinguishable Subject or topic. Semantic structures are often underspecified or over-specified (in repetition and hyperbole, for example), but, as the terms themselves imply, thought is presumably specified more precisely. We can choose between Events and Entities ("He lied" or "He told a lie"); we can construe an event into an Entity by nominalisation, and so on. Hurford (2003) shows that linguistic expression can bypass discursive thinking in his account of how the structure "predicate (x)" is related to neurology.

I suggest that the most important difference, however, is in the very basis of structure. We saw in Chapter 2 that the fundamental structure of figures is the paradigm of assertion, question, command, and exclamation; it is controlled by the speaker's interpersonal purpose; it is not controlled by the structure of any knowledge it is expressing, and of course it may express no knowledge at all. Another fundamental contrast between thought and semantics lies in the strategies that semantics can use to identify referents. As noted earlier (Chapter 3, §2.1.2), language has three semiotic strategies: it can work not only by the descriptive strategy, with concepts, but by using names, or by deixis, which both refer directly and not through concepts. Presumably, thought always works "descriptively" – using conceptual elements. (Deixis is distinct neurologically, since it is related to immediate awareness of objects supplied by the sensorimotor "dorsal stream" in the brain; descriptive detail is based in the cognitive "ventral stream"; see Hurford 2003).

4.4 Meaning and Knowledge: Conclusion

We have seen that concepts may be "translated" into a new form, belonging to a different type, having different details, and connected to others differently. Even the fundamental way in which people conceptualise events in the world varies from occasion to occasion. That is because, as we now know, our knowledge is instantiated in the brain, just as language is; it is constructed stage by stage, according to the needs of the occasion, into forms progressively further from

retina images and other raw perception. Concepts and thoughts are construals, not images of reality, or anything else that correlates with the external world one to one, or directly in any other way. Semantic forms are construals also, but for different purposes, and into different forms. Meaning and knowledge, then, as two forms of construal, cannot be expected to correspond closely, and do not do so in fact.

5 Relation Between Meaning and Reality

The relation between meaning and reality is perhaps more a philosophical matter than a linguistic one, but it is such an old issue in semantic study that it can hardly be avoided in a theory that sets out to be comprehensive. What, after all, is meaning, really? What is the meaning of "meaning"?

There have been three main schools of thought, which I will expound using Harris (1980) as a clear and fairly concise account, which is reasonably representative. The "surrogationalist" school has asserted that meaning is a surrogate for reality, which "stands in" for it; it is a "representation" of it. The "contractualist" school has taught that meaning consists of a contract among its users, as a set of social conventions. The "instrumentalist" school has taught that meaning is an instrument or tool for living. This section argues that the analysis of meaning in the previous chapters leads irresistibly to instrumentalism, if we are to choose one of the three.

The contractualists are clearly right to some extent. We all agree that the meanings for words and other signs are largely set by tacit agreement among users. Further, the theory is valuable in reminding us that, like banknotes, words have no inherent value, and that we must conform to others' expectations in using language. However, the theory does not give us the fundamental nature of meaning, since all contracts exist for some benefits they deliver to the participants, or for a purpose or function, which is then the fundamental explanation of meaning. The existence of a contract is a side issue.

Perhaps, then, surrogationalism provides the explanation, which would be the function of standing for reality, or "representing" it; one meaning would

correspond to one piece of reality. That made reasonable sense when Plato suggested it, since his reality was a set of abstract Forms or Ideas, and meaning was a set of abstract concepts; the concept good can naturally be taken to represent or stand in for the Idea of Goodness, as shadows and images can represent a physical object.

Now, however, there is consensus (I take it) that reality is physical, as either matter or energy, and that meaningful utterance can be described mentally, from one point of view, and physically (in the brain and other bodily organs), from another. The mental and the physical explanations are complementary, as matter and energy are complementary descriptions of reality, both being needed for a full understanding. Nevertheless, the surrogationalist view seems to persist, since many linguists write of words "representing" what they mean or even "reproducing" it, though it is usually not clear how strictly those words are intended: "The processing of information aims at mentally reproducing the structure of systems" (Robert 2005: 701).

From the neurolinguistic point of view, the word columns that are the nearest equivalent to a word (Chapter 5, §2.5) cannot be said to "represent reality". For the difficulties from the linguistic view, let us consider an example from Kalam, a language of New Guinea, in comparison with English. The statement "The man threw a stick over the fence into the garden" presents a single event. Kalam would present the same situation as four events: 'the man grasped the stick'; 'he threw it'; 'the stick flew over the fence'; and 'it fell into the garden'. (Pawley 1987: §12). It was noted at the end of §4.4 above that we cannot expect the structure of meaning and knowledge to correspond closely; but the identification of events and entities is so basic to knowledge that we may presumably assume that the sentences do represent English speakers' knowledge and Kalam speakers' knowledge, respectively. The forms of knowledge presented in the two languages do not match; at least one of them must be a construal of reality, not a direct presentation of it. That illustrates the conclusion that our knowledge does not represent or reproduce reality reliably.

From a more abstract perspective, there are several deeper difficulties in taking the representations view strictly. There is the familiar philosophical difficulty that to check whether the knowledge in our meanings corresponds to reality, we would need some access to reality independent of our knowledge – which is

impossible. Next, just what corresponds is problematic: if it is senses, then we must presumably accept that reality consists of clusters of features; if it is statements, then presumably reality consists of pairs made up of a subject thing + a predicate thing + the relation between them; neither of those possibilities seems credible. Next, we need to understand the nature of the correspondence. With a map, it is clear that the map is "true", corresponding to reality in directions, proportions, and relative sizes; but with meaning and reality, it is not clear what it is in which the correspondence inheres.

We simply do not need to hold a view with all those difficulties: we already accept a parallel view that does without it. We accept the validity of mathematics without believing in any external reality, which is represented by such abstractions as "x", "y", "√", or even "1" and "2"; even the impossible idea of the square root of −1 is acceptable. We know that they are "merely" mental, being human constructs. We accept them because they work; they enable us to divide land acceptably, to bake edible cakes, manufacture reliable cars, and so on. We accept language for the same reason: it works. It enables us to get someone else to bake our cakes, or open the door, or enjoy our company. Language is a tool we all use for living. We are all instrumentalists, and it does not matter that Plato had it wrong.

It will be clear, I trust, that that conclusion is another form of the principle of functionality that has recurred throughout the book, as necessary for understanding the forms and structures of meaning.

6 Further Research

This book leaves many things needing further research. Particularly, the validity of the theory for languages other than English needs to be checked. In my observation, semantic study of other languages goes very little further than grammar (including lexicography) and translation; that is, it does not study semantic structure, or types and dimensions of meaning, and so on that have characterised semantic study here. (One instance where that has been done is in the pattern of lexicalisation by which some languages tend to include in a verb

the concept of direction, where others lexicalise it separately, in an adposition.) I have illustrated the theory from other languages in some instances (particularly in §3.4.2, and in the various discussions of serial verbs); but even those accounts need more depth, and application to more languages.

Similarly, we need research in semantic typology. I have made some distinctions that are perhaps the basis for typological differences: ideational versus interpersonal function; cognitive versus linguistic meaning; and content-structured meaning versus syntactically structured meaning. Perhaps there is a type in which a semantic unit's class is fixed, as it seems to have been in Old English, and another in which it is flexible – to which English seems to be heading. Perhaps the typological distinction between accusative and ergative languages is semantic as well as syntactic.

The theory of meaning presented here is significantly different from the theory implicit in historical dictionary-making; I believe that further research will improve lexicography accordingly. For example, it seems highly desirable to find ways of presenting the various types of meaning equally in the dictionary entry, of specifying the dimensions of a sense, and of dealing with synonyms better.

Several specific topics seem to merit more research. I believe that my analysis of case earlier in §3.4.2 should be confirmed or refuted. I am not confident that my account of dimensions (Chapter 4, §1) is complete or even fully accurate. My suggestion that ergativity exists in English in cognitive meaning, but not in linguistic meaning, could be examined further. I suspect, finally, that grammatical meaning needs further study: how is it implemented in the brain? Is it conative – to do with the will and with performing actions – where content meaning is cognitive? Two general issues seem to apply. The theory would profit from further neurolinguistic research. It should perhaps be developed with greater rigour.

Notes

1. *New Zealand Herald*, 30 April 2014, p. A7.

2. SOED citation.

3. Samuel Johnson, cited in SOED, for *glow* <1>.

4. M. K. Joseph, "Elegy in a City Railyard".

5. NZTV1 News, 24 August, 2020.

6. From a newspaper report.

7. *New Zealand Herald*, 27 September 2017, p. B3.

8. *Economist*, 9 September 2017, p. 11.

9. Instances of such confusion include the following. In Wierzbicka (1985a: 218), paragraph 1 has "meanings" in the first sentence and "concept" in the last sentence, denoting the same thing. Wisniewski and Gentner (1991: 267, para 1) compare the "concept *soap*" with real soap. Osherson and Smith (1982: 300, para 1) equate testing concepts with testing sentences.

10. From a newspaper headline; a neglected baby had been found lying in a puddle of beer.

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7

Conclusion

DOI: 10.4324/9781003259381-7

1 Introduction

This chapter concludes the book in two ways. Section 2 gives a summary. The remaining sections summarise the argument for accepting the book's theory of semantics, although the force of the argument lies, I suggest, in the detail given in the preceding chapters.

2 Summary of the Book

2.1 Summary, by Principles

INTRODUCTION

This section presents the theory of the book in the form of the principles outlined at the beginning and developed throughout. They are intended to explain the conventional, analytic form of the theory, given in §1.2, and to be closer to a universal form that will be more relevant cross-linguistically, although the

instances given are primarily for English, as always. I expect that the selection and description of the principles is rather subjective and could be improved.

HUMAN ACTIVITY PRINCIPLE

Meaning, as part of speech, is a human activity. Taking human beings as "rational animals", we take meaning to be partly rational and conscious, embodying knowledge, using the syntactic-unit structure (Chapter 2, §2.2). It is also cultural and social; social interaction creates the need for content-unit structure (Chapter 2, §2.3) and the need for guidance in grammatical meaning (Chapter 3, §7). But meaning is also animal in character, in part instinctive, impulsive, and emotive, as in interjections and emotive meaning (Chapter 3, §4.4).

As an activity, making meaning in speech is physical behaviour, occurring in a particular place and time; it can be a simple and automatic response to a situation. It is also mental activity, however, and integrated with the human organism's other mental activities, such as cognition, feeling, and decision-making; it can be skilled, as in expressive and persuasive language. In particular, there is a balance between linguistic and cognitive meaning (Chapter 3, §2.4); different types of meaning serve different mental faculties (Chapter 3); and distinctively linguistic meaning grades through sublexical elements down to conceptual cognition and finally to perception (Chapter 5, §5).

PRINCIPLE OF INSTANTIATION

As part of human mental activity, speech, and meaning with it, is embodied in the brain and instantiated in either sound waves or marks on paper.

Sub-principles as particular forms of that general statement are as follows.

- Reality: the neural activity that embodies meaning is metaphysically real – hence the importance of networks and of the neurolinguistic evidence cited; the structures and senses described in the theory are abstractions from them, created for the sake of our understanding.
- Phenomenality: what we study in semantics are phenomena consisting of

sound waves or marks, since only they – not syntax or even words – are real, and we must examine all the phenomena before we can tell whether they are semantic.
- Process: utterances are instantiated by the process of realisation (Chapter 2, §5), creating the levels of language (Chapter 3, §2.3).
- Linearity: those phenomena, and the semantic forms they instantiate, are linear (e.g. Chapter 2, §2.2.3). Hierarchic structures and some others are inferred from them.
- Situatedness: the phenomena are situated in the linguistic situation (of speech or writing), which is itself situated in activity between a speaker or writer and a hearer or reader, and usually therefore in a social and cultural situation; hence deixis, and the distinction between aspects of meaning (Chapter 3, §.2).

FUNCTIONALITY PRINCIPLE

Since meaning is part of human activity, which is always motivated (not always consciously), and since it occurs in a situation, it is functional. It is functional, first, in the biological sense that it gives benefits, whether or not our utterances are deliberate or with a conscience purpose. Thus, it has sub-principles as follows:

- Multifunctionality: language, and semantics in particular, can serve several functions at once, since people are complex and often act on several levels at once, such as carrying out a practical function, maintaining social relations, and asserting personal identity (Chapter 3, §2.1).
- Being interpersonal: since speech is always in a speaker–hearer relationship, it is always interpersonal, whether deliberate and conscious or not (Chapter 3, §2.1 and §§4–6).

Meaning is functional, second, in the sense that, as an activity, it performs operations as mechanisms do. Thus, it features:

- Structure: it functions as a structured series of processes in the mind

(Chapter 2, §5.1, chapter 3, §7), using structured sets of neurons in various areas of the brain (see the various sections of psycholinguistic support).

DEVELOPMENT PRINCIPLE

As a functional part of the human organism, meaning has developed in the past and goes on developing. Thus, it is subject to the following.

- Evolution, from its beginnings: it has adapted to its functions, to its situation, and to the speech organs.
- Historical change: it is in some ways adapted to its social and cultural environment; it is in some ways out of date or not well adapted, where society and culture have changed faster than it has. That occurs because of the evolutionary changes, also. (See Chapter 6, §2, and the various word histories.)
- Learning, by children, as they grow up: that may initiate historical change if children reconstrue what they learn, and a feature's being difficult to learn may be a constraint on change.
- Construal and reconstrual, resulting from development, both historically and in children (chapter 4, §2.3.6, for example). That has been important for understanding semantic classes (chapter 5, §3.6.4) and sublexical semantics (chapter 5, §5.2), in particular.

SEMIOTIC PRINCIPLE

Since the instantiation of meaning is in sound or marks on paper, as signs, there is nothing in the instantiation that can represent it. That is, the signs cannot represent the meaning in a strict sense, as a map represents land, or as a member of parliament represents an electorate, or as sprinting may be thought to represent athletics. Signs evoke meaning in the hearer's mind, primarily because speakers have learned to associate the signs and the significance. (Exceptions include iconic and indexical signs.)

- There is no inherent limit on what sort of mental activity a sign may evoke. In particular, there is nothing that requires them to evoke concepts. (See Chapter 3, §2.1, for example, on the Expressive function.)
- Since language has evolved, and since it serves different functions, there are different kinds of sign; in particular, not all signs are symbols. Some are relatively sophisticated, some relatively primitive. They vary in the form of the sign, in the type of significance, and in the relation between sign and significance. (See Chapter 6, §2.)
- Since signs are the only way in which meaning can be realised, there can be no meaning if there is no sign. Also, it is a sound rule that if there is a sign there must be a meaning. (That does not follow logically, but the linguistic system has established the rule to aid efficiency.)
- Since linguistic signs are not commensurate with their significance, they are commonly arbitrary, and reliant on convention. However, since they have evolved (presumably from our primate ancestors), they may be indexes, taking their meaning from the association of cause and effect (not from convention), and therefore be motivated (Chapter 6, §2.3.2).
- Since there are many signs, users are always making a choice among them, so meaning entails choice; there is always a reason for making the choice, so making a choice entails meaning.
- For the system to work efficiently, each sign must have its own meaning, and every meaning have its own sign: therefore, the principle of isomorphism applies (Chapter 6, §2.5.3). However, since the system is human, and evolutionary development is not always consistent or logical, there are inefficient exceptions; they include contextuality (Chapter 4, §1.3), homonymy (Chapter 6, §2.3.6), and polysemy (Chapter 5, §2.3.4).
- Because the language system is a sign system, and because there is in principle no limit to what mental activity may produce the signs and be evoked by them, what they evoke must be thought of as significance, without restriction, rather than as "meaning", which has many varied restrictions. The significance may be any of the following, which are not usually thought of as "meaning": an instruction to use other meaning to adjust or combine with still other meanings (Chapter 3, §7); command, question, or exclamation, as human activities; an effect on the hearer,

such as amazement or amusement; an emotional response; social response, such as identifying with the speaker's social group (all in Chapter 3, §3–§6).

PRINCIPLE OF SYSTEMATICITY

The meaning system, considered as an abstract structure and not as a functioning mechanism, must be systematic to a significant degree; otherwise, it would not function well and would not have survived. That is, it is controlled by principles; it is interconnected, consistent, efficacious, and at least reasonably efficient. That has resulted from its evolutionary and historical development. Nevertheless, it is sometimes inconsistent or crude. That is because of the sometimes conflicting things to which it has adapted: multiple functions (Chapter 3, §2.1), historically different situations (Chapter 6, §1), and different uses (Chapter 4, §2). The main principles that make the organisation of meaning systematic are as follows.

- Ranks: meaning, like syntax, works on ranks – of sense, group, figure and paratone (Chapter 2, §2).
- Syntagms and paradigms: within each rank, each unit is linked to others before or after it in syntagms and is part of a paradigm of choices.
- Strata: meaning is realised in the strata of lexis, morphosyntax, and phonology/graphology; see Chapter 2, §5. (Those strata are not fully systematic; see Chapter 6, §3.)
- Layers: the layer of content-structure semantics (Chapter 2, §2.3) is superimposed on the layer of syntagmatically structured semantics (Chapter 2, §2.2); hierarchic structures are superimposed on the underlying network structure (Chapter 2, §6).
- Where the principles just listed have developed in ways that breach their own system, the changes have worked in systems of their own, such as specialisation and differentiation, according to cognitive or other mental distinctions (Chapter 6, §1).
- In addition to those formal systems, there is the informal system of cohesion (Chapter 2, §3.4).
- Underlying all the systems just outlined, there is simplicity. In virtually all

systems, there are only two or three units, which are themselves basic and simple. For example, there are two or three grammatical numbers, three persons, two or three tenses (for a multitude of possible times); hierarchic structural relations are either complementation, co-ordination, or subordination (Chapter 2, §2). Figures make a minor exception, since they may have four units (Chapter 2, §2.2); dimension structure (Chapter 4, §1) makes a major exception. In this theory, categories are simple, also, in that they are strict categories, not prototype classes, which would make interaction very complex indeed.

EXPRESSIVENESS PRINCIPLE

In comparison with other sign systems, such as those of naval signal flags and of Morse code dots and dashes, the semantic system is very expressive. That is, it carries out a very wide range of speaker intentions and realises a wide range of meanings, which can be simple or complex, vague or precise; in doing that, it can go beyond the immediate meaning or function, to evoke personal and social situations. That has come about through its adaptation to its many cognitive and human functions, aided by systematicity.

Expressiveness has resulted in the following features of language that would otherwise not be expected.

- Uses: speakers can give utterances different effect by choosing among different uses (Chapter 4, §2). Those uses rely on the minor principles of (a) markedness (a word or a structure can carry a meaning that contrasts with its default or "unmarked" meaning), and (b) being either restrictive/referential or descriptive (Chapter 4, §2).
- Parallel meanings: utterances can carry a second meaning, which is either additional and complementary, or emphasis on the first. Examples include words with both descriptive and emotive meanings and utterances with both content meaning and grammatical meaning that structures the content.
- Parallel functions: utterances can serve parallel functions, as noted earlier; for example, the ideational and interpersonal functions (Chapter 3, §2.1)

and the double function of syntax in simply arranging words in linear order, and at the same time carrying the significance of imperative or interrogative mood.

- Reconstrual: the most important of the many instances given in earlier chapters is the pattern in the semantic classes, where a type of cognitive percept (e.g. happening) is reconstrued as a sublexical type (e.g. entity) and reconstrued again as linguistic types (e.g. Entity and Participant). We must allow for reconstrual constantly in understanding everyday language, especially idiomatic usage; and it has been a constant feature of historical change. (See Chapter 2, §2.2, and Chapter 6, §4.2.4, for example; see also the development principle earlier.)

In the history of language, there has been so much development for the sake of expressiveness that it is easy to think of language as having an inherent drive towards it, like children's internal drive to learn language. It has been so great that it has created many inconsistencies, constraining the systematicity principle. For example, English has wave and field structures (Chapter 2, §4), which do not cohere with either hierarchies or networks; it allows holophrases, which are a gross breach of isomorphism (Chapter 2, §4); it has such a proliferation of words and word senses, and allows such flexibility in their use, that lexical ambiguity is frequent – syntactic ambiguity is also unfortunately easy. That has reached the point where Baldinger and Wright (1980: 142) could assert (citing Wandruszka) that Saussure was wrong in claiming that language is a system in which everything is consistent: they assert that it is a system of lacunae, adjustments, redundancies, deficiencies, and surpluses.

Recognition of these principles of expressiveness – and their exceptions – as regular and characteristic of language is one of the things that distinguish this theory from other semantic descriptions.

CONCLUSION: PRINCIPLES OF SEMANTICS

The principles have not been asserted as axioms on which the theory is based, as Euclid's geometry was. Their justification must lie in whether they arise from the observable phenomena, and whether they help to explain them; in what might be

called the "wave theory" of meaning (Chapter 2 §4), for example, they must be explanatory, as the wave theory of light is. Semantics arises in human beings, who are part of nature; it does not arise from axioms as in mathematics, or from first principles as in traditional philosophy. Thus, the principles have been offered as one way of seeing the nature of meaning, complementing the conventional view, which follows – an outline of the ideas that the principles underlie.

2.2 Summary, Chapter by Chapter

The meaning of utterances in English and other natural languages mostly consists of units related to each other in structures. One important structure is the hierarchy of senses, groups (in many languages), and figures, typically carried by the syntactic hierarchy of words, phrases, and clauses. A parallel hierarchy (Topic, Comment, and so on) carries guidance on how hearers are to relate the information from the other hierarchy to existing knowledge. The other important type of structure is the semantic network, which exists below the level of senses, and as incidental complexities in the hierarchies. Meaning not consisting of units is structured in waves (building to a climax, for example), or in fields (negation, taking scope over a whole utterance, for example; see Chapter 2.) In a few utterances, there is no definite structure (e.g. holophrases; Chapter 2 §4.4).

The units that are thus structured are senses, consisting of meaning of various types. Content meaning includes descriptive meaning (roughly, "conceptual meaning"), emotive meaning, attitudinal meaning, and social meaning. Grammatical meaning relates the elements of content meaning to each other; it is analogous to the operators relating variables, in mathematics; just as "4 + 5" in effect instructs readers to add four and five, so the grammatical meaning of "red books" instructs hearers to add 'red' to 'book', and to conceptualise 'book' as plural (Chapter 3, §7).

Senses of each type are structured by dimensions such as generality and vagueness (analogous to at height, length, and breadth), and by the use to which the sense is put – referential or descriptive, marked or unmarked (Chapter 4).

Senses are structured internally. The structure of grammatical senses is fairly simple, as with "Add 'red' to 'book'", just noted. Content senses have a structure

that allows them both unity and intricate widespread linkage ("bonding") to other senses. It varies according to whether their links are within a hierarchy or a network, providing bonding to other senses "horizontally" in the syntagm and "vertically" in their paradigms (synonymy and so on). It also varies according to the sense's semantic class – Property, Event, or Entity at group level, and Circumstance, Process, and Participant at figure level. This internal structure also explains the nature of compositionality, polysemy, and variation of meaning in context (Chapter 5).

Chapter 6 discussed several topics that are implicit in the previous chapters, showing how the material given previously illumines the topic, or vice versa. The topics were as follows: semantic change; semiosis; relations between semantics and the other strata of language; relations between meaning and knowledge; and the relation between meaning and reality. Suggestions for further research were given.

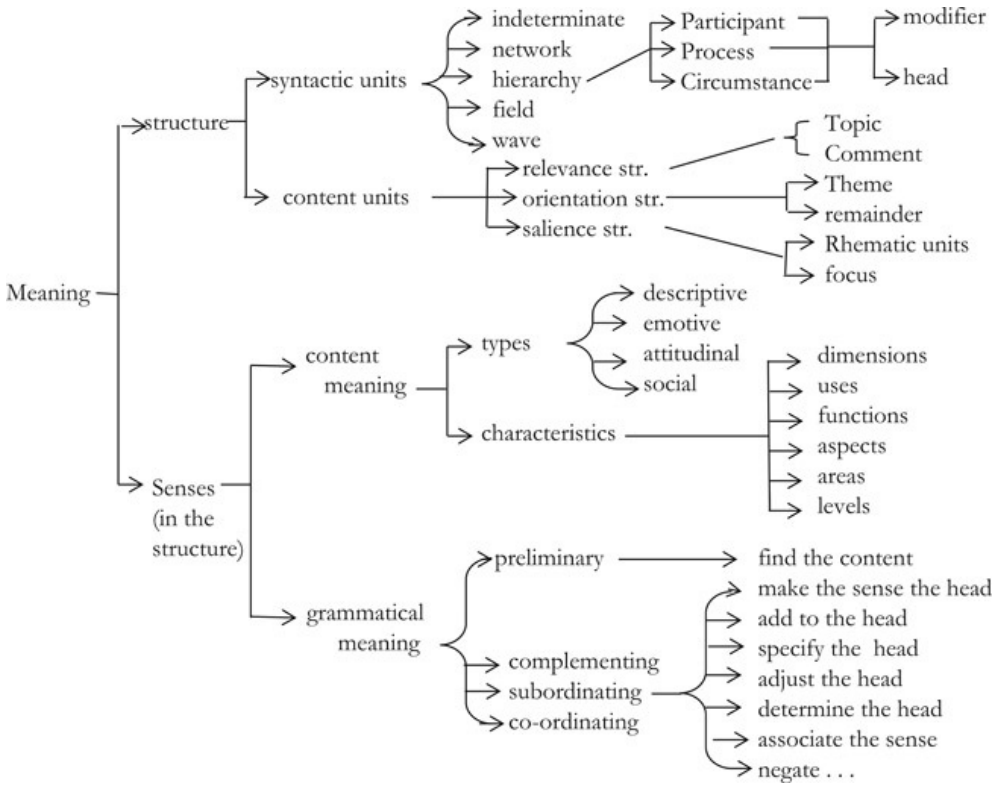


Diagram 7.1 Outline of the theory presented in the book

The content of the book – the theory of semantics presented – is outlined as a

system in Diagram 7.1. It does not represent a classification, as it may seem to, but the system of semantics, presented as the series of choices that speakers make, as they articulate their meaning. It follows the convention of Systemic Functional Grammar and is read from left to right, as follows (for example).

- To express meaning, you must use both a structure and the senses within it. (The solid vertical line means "both … and …" – both items must be "chosen".)
- The structure consists of both syntactic units and content units.
- The syntactic units either are indeterminate forms or constitute either a network, a hierarchy, a field, or a wave. (The brace "{" means "one or more of" – the speaker does have a choice).

(The lowest level of analysis is not always specified, to avoid cluttering the diagram.) The diagram is not wholly satisfactory, but should be useful as a summary.

3 Methodology Used

3.1 Starting Point

WIDE READING

There are many natural starting points for semantic theorising, each with potential benefits but also risks. One that is much underrated is wide reading – reading that extends over different theories of semantics, work done in various parts of the world, and potentially relevant work in other fields. An example of inadequate reading is Riemer (2016b). Riemer asserts the reality and importance of non-conceptual meaning but has evidently not read any of the relevant British semantic work e.g. Leech (1974), Crystal and Davy (1969), and Cruse (e.g. 2011); as a consequence, presumably, he does not give any details of it and does not

mention it in his section on future directions.

STARTING FROM THEORY

Existing theory is both a natural start point and an almost inevitable one, but it comes with very serious risks. Early semantic work in the generative tradition suffered from the theory's over-strict separation of syntax and semantics; as we have seen, the restrictions on semantics caused serious misunderstandings but "owed more to methodology than to fact" (Matthews 1995: 31).

The main problem with starting from given theory is that the theory brings unexamined and unsatisfactory assumptions with it. Examples follow. Langacker's Cognitive Grammar assumes (Langacker 1987: 76) that symbols are all phonological, which suggests that all meanings are expressed in words. Many formally oriented semanticists assume that set theory is relevant to all semantics; but that orientation to reference disallows descriptive meaning. Most scholars assume that traditional thinking on the parts of speech is valid, and that a word's part of speech controls its semantics; hence, for example, the voluminous literature on "noun + noun compounds", which failed to see the basic truth that the first "noun" is a modifier, not part of a compound. The assumption that all linguistic structures have a head has prevented some scholars from seeing that figures are structured by complementation, not subordination.

USEFUL APPROACHES THAT HAVE BECOME EXCLUSIVE

Dependency theory, as in Hudson (2007), is built on the concept of subordination ("dependency"), which is essential to semantic theory; but the concept has been applied much too widely, to the exclusion of coordination and complementation. (See Chapter 2, §2.2.3–2.2.4.) The stimulating analogies between maths and language (as in compositionality) and between logic and language have often led to undue narrowing of semantics.

CONCLUSION: METHODOLOGY

A useful theory must be built using a variety of starting points, and a variety of approaches – synchronic and diachronic, static and dynamic, pure and applied, qualitative and quantitative. That will help to ensure it is comprehensive, to maintain balance, and to limit unjustified assumptions, all of which this book has aimed at; and it must be supported by appropriate data – to which we now turn.

3.2 Data Sources

INTROSPECTION

It is inevitable that we use introspection for checking our own understanding, and for checking what we read of others' theories; it is also a more valid method than is obvious, since using language is a matter of skill, as well as a matter of applying rules. Since introspection is fairly obviously liable to error, however, its results must be checked against objective data. That does not happen always: Ruiz (2015) gives "terribly excellent" and "He is a stupid brain" as standard examples of oxymoron, without support; the Corpus of Contemporary American English, however, has no instances of either.

INFORMANTS

Data from informants is often necessary, especially in field work. However, it too has serious risks: questioning may be biased by invalid assumptions in the questions; informants sometimes report what they think they say, rather than what they actually say; they may be unreliable, in that they give different answers on different occasions, and in that data from informants is often different from data recorded in discourse (DuBois 1985: 347–348). This book has not used data from informants.

CORPORA

It is now essential to use data from corpora, even if only to check other data. One example of omitting it was just given; another one follows. Bouchard (2002: 188) says, in discussing the order of premodifiers, that "small black" can be reversed straightforwardly, giving contrastive focus on *small*. But the Corpus of Contemporary American English has 494 occurrences of "small black", and only three occurrences of "black small", none of which are contrastive and all of which change the sense of the words. Using the corpus corrects Bouchard's introspective data and makes clear an important fact he missed. This book has not cited corpora very often, being concerned with what is possible rather than what is frequent, and I have preferred to use examples from texts I have read, to ensure that my analysis allows for context fully; when typicality is important, it has generally been checked against the Corpus of Contemporary American English or the British National Corpus.

PERSONAL OBSERVATION

The importance of personal observation as a source of data is very much underrated, I believe; it is important in a number of ways. As just noted, we should be sure that analysis of examples is true to context. It should be used to fill gaps in corpora; for example, my work on the order of premodifiers (Feist 2012) found several important facts in advertising, which was poorly represented in the corpora, and in technical engineering, which seems to be absent from them. Theories of case are, I believe, seriously weakened by their authors' not knowing that Russian has two genitives – a fact that Jacobson (1936/1990) or a predecessor must have induced from personal observation. The writers who thought that the first words in "art director" and "Japan team" were not modifiers (because they are nouns) would surely have thought differently if they had reflected on their own experience of "artistic director" and "Japanese team", which are synonymous and obviously do have modifiers. Most of the original analysis in this book derives from reflection on my own observation of what I hear and read in daily living.

OTHER SOURCES

There are several other sources of data, which need little comment. Fairly obviously, for psycholinguistic and neurolinguistic approaches to semantics, experimental data can be crucial. Dictionaries are useful, for both supporting data and material to critique. Cross-linguistic data on semantics is useful in principle, but I have not found published material to be very useful in this research, since it gives only cognitive meaning, and skimps semantic structure. (I do not have enough fluency in other languages to rely on introspective data.)

CONCLUSION: DATA

A theory such as the one set out in this book argues by validation of hypotheses, rather than by inductive argument, so the data need not be quantitative or extensively based on good corpora. However, they should be wide-ranging, true to context, reasonably copious, and above all convincing; I believe that my data fit those criteria.

4 Explanation Provided

Explanatory power has been treated here as the most important criterion for a theory, so this section is extensive.

4.1 Explanation Within Semantics

The previous section has dealt with the descriptive part of semantic theory; more important than that is the explanation provided. I claim that this theory has a great deal of explanatory power. That comes primarily from the distinctions drawn where other semantic theory is confused. This section identifies the main explanatory concepts (most of them distinctions) and illustrates their effect afresh, as a reminder of what they have explained previously.

SEMANTIC/MORPHOSYNTACTIC

This account treats meaning as the significance of signs; "grammatical words" signify grammatical meaning, as with *the* signifying that the phrase is to be definite, and the number and person agreement in "He goes" signifies that "he" is Subject. The significance is semantic; the forms, as signs, are morphosyntactic.

The semantic/morphosyntactic distinction used here has helped greatly in clarifying much confusion in traditional linguistics. Quirk and others' discussion of lexical verbs (1972: §3.41) provides an almost random example. It gives some insight and proper explanation, indicating that the explanation is semantic; that is, in part "[A]" of §3.41, some types of "dynamic verbs" are said to "indicate", "imply", or "suggest" certain things, which entails meaning. However, in part "[B]", we are told that some of the same verbs belong to other classes; since it is verbs (i.e. words), not senses, that belong to other classes, the distinction cannot be semantic. That book is about "grammar", so the distinction is presumably "grammatical" (i.e. morphosyntactic): the distinction between semantics and syntax is confused.

The distinction made in this book shifts the relation between semantics and "grammar" or morphosyntax a little, but makes explanations clearer and more consistent.

LINGUISTIC/COGNITIVE

That problem is related to the distinction between the linguistic and the cognitive, which has been insisted on throughout this book. The distinction between the semantic and the syntactic is easier to draw when we exclude cognitive meaning from strictly linguistic discussion. The section in Quirk and others just discussed distinguishes "activity verbs", "process verbs", and "verbs of bodily sensation" within "dynamic verbs"; but it does not show – cannot show, I believe – how those verbs differ linguistically. An important element of the linguistic/cognitive distinction here has been the requirement that, for "meaning" to be linguistic, it must be correlated with a distinction in the linguistic system; otherwise it is cognitive and a matter of knowledge, rather than of semantics

understood strictly.

SEMANTIC CLASSES

Previous chapters have shown the importance of distinguishing semantic classes properly, particularly in understanding the difference between "nouns" and "verbs" as units in a phrase, and as the heads that relate phrases in a clause (see Chapter 2, §2.2). The distinctions illuminate minor puzzles as well as major ones. Quirk and others (1972: 193, note [b]) observes that "John is a (big) flouter of authority" is acceptable, but "John is a flouter" is not, treating the difference as a matter of idiom. But recognising that a word can have elements of two different semantic classes shows that a straightforward semantic principle is involved (*flouter* has an Entity element relating to the indefinite article, and an event element taking *authority* as its Complement).

CLASS/FORM/FUNCTION

The distinctions between a word as a morphosyntactic form, its semantic class, its morphosyntactic function, and its semantic function have been used repeatedly to clarify confusion. A final example: Quirk and others (1972: §4.9), discussing words in *–ing*, gives a long list of the uses of *painting*, which is said to constitute a gradient; however, clear-cut distinctions can be made when it is recognised that the class, form, and function can change one at a time along the "gradient" – and that the same form and function can go with two or three different classes, for example.

The relation between form (or "structure") and function is commonly treated simply as correlation; but as Givón points out (1992: 307), "The correlations are most often skewed; they are much stronger – or predictable – in the direction from function to structure, but considerably weaker in the opposite direction from structure to function"; and they need explanation. For example, there is a correlation between Subject – Predicator inversion and interrogative mood; but inversion does not reliably signify the interrogative. It often signifies information structure (as in "Came another short one, then something of full length, which

Smith crashed to the cover boundary" (British National Corpus, in a cricketing commentary), where the Subject is put after the Predicator, to put it in focus. Similarly, Subject–Predicator inversion often heightens formality (as in "The children became frightened and ran home. Came 6 o'clock and all the other guards reported to HQ and were dismissed" (British National Corpus). On the other hand, the predictability of inversion from the function of creating interrogative mood is much greater.

That principle is a formulation in theoretical form of the power of the explanations given regularly in this book in terms of phonological, morphological, or syntactic signs as expression of semantics.

USES: MARKED/UNMARKED AND REFERENTIAL/ DESCRIPTIVE

The distinction between the literal and figurative use of words has been recognised for a couple of millennia; it has been very useful to generalise the distinction to that of marked and unmarked use. That distinction then resolves many muddles, as we have seen: situations where things are thought to be "likely" to occur, or "characteristically" this, or "normally" that, commonly resolve into a marked and an unmarked use. To give a final and minor example: words such as *understand*, which "do not normally occur in progressive aspect" (Quirk and others 1972: 96), do occur "normally" in the progressive[1] (shifting the meaning of *normally*), in marked use – marked and unmarked uses are both "normal" (i.e. 'established in the system'). As we have seen repeatedly, the marked/unmarked distinction has also frequently resolved the problems of what are thought to be "prototypes", providing real explanation as well. The referential/descriptive distinction is less striking, but perhaps more pervasive, and it has unified a number of apparently distinct phenomena.

DIMENSIONS OF MEANING

As well as providing a simple and lucid way of understanding the relations among synonyms, distinguishing the dimensions of meaning resolves much of

the long-standing problem of prototypes. In meanings that are taken as prototype concepts, the core properties (e.g. 'has wings', in the bird prototype) are better understood as necessary or expected elements on the expectedness dimension), and "peripheral" properties (e.g. those of colour and size, for BIRD) are better understood as possible elements. (Prototypes in knowledge – such as those of colour – are not our concern.)

TYPES OF MEANING

The distinctions among the types of meaning have been used chiefly for small-scale phenomena, such as differences among synonyms and how meanings change. Here, we may note the large-scale phenomenon that the meaning types make the link between semantics and the functions of language: social meanings provide for social functions; grammatical meanings provide for individual content senses to be integrated into a text, for the ideational function, and so on.

CONSTRUAL

The final explanatory concept to be noted underlies many of the distinctions above: construal – the process of changing something's form or function, while retaining its substance. We construe the dimensions of a sense according to context; and sense relations depend on how we construe the senses. Using meaning figuratively, and using it in other marked forms, both use reconstrual. More important, construal explains the following: relations between semantic classes on different levels (e.g. entities are construed into Entities, and reconstrued into Participants); changes in semantic class on the same level (e.g. nominalisation from Event to Entity), and relations within a class (e.g. count, mass, and abstract Entities). Above all, construal characterises the difference between the cognitive and linguistic: children first construe words they hear as names (e.g. "Dolly"), then reconstrue the names as words for descriptive categories (e.g. "dollies"), then keep reconstruing senses and structures towards linguistic dominance, on Gentner and Boroditsky's scale. Indeed, construal characterises the very difference between knowledge and language: knowledge is

fixed, but we can construe language according to situation and function.

Developmental psychology supports that thinking. As noted in Chapter 5, §2.2.3, Karmiloff-Smith (1992) describes how children "re-describe" mental "representations", making them explicit, more abstract, and more flexible in use. As children mature into adulthood, that happens repeatedly to representations of all kinds, including mathematical concepts, words, linguistic structures, and representations used in motor skills. (Construal is a general mental process, not a specifically linguistic one.)

DISTINCTIONS NOT MADE

Finally, I draw attention to several distinctions that have not been made. The book has never used the distinction between prototype and other meanings to explain anything. It has simply not been needed. That is completely natural. In a prototype, none of the (say) half-dozen elements is necessary – Hudson (2007: 162–163) gives eight criteria for a "complement"; and each of those criterial elements has its own probability of being relevant in a particular use; the complexity of calculating all the probabilities seems to make using such classes impossible in the fast and reliable processing of everyday language. (Prototypes in non-linguistic cognition are more practicable.) Croft and Cruse (2004: §4.3.4) have a useful general discussion of the problems of prototypes.

Second, the book has not explained anything structural by distinguishing between regular occurrence and usual occurrences or tendencies. Third, it has not used a distinction between categorial differences and gradience. Both variation in occurrence and gradience must be noted in description, but the book has sought go beyond description to explanation and rigorous theory, and nowhere in the theory has gradience been needed. Where gradience can be seen in abstract description, real-life processing of language imposes boundaries. That is how senses in descriptive uses gain distinctness (Chapter 5, §2.3.2) and how the gradient of abstractness in premodification is resolved into Epithet and Descriptor categories (Chapter 2, §2.2.4). (The process is in one respect familiar: the gradience of voltage in computer bits between 1 volt and 0 volts is resolved by setting an arbitrary dividing line: less than.5 volt = 0;.5 volt or more = 1.)

SOME OTHER IMPORTANT ISSUES THAT HAVE BEEN RESOLVED BY THE USE OF THESE DISTINCTIONS

Other important issues that have been resolved by using these distinctions include the following.

- Compositionality (by using grammatical meaning as the means of composition).
- "Encyclopaedia" versus "dictionary" (by the cognitive/linguistic distinction).
- "Content item" versus "grammatical item" (by the distinction between content and grammatical meaning).
- Contextual variability (by types, dimensions and uses).
- Parts of speech (by semantic class distinctions, and the class/form/function distinction).

4.2 Explanation From the Other Strata

I claim that the book provides further satisfying explanation of semantics by showing clearly and fully how it is related to the other strata. The explanation has been twofold: (a) semantics is realised into words, which is realised into morphosyntax, which is realised into phonology or graphology; (b) each of those strata is also used semiotically (realising meaning directly from the semantics title), providing signs of different types, and different kinds of significance. (See Chapter 2, §5, and Chapter 6, §3.)

There has been, I suggest, an extra benefit in providing explanation of those other strata. We see syntax, for example, as a structure of alternating grammatical and content signs, just as mathematical and scientific formulae are structures of variables and operators. We see phonology, not as sounds that merely happen to be necessary for communication, but as another series of signs, in a unique segmental and suprasegmental combination. Finally, we see all of the strata as not only conveying a message, but as guiding hearers in how to evaluate the message and relate it to their existing knowledge.

4.3 Explanation From Other Fields of Linguistics

LANGUAGE ACQUISITION

The nature of children's acquisition of language helps explain a number of features of semantics, and my use of it partly explains the difference between this account of semantics and others.

The fact that the first stage in children's language – cries – is entirely phonological, without vocabulary or syntax, helps explain why phonology is so important in the realisation of meaning. Their cries are Expressive; their earliest language serves their personal needs, both practical and interpersonal; that helps explain the centrality of function in this theory. The way their language then develops is largely additive: obviously, new words are added, but also descriptive elements are added to the necessary elements in particular senses, linguistic elements are developed after cognitive elements, and marked uses follow unmarked ones. That underlies the use of the distinctions that are crucial to this theory.

Other change is not addition as just described, but differentiation into more complex and fully specified structure, as with toddlers' holophrases especially, but also with under-specification. Similarly, the types and dimensions separate gradually. That helps explain the importance given to differentiation in this theory, contrasted with the usual emphasis on fully specified structure. Since childhood development often recapitulates the development of the species, that gives powerful evidence for how language has developed.

SEMANTIC CHANGE

Both the semantic change section (Chapter 6, §1) and the word histories scattered through the text have helped explain sense structure, since the gradualness of semantic change has consisted of change in one dimension, meaning type or use at a time. It has also supported the importance given to functionality, since change in language is often a response to change in needs.

SOCIOLINGUISTICS

Sociolinguistics has been given very little attention here, since it relies on sociological rather than linguistic knowledge. However, we may note that it contributes to the emphasis in this theory that semantics cannot be equated with the communication of knowledge, and the consistent emphasis on interpersonal as well as personal meaning.

4.4 Explanation From Fields Outside Linguistics

In any field of knowledge, explanation may depend on facts from related fields. The biological processes in the nerve cells in the brain, for instance, are in fact chemical and physical processes; so some biological explanation depends on chemistry and physics. Similarly, this theory has continually adduced evidence from related fields.

Semiotics has been important, explaining what I have asserted to be the fundamental nature of meaning, as well as the way it is expressed and structured, as in the relation of semantics to the other linguistic strata. The psychological sciences have been important; particular emphasis has been given to neurolinguistics, since the relevant research is not only relevant but is recent and apparently little known among linguists. It is particularly important for my account of meaning as fundamentally a network – the hierarchies and other structures of groups and figures are refinements of mental networks embodied in neural networks. The psychology of mental faculties has been used to explain the important differences in meaning types, and general psychology has been used for the basis of descriptive meaning and the relation between meaning and knowledge.

4.5 Potential for the Explanation to Be Formalised

A further argument for accepting the theory is its potential for formalising semantics with greater depth and subtlety than has been possible before.

To be formalised, a theory of semantics needs to have strict categories, not

prototypes or other overlapping classes. This theory does that, with its categories of meaning types and semantic classes, for example. The categories need to be arranged in a finite number of well-defined relations; here, the main relations are those of unit and subunit in a hierarchy (the ranks of sense, group, figure, and paratone), the three relations (complementation, co-ordination, and subordination) within the ranks, and the relations of grammatical meaning operating on content meaning (as in modification). That structure is largely that of systemic grammar, for which many computer implementations have been designed. See Levison and others (2013: 52), who list ten such applications.

5 Coherence With Other Fields of Study

Even where they are not explanatory, the known facts of related fields should be coherent with any theory being asserted. To many readers, the most important such field will be philosophy. I have repeatedly distinguished semantics from philosophy – logic, epistemology, and metaphysics – and insisted that semantics has sometimes been misunderstood by the intrusion of philosophical concepts. However, I have shown that they are related (through their common concern with knowledge and reality – see Chapter 6, §§4–5) and believe that I have not contradicted any widely held philosophical understanding, although I have not shown any close links.

To other readers, the social sciences will be more important. I believe that modern social understanding coheres well with the theory given in this book. The types of social meaning relate well to the geographical and class distinctions made in sociology; I have shown how semantics serves a number of specific functions discussed by social and anthropological scholars. I have based semantics in the intention to speak, and thus in the psychology of motivation.

6 Relation to Previous Semantics

INTEGRATION OF OTHER APPROACHES AND EMPHASES

In this book, the various approaches and emphases used in previous semantics have been seen as complementary, just as the plan and various elevations of the building are complimentary. It has used structuralism in its use of systems comprising paradigms and syntagms. It has drawn on conceptual semantics (e.g. Jackendoff 2011) in its analysis of descriptive meaning and on Cognitive Grammar in its emphasis that meaning resides in the mind and uses mental processes, including most of the mind's faculties. With the generative lexicon of Pustejovski (1995), it shares a structured analysis of word meaning; and it shares the distinction between cognitive and linguistic meaning with two-level semantics (e.g. Bierwisch and Schreuder 1992), and much work on the dictionary/encyclopaedia distinction. It has used functionalism to unite all of those, somewhat as evolutionary understanding unifies all approaches to biology. Finally, it has used historical and comparative study to complement synchronic analysis. That integration is an important strength of the theory, I believe.

The book has used formal semantics as a contribution to theory, treating it as an application of theory. Logical and philosophical "semantics" have been seen as divergent lines of study, diverging from what is strictly linguistic.

ADVANCE ON PREVIOUS SEMANTICS

That synthesis of work on semantics has been advanced, I suggest, in various ways. Understanding of the senses has been extended by the analysis of meaning types, dimensions, uses, and bonding. That has shown that we gain a better understanding of language if we extend traditional "meaning" to broader "significance". The major problems of the relations between content and grammar, and between word meaning and sentence meaning, have been resolved. The use of semiotics has contributed to those advances, and to less important ones. In all those ways, the theory is, I believe, more thoroughly linguistic than previous work, which has not been fully freed from various philosophically oriented traditions.

Cross-linguistic semantics has been taken beyond recording differences in

descriptive meaning. Consistent use of neurological understanding has given new support to linguistic theory, to show that the semantic processes outlined are also the way the mind works.

The theory is comprehensive in setting out the semantics of the varieties, uses and functions of language. It provides clear, consistent, and well-grounded explanation of significance in language.

Note

1. Corpus of Contemporary English has 35 examples, such as "If I am understanding you correctly…"

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