

The Interpretation of English Noun Phrases
with Particular Regard to
Generic Reference

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By

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ABSTRACT

Within a relevance-theoretic inferential framework, the present corpus-based study offers an explanatory account of how English noun phrases are interpreted in discourse with particular regard to generic reference. Relevance pragmatics pays special attention to the process of discovering the proposition expressed by an utterance as a direct speech act and therefore it provides us with tools to explain how the interpretation of noun phrases contributes to the recovery of the proposition, especially how inference is being carried out. Two sets of features developed in this thesis capture the mechanism of interpreting NPs in general and generic reference in particular. One set applies to nominal expressions which belong to a discoursal network, specifying their relations and thereby enabling us to establish the network. When the NP in question is an introductory expression, another set of features, which has therefore become more important, is used to indicate the clues used in establishing a mental representation of its interpretation. With the help of these two feature-based systems, cognitively significant clues to the interpretation of an NP and its discoursal relations can be caught, including those for deciding whether a certain NP is to be interpreted generically or not. This study also investigates the four types of generics discussed in the linguistic literature: member generics, class generics, sub-class generics, and the generic use of pronouns. With the help of the one-million-word ICE-GB and other authentic sources, a comprehensive classification of discoursal relations and types of generic referents is established, which will serve as a basis for future research.

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Chapter I

Introduction

1.1 sources of data

In the present study I have made use of data from the British component of the International Corpus of English (ICE-GB) collected and analysed at the Survey of English Usage, University College London. The corpus consists of 200 written texts, marked by 'W', and 300 spoken texts, marked by 'S'. Each text, consisting of approximately 2,000 words, has a label such as 'W1B-001' or 'S1A-001' encoding the text type and the extension after the label, as in 'W1B-001-10', is the number of a text unit, the basic unit within a text. I have supplemented the million-word corpus by quoting extensively from other sources, such as newspapers and books. I have also quoted from the Survey Corpus (SEU) and Longman Spoken Corpus.

1.2 the purpose of the study

The present study distinguishes itself in several aspects from previous treatments of noun phrase interpretation in general and generic reference in particular. First, the hundreds of examples that I have analysed in this book are drawn from a wide range of authentic sources, including a scientifically designed corpus of contemporary British English, as opposed to most examples used in the past research, which were invented by philosophers or linguists. In the study of generics, the only existing papers analysing authentic texts are Dahl (1988) and Link (1988 (1995)), who have both dealt with the same text of less than 1,000 words. As a result, the present corpus-based study has revealed many new findings, especially with regard to the variety of interpretation of noun phrases and their discourse relations.

Secondly, the present study has adopted a recent pragmatic framework: relevance theory, developed in Sperber & Wilson (1986 (1995 2nd edn.)) and many other publications by relevance theorists (e.g. Carston 1988a; Blakemore 1995, etc.). In particular, I have adopted the relevance view on the division between semantics and pragmatics, which allows me to elaborate the inferential processes involved in the interpretation of noun phrases. Studies on generics are usually done within a formal semantic framework (cf. Carlson & Pelletier 1995 eds.) with the exception of Declerck (1991), which has made an attempt in a pragmatic framework. My study shows the advantage of the explanatory power of relevance theory over not only a formal semantic approach but also the classical Gricean views, which Declerck has adopted.

Thirdly, I have described explicitly the inferential processes involved in the interpretation of noun phrases, which past researchers have either ignored or taken for granted. In the framework of relevance theory, language comprehension is an activity involving risks. Only when the addressee has access to the context intended by the communicator and then processes the given utterance in this context, can he reach the intended meaning conveyed by the utterance. Many philosophers and linguists discuss different readings of an invented example, but in actual communication ambiguity is usually resolved by the context, so that the interlocutors are often not aware of the ambiguity. With my examples from authentic materials, I have been able to specify the contextual clues that the communicator expects the addressee to gather and the inferential process that the addressee employs in recovering the intended interpretation.

Fourthly, researchers on generics often presuppose the generic status of an expression in their discussion: they often take it for granted that a certain noun phrase in a statement is generic. In fact, no matter how obviously generic a noun phrase in a statement may appear, the judgement is always the result of pragmatic inference. I have shown various routes the addressee may take in interpreting noun phrases. Since generic expressions can take various forms, it is necessary to show how people reach a generic interpretation of an NP, instead of, say, a specific one, with the help of contextual clues and general knowledge expected of him by the communicator. I have dealt exhaustively

with the major patterns for interpreting all types of NPs and commented on all the uses of NPs documented in the literature.

Fifthly, my present study is the widest in coverage. Past treatments of generics fall into two groups. One type of treatment is comprehensive but relatively simplistic, such as those we find in major reference grammars (e.g. Quirk et al. 1985:5.52-5.57) or encyclopedias of philosophy (e.g. Heyer 1991) and linguistics (e.g. Krifka 1994). The other type is a study in depth but with a focus on some areas of generics, such as the articles on generics which I have quoted throughout the thesis. The only volume devoted to generics is *The Generic Book* (Carlson & Pelletier ed. 1995), which tackles the issues from a semantic point of view. I have combined the strength of all these works together with new insights gained from adopting a pragmatic framework and through examining authentic material. In explaining the interpretation of English noun phrases, I have developed the approach adopted in Rouchota (1992; 1994a and 1994b), which attempted to apply relevance theory to this area. In discursal relations, this thesis continues the work in Halliday & Hasan 1976 and Martin 1992, resulting in a much more detailed system of English textual reference, which also shows the intrinsic relation between certain discursal networking patterns and the interpretation of the noun phrases involved.

Finally, this study intends to lay a foundation for interpretation and reference tracking of NPs in natural language processing. For this purpose, I have devised two sets of features for tagging noun phrases, though at present automatic tagging can only be applied to formal feature of NPs. These sets of features can be usefully employed in probing the meaning of noun phrases and the conceptual contents they represent.

1.3 the organisation of the chapters

Following the present chapter, the introduction, Chapter 2 is a summary of relevance theory, emphasising the parts useful to my present study; I also explain the inferential apparatus involved in the interpretation of noun phrases, drawing on results from related

disciplines such as cognitive psychology and philosophical logic. Chapter 3 gives an account of the formal features of English noun phrases and describes various discourse relations between noun phrases. Chapter 4 is devoted to discussing the interpretation of various uses of noun phrases and the cognitive and metaphysical nature of their referents. In chapter 5, I review the major studies of generics from early mentions to the most recent developments. Chapter 6 focuses on the relations between generic expressions in discourse as well as on explaining different kinds of generics. In the concluding Chapter 7, I summarise my findings and discuss their implications before pointing out directions for future research.

CHAPTER II

Relevance Theory and Apparatus for Inference

2.1 relevance theory - the pragmatic framework of this thesis

Sperber and Wilson have developed relevance theory to explain human cognitive and communicative behaviour¹. The theory incorporates an account of human verbal communication, which is based on Grice's (1975; 1989) insightful observation of the importance of inference in utterance² interpretation but which is different from his theory in several fundamental ways. From a psychological point of view, inference in utterance interpretation can be regarded as consisting of computations of mental representations, which are constrained by the (second) principle of relevance (cf. 2.1.2). I now present an outline of relevance theory as the basis for a relevance-theoretic analysis of noun phrase interpretation in English.

2.1.1 our cognitive activity is relevance-oriented

In order to survive and maintain our well-being, we constantly modify our beliefs about the world³ according to our understanding of it. For example, I wanted to take a short cut to some place and then found out on the way that it was blocked. Consequently, I had to take an alternative route. On my way back, I wouldn't attempt to use the short cut unless I was informed that it had been cleared. In this case, I would naturally use the newer information about the short cut (i.e. it was blocked) to avoid wasting my effort for the second time.

In theory, anything in the world may be an information source for us. But in practice we only respond to a tiny sub-set of the entities in the world, depending on

whether we think they are significant enough to us or not on a particular occasion for a particular purpose. Walking along the crowded Oxford Street in London, I wouldn't pay as much attention to cars running in the middle of the road as I would to people moving around me since in that situation I have much more chances in bumping into pedestrians than into cars. Only when I wanted to cross the road would the traffic condition become more useful to me for the purpose.

2.1.2 relevance in ostensive communication

We respond more readily to some of the information sources rather than to others. As Carston (1988b:59) pointed out, 'responses to these are frequently of survival value and reflect a relevance-directed adaptation of the perceptual system'. A suddenly-occurring loud noise, a flashing light or a pungent smell will normally alert our sensory system and attract our attention because historically they might have been proved indications of threats to our lives. In a similar way, we respond to utterances because we know they are instances of ostensive behaviour⁴. Ostensive behaviours are intended to guide the addressee's attention to something worth paying attention to. Just as we would respond naturally to a friend's beckoning us at a distance by following her non-verbal instruction, so, too, would we willingly spend some effort in processing the utterances addressed to us, believing that there is enough relevant information for us to recover in them for our own benefit. Such a reaction need not be even conscious.

In the process of developing into an efficient information-processing animal, humans have acquired a cognitive mechanism that does not want to expend effort without expecting to gain some effects in return. The communicator who hopes to make communication successful has to have something on offer when she⁵ requests the addressee's attention and expects him to make an effort to process her utterance. She needs to form her utterance in a way that will ensure its efficient interpretation because her objective is the smooth transfer of her intended meaning⁶. As a result, the addressee

is given a guarantee that he will gain adequate cognitive effects without wasteful effort. This prevailing phenomenon in human communication is generalised in the (second) principle of relevance:

[1] . . . every act of ostensive communication communicates a presumption of its own optimal relevance. (Sperber & Wilson 1995:266f)

However, a gesture of invitation could turn out to be a hoax and, similarly, one could fail to achieve cognitive effects from processing an utterance for various reasons. The principle of relevance does not claim that successful communication will occur in every instance. Instead, it explains what most people do most of the time since we do seem to be able to exchange our meaning with other people most of the time in a manner which is accurate enough for our purposes. Despite the fact that practical jokes are often played among people, their positive responses to ostensive stimuli (i.e. any communicative behaviour appealing to an individual's attention) are the norm: they still respond for the first few times to the shepherd boy who cries 'Wolf!'.

2.1.3 how is relevance defined, achieved and measured?

According to Sperber and Wilson, relevance is technically defined in terms of cognitive effects gained and mental effort spent during the processing of a piece of new information. Let's look at the effects first. A newly presented piece of information achieves relevance when it produces contextual effects through interacting with the receiver's mental context (cf. 2.1.6). Among contextual effects, the type called contextual implication is the most important because it is the result of our reasoning with the new information as well as the accessible information used as the context.

Imagine that you are strolling along a dark country road with a friend, and your friend, who you believe is an experienced hunter, says to you:

[2] Look! There's a wolf over there.

Suppose the following set of assumptions [3] are brought to your mind when you hear [2]:

[3a] Wolves are dangerous animals.

[3b] Encountering a dangerous animal is risky and should be avoided.

[3c] If I encounter a wolf, I'd better run to avoid the risk.

When you combine the new information [2] with your own assumption [3c], you arrive at the contextual implication [4c] via a process such as [4].

[4a] If I encounter a wolf, I'd better run to avoid the risk. (the major premise: an existing assumption, [3c], used as the context)

[4b] I am encountering a wolf (the minor premise: a new assumption derived from the interpretation of your friend's utterance [2])

[4c] I'd better run to avoid the risk. (the conclusion: a 'contextual implication')

You will have further implications when you combine [4c] with further assumptions about the environment, possible places to run to and so on. On this particular occasion, [2] achieves relevance by influencing your beliefs (i.e. you have come to realise that a wolf is nearby and you have acquired an assumption that one way to avoid the present risk is to run) and implying plans for your action (i.e. to run to avoid the possible danger). It motivates you to act via a contextual implication, since neither [4a] nor [4b] alone can affect you in the way [4c] does.

The presumption of optimal relevance is related to both interlocutors in communication:

‘The ostensive stimulus is the most relevant one compatible with the communicator’s abilities and preferences’.

‘The ostensive stimulus is relevant enough for it to be worth the addressee’s effort to process it’ (Sperber & Wilson 1995:270).

It is easy to see how both of the requirements are met in this simple example. Under the circumstances, we can understand that [2] could easily be the most relevant utterance that the hunter friend could think of in achieving her goal that I described in the previous paragraph.

2.1.4 cognitive effects and processing effort

Information processing requires mental effort. We have to concentrate on what other people are saying; we have to decode linguistic forms, and we have to retrieve some background information from our memory as part of the context for inference. Most importantly, we have to infer conclusions from the interactions between what we have decoded and our mental context. These activities all require mental effort. Naturally we would not want to waste our effort and would demand some rewards for our expenditure of effort. If the communicator wants the addressee to process her utterance, it is also in her interest to assist the addressee to recover her intended meaning.

The cost of processing utterances first depends on how complex the utterance is both linguistically and logically. For example, the words and structures it contains can be common or uncommon and the concepts they represent can be simple or complex. Then there is effort involved in constructing the context, which depends on how difficult it is to recover the contextual assumptions needed to process the utterance: e.g. whether they come readily from a frequently retrieved mental schema or not. All these factors

affect the time spent and the degree of attention required in the processing of an utterance, which amounts to its total mental expenditure.

For example, it costs more mental effort to process [6a] than [6b] because [6a] is more complex than [6b] syntactically as well as more demanding than [6b] cognitively (e.g. the complicated brand names and so on).

[6a] ‘... lining up my Mongol number 3 pencils on my Goldsmith Brothers Formica imitation-wood desk, I slide into my oversize squirrel-skin L.L. Bean slippers ...’
(from Rosch 1978)

[6b] Lining up some pencils on the desk, I put on my slippers.

The comparison between [6a] and [6b] shows that there are some ways to decide whether one utterance is more costly to process than another. Though there are occasions when people are not capable of expressing themselves clearly and thus put the addressee to some unjustifiable effort, the norm is that extra effort deliberately demanded by the communicator indicates extra effects. As [6a] shows, its writer puts a reader to extra trouble in order to achieve some special effects that [6b] lacks, e.g. the brand-name snobbery of the character being described.

To sum up, Sperber and Wilson’s notion of relevance involves the effort spent in processing information as well as the effects gained in the process:

[7] ‘(a) Other things being equal, the greater the contextual effect achieved by the processing of a given piece of information, the greater its relevance for the individual who processes it.

(b) Other things being equal, the greater the effort involved in the processing of a given piece of information, the smaller its relevance for the individual who processes it.’ (Wilson & Sperber 1988b:109)

2.1.5 inference with context

The meaning that the communicator wants to convey by an utterance is usually far richer than what is encoded in the utterance. The addressee complements this deficiency of language with inference as an integrated part of the interpretation. We interpret an utterance in a certain context, which we construct in order to retrieve the intended message (cf. 2.1.6). The same sentence can be interpreted differently in different contexts.

For example, on the level of the proposition expressed, both [2a] and [2b]⁷ are compatible with [1], which was allegedly uttered by Derek Bentley to Christopher Craig, who at that time killed a policeman with a shot⁸:

[1] Let him have it.

[2a] Discharge a firearm at the policeman.⁹

[2b] Allow the policeman to have the gun.

The above example shows that the same sequence of linguistic forms can be used in differently intended contexts to convey different messages.

On the level of specific conversational implicatures (cf. Grice 1989:39), both [4c] and [5c] are compatible with [3], a comment from one of Mrs. Thatcher's radio interviews (borrowed from Smith & Wilson 1992:3):

[3] I always treat other people's money as if it were my own.

[4a] Mrs. Thatcher always treats her money very carefully. (The contextual assumption assembled)

[4b] Mrs. Thatcher always treats other people's money as if it were her own. (The utterance in question)

[4c] Mrs. Thatcher always treats other people's money very carefully. (The contextual implication achieved)

[5a] Mrs. Thatcher always treats her money in any way she likes. (The contextual assumption assembled)

[5b] Mrs. Thatcher always treats other people's money as if it were her own. (The utterance in question)

[5c] Mrs. Thatcher always treats other people's money in any way she likes. (The contextual implication achieved)

How does the addressee recognize the interpretation intended by the communicator if such widely different interpretations are all possible? Pragmatics comes in at this point to explain how people cope with such indeterminacy.

In Bentley's case the jury members made their judgement according to the evidence available which could show his intention towards the police and [2a] was preferred as the interpretation of [1]. The interpretation was reached via inference with evidence available to the jury and the jury members' beliefs, not straightforward semantic decoding.

In Lady Thatcher's case, if we generally agree that treating public money carefully is a virtue and people like to be seen as virtuous, then we would naturally choose [4c] as the preferred implicature. Such a decision has been made only because we have the above general assumptions as the background premises; the encoded content of [3] is open to both implicatures [4c] and [5c].

In an encoding-decoding model of communication, the key to the code guarantees the interpretation, like in the case of using Morse Code to transmit messages. An inferential model of communication like the one I have adopted in this thesis implies that if the addressee fails to process an utterance in the context intended by the communicator, then he might still not be able to understand the communicator even though he can decode the linguistic forms perfectly. Pavarotti's following scenario with Princess Diana illustrates this point:

[6] I like food. I was at a dinner party in New York with the Princess of Wales. We all ordered different things from the menu and she had broiled shrimp that looked wonderful. I said to her: 'Princess, those shrimp must be very good, yes?' She said they were excellent.

Later I said again that they must be really delicious. She smiled and nodded enthusiastically. Finally, I said. 'Listen, I tried twice with no success. Now I ask you directly. *May I have one of your shrimps?*'

She got very flustered and apologetic. 'I'm sorry . . . I didn't realise.'

(extracts from *My World* by Luciano Pavarotti, London: Chatto & Windus 1995; The Sunday Times 3 Sept. 95)

Obviously, Diana understood the proposition explicitly expressed by the underlined utterance in [6]. However, Pavarotti was using it to imply a different proposition, the one expressed by the italicised utterance in [6], which, as Diana admitted, she didn't realise. Diana failed to interpret the underlined utterance in a context intended by Pavarotti, something like [7]:

[7] If a person shows excessive interest in one's food, then it is very likely that she / he also wants to try the food.

If the communicator is held to be more responsible for any failure in communication, then in the case Pavarotti overestimated Diana's ability to access [7] because she was not 'used to sharing her food'.

Sometimes, the intended context may be deliberately implicit so that the communicator can avoid the responsibility for certain serious consequence.

[8] People close to Clintons were aware of other women in Bill's life . . . He went 'jogging' on improbably hot and humid days. On one such occasion, an Arkansas state trooper assigned to his security detail asked Clinton how far he had run that day. 'Five miles,' Clinton replied. 'Well, sir, you need to see a doctor,' the trooper said. 'There's something wrong with your sweat glands.' (Extract from *Blood Sport* by James Stewart, London: Simon and Schuster 1996, *The Sunday Times* 10 March, 96)

If at that time Clinton was not sweating and if he knew that the trooper didn't doubt about the function of his sweat glands, then the trooper would be implying that Clinton was not jogging but doing something else he didn't want to tell the trooper. Since the second condition could not be proved, the trooper could well claim that he was only showing his concern about the health of the Governor.

2.1.6 constructing context in interpretation

Before dealing with the general pragmatic criterion used in utterance interpretation, I want to clarify the notion of context. An utterance is always processed in a mental context, which is psychologically defined as 'a set of assumptions actively entertained at the time' (Carston 1994a:695; cf. also Sperber & Wilson 1986:15). Such a context is formed by assumptions coming from several sources. They can come from the

addressee's perception on the occasion, as in the case of interpreting the expression 'that spoon' in [12]¹⁰:

[12] Pass me that spoon, please. (One person at the dinner table speaking to another, who is sitting nearer the spoon.)

Or they can be assumptions retrieved from the addressee's memory, whether from long-term storage, as in the case of interpreting the expression 'the dog' in [13]¹¹:

[13] Peter to Mary (referring to the dog in the household): Is the dog in?

or from short-term storage, as in the case of interpreting the expression 'it' in [14]¹², which co-refers with the phrase 'one episode from *Uncle Oswald's diaries*' that the reader has just scanned.

[14] I have so far released for publication only one episode from *Uncle Oswald's diaries*. It concerned, as some of you may remember, a carnal encounter between my uncle and a Syrian female leper in the Sinai Desert. (The beginning sentence of 'Bitch', by Roald Dahl in *Switch Bitch*, Penguin 1976)

In all of the above cases, the contextual assumptions will help the addressee to infer the most likely referent of the underlined expression. If the addressee in [12] is blind, then he probably won't be able to get the required contextual assumption perceptually and will fail to identify the intended referent.

Part of the success in communication depends on the communicator's success in foreseeing the intended context that the addressee forms to process her utterance. A competent communicator will phrase her utterance differently to people with different social, culture or cognitive backgrounds to make sure that they retrieve the intended context and get intended cognitive effects. The following example illustrates the

communicator's consideration when talking to an audience with a different cognitive background albeit obviously parodying the language of sex talks of birds and bees. When asked by his five-year-old daughter why people go to restaurants and why the question made her mummy laugh, the father thought

Boy, was I embarrassed. How do you explain restaurants without frightening them, or making the whole deal sound ridiculous and disgusting? ('Table Talk', *The Sunday Times* 31/12/95)

And then, among numerous ways of describing the event, he chose the following for his daughter because of the above consideration:

'Well, when boys and girls grow up they get to know each other and when they're especially fond of one another, they go out to have dinner.' (ibid.)

On the other hand, a competent addressee will also try to process an utterance in a context which the speaker is most likely to have intended him to, as shown by the following example:

I was once present at a supper party where another guest was Moura Lympany, the distinguished concert pianist. Dame Moura, a delightfully bubbly lady, asked Ted - who was then Leader of Her Majesty's Opposition - what he had been up to.

Ted didn't launch into a tedious account of his political activities. He knew she meant his musical activities. So he told her he'd been to Aldeburgh to hear Richter play a Mozart sonata. . . . ('Last Laugh to Funny Old Ted', by Ian Aitken, *The Guardian* 7/13/96)

Some critics think that relevance theory is an asocial theory and therefore, '[t]he effect is highly ethnocentric; one is left with the impression that everyone lives in the

same kind of white, middle-class, educated world' (Talbot 1994:3526). Such critics don't seem to realise that 'asocial' and 'ethnocentric' are contradictory terms. Firstly, if some theory is asocial, then it doesn't mean that it cannot be applied to social phenomena. Mathematics is asocial but it can be used to explain social phenomenon such as the economy or population. Secondly, the examples in the relevance literature are aimed at its present audience, linguists, philosophers, and cognitive scientists, etc. So examples like knowledge of the weather, the pleasantness of sea air, and the price of cars are all familiar to this audience. As a result, they are most likely to draw the intended cognitive effects.

The significance of the relevance-theoretic definition of context is that 'the psychological processes involved in using the context in interpretation are the same whatever its sources' (Blakemore 1992:88). It can predict the results from the assumptions actually involved in processing a given utterance. People coming from different social or ethnic backgrounds may have different sets of assumptions available with different degrees of accessibility when processing the same expression. People also process the same expression in different contexts when they are under different circumstances and want to achieve different goals. Relevance theory doesn't prescribe what assumptions the addressee should assemble when processing an utterance. The situations used in the relevance literature all aim at showing in what contexts educated readers would reasonably be expected to process the example utterances since the audience are linguists and cognitive scientists and these situations are what they can empathise with. Relevance theory sheds light on what kind of context a member of such a social group would be most likely to retrieve and in turn what interpretation of the utterance would follow. If the communicator's social group changes, or the situation of the communicator changes, relevance theory will predict different resultant contexts and interpretations accordingly. This doesn't imply, as Talbot claims, that relevance theory is, as a result, 'a seriously inadequate provision of social context for a study of either communication or cognition' (ibid.). Examples can be ethnocentric but it doesn't follow that the theory itself is.

Dr Joad, a logician who used to host the BBC radio programme 'Brains Trust', invariably responded to a question from the audience with 'It depends what you mean by ...'¹³. In relevance terminology, this is a way of asking a member of the audience 'Would you tell me in what particular context you want me to process your words?' It is a perfectly reasonable question to ask in order to understand the caller properly, considering how little he could know about the caller.

The following example further clarifies the point. Consider the expression 'fruit' in [15]:

[15] Is a tomato a fruit or a vegetable? (from *Oxford Advanced Learner's Dictionary* 1989, p. 498)

A sensible way to answer any question is first to interpret the question as it is intended to mean. The reader cannot do this until he is clear in what particular context he is supposed to process the question. As [15] is an example sentence in a dictionary, there are no clues to the intended context for the reader. However, when a student is faced with the question 'Is a tomato a fruit?' in a botany examination¹⁴, the context in which he is supposed to process the question should include a botanical definition of 'fruit', like '[t]he ripened ovary or ovaries of a seed-bearing plant, containing the seeds and occurring in a wide variety of forms' (*Reader's Digest Great Illustrated Dictionary*). Such a context will include 'acorns' or 'winged keys of maples' in the category of fruit. If the question in [15] was being discussed in a European Community committee meeting on the tax status of tomatoes, then the intended context would be different. If it is the way in which tomatoes are consumed (i.e. as part of the main course of a meal) rather than their botanical structure that is at issue, then a horticultural or culinary definition (or simply an existing EC decree) is more appropriate. In this sense, the 'fruit' category consists of 'those [plant parts] mainly used as desserts' (*Vegetables and*

Vegetable Farming, Vol. 19, *Macropaedia*, *Encyclopedia Britannica*, p. 43) and includes things like rhubarb, which is not botanically a 'fruit' but the stalk of a plant.

If we take into account that the form of an alternative question can also be indeterminate, then we have at least three ways of interpreting and answering the question in [15], as shown in [16], depending on how we interpret the expression 'fruit' and the alternative question form:

[16a.1] Fruits are the ripened ovary of a plant such as oranges and kiwi fruits. (a contextual assumption which is the botanical definition of 'fruit', used here as the major premise)

[16a.2] Tomatoes are the ripened ovary of a plant like oranges and kiwi fruits (the minor premise, retrieved from memory)

[16a.3] A tomato is a fruit [and not a vegetable if the question is taken as a mutually exclusive disjunct] (conclusion)

[16b.1] Fruits are those plant parts mainly used as desserts (a contextual assumption which is the horticultural definition of 'fruit', used here as the major premise)

[16b.2] Tomatoes are NOT mainly used as dessert (the minor premise, retrieve from memory)

[16b.3] A tomato is NOT a fruit [but is a vegetable if the question is taken as a mutually exclusive disjunct] (conclusion)

[16c.1] Fruits are the ripened ovary of a plant such as oranges and kiwi fruits; vegetables are 'those plants or plant parts that are usually consumed with the main course of a meal' (p. 43, Vol. 19, *Macropaedia*, *Encyclopedia Britannica*) (a contextual assumption which consists of both the botanical definition of 'fruit' and the horticultural definition of 'vegetable', used here as the major premise)

[16c.2] Tomatoes are both the ripened ovary of a plant like oranges and kiwi fruits and the plant parts that are usually consumed with the main course of a meal

[16c.3] A tomato is both botanically a fruit and horticulturally a vegetable [if we do not have to treat the question as a mutually exclusive disjunct] (conclusion)

Reasoning processes in [16] show that the different contexts that the addressee uses to process an utterance can result in different interpretations of the utterance and even in contradictory answers if the utterance happens to be a question. This implies that context selection in utterance interpretation is at least as important as, if not more than, linguistic decoding.

How does the addressee construct an appropriate context to ensure the intended interpretation, then? Each of the contexts and each of the interpretations illustrated in [16] is equally compatible with the linguistically encoded information of a context-independent question like [15]. As all the interpretations follow valid lines of reasoning and all of their premises are justifiable, the answers should all be correct. In reality, the addressee has to avoid such ambiguities. He will infer constraints on context selection from the situation where the question is used, e.g. in a botany exam or a tax meeting. For example, when [15] appears on a botany examination paper, it can be interpreted as expressing something like [17]:

[17] Is a tomato botanically a fruit?

When the same question is raised at a European Community committee meeting regarding the tax status of tomatoes, it can be interpreted as expressing something like [18]:

[18] Is a tomato a fruit or a vegetable horticulturally (i.e. in terms of its relation to other horticultural products with regard to tax status)?

A cognitive approach to communication must eventually relate meaning to what goes on in the physical world. This is catered for in the relevance framework at the level of truth-conditional semantics, which uses the output of pragmatic processes as its input (cf. 2.1.8.2). In utterance interpretation, the addressee uses assumptions that he considers as true or treated as true (cf. 2.2.1). As shown in [16], once some assumptions are used as the context, the interpretation follows. In a different community, in a different social environment, what changes is the assumptions which are available as the context. Different sets of assumptions shouldn't affect the way they are processed psychologically in comprehension.

The last two sections show that the information linguistically encoded by an utterance cannot be equated with the proposition the communicator wants to express (cf. 2.1.8.4), and that different contexts that the addressee uses in processing an utterance affect its interpretation. In order to reach the intended proposition expressed in an utterance, the addressee has to assemble an appropriate context to process each constituent of the utterance. In order to get the communicator's indirectly communicated information¹⁵ (implicatures), the addressee also has to assemble an appropriate context to process the proposition expressed in the utterance. But what ensures that the addressee will construct the 'right' context on these occasions?

2.1.7 the general pragmatic criterion used in utterance interpretation

Both utterance interpretation and scientific enquiries are essentially processes of forming and evaluating hypotheses. The basic difference between the two is the considerably less amount of time and therefore effort required in most instances of utterance comprehension. This fact has an important implication in a relevance-theoretic pragmatics. The speed of utterance understanding makes it impossible for an addressee to evaluate the relevance of every possible interpretation of an utterance and he cannot

use any but the most immediately accessible contextual assumptions required. What is possible for the addressee to do is to take the first interpretation consistent with his expectation of relevance¹⁶. Sperber and Wilson have designed a notion of optimal relevance to explain this practice. If the addressee finds an interpretation which '(a) is rich enough in cognitive effects to warrant his attention, and (b) puts him to no gratuitous effort in achieving those effects' (Carston 1994a:695), it is then optimally relevant to him and is the interpretation he is supposed to adopt. Allowing for the fact that individuals' beliefs about the world are not always identical, and that in particular the addressee's actual assumptions may not match up with the ones that the communicator expected him to have, Sperber and Wilson propose that the actual criterion used in interpretation is one of 'consistency with the principle of optimal relevance' (1986:158). An interpretation which is not in fact optimally relevant may nonetheless be consistent with the principle of relevance as long as the communicator might reasonably have expected it to be optimally relevant¹⁷. Let's recall example [2]. If you were an experienced hunter yourself and your friend's warning would have been about something you already realised yourself, then as long as you could imagine how you might have been expected to interpret it if you hadn't realised the situation yourself, your friend's warning would still have been relevant. Relevance theory claims that it follows from the definition of optimal relevance that 'the first interpretation tested and found consistent with the principle of relevance is the only interpretation consistent with the principle of relevance' (Smith & Wilson 1992:7) and therefore is the interpretation a rational addressee should choose.

2.1.8 the process of utterance interpretation

We now show how the addressee reaches the communicator's intended interpretation of her utterance by looking at the major processes involved.

2.1.8.1 two kinds of meaning that the communicator may intend to express by an utterance

Grice (1975; 1989) developed the outline of a theory of utterance meaning emphasising the role of pragmatic principles and maxims in utterance interpretation. Grice's theory distinguishes two kinds of utterance meaning: 'what was said' and 'what was implicated'.

'What was said' is the explicitly expressed proposition which is closely linked to the linguistically coded content of the utterance and is considered the main contribution to its truth-conditions, which is regarded by formal semanticists as the meaning of a sentence. If the communicator observes all the conversational maxims¹⁸ proposed in Grice (1975) while producing the utterance, then the intended interpretation of the utterance will be mainly 'what was said'. Suppose A and B are friends. A asks B 'What did you do last night?' and B answers:

[1] I watched the Lendl-Becker match on television. (from *Challenge*, 1991, Surrey: Nelson, p. 145)

As a response to A, B said the sentence in [1] intending to express a proposition. In doing so, B asserted that p and indicated a belief that p . Also he expressed a wish that he wanted to inform A that p , and so on and so forth. In the meantime, B has answered A's question clearly (manner) and truthfully (quality), has given just the right amount of information (quantity), and has directly addressed A's goal in asking the question (relation). In such cases the question of 'what was implicated' doesn't normally arise.

'What was implicated' can be demonstrated by the example quoted here as [2]:

- [2] After a glass of water tipped and spilled over the horrible Headmistress, the Headmistress shouted at Matilda: ‘Admit it that you did it!’
Matilda answered: ‘I have not moved away from my desk, Miss Trunchbull, since the lesson began. I can say no more.’ (*Matilda* by Roald Dahl, London: Puffin Books)

Though Matilda didn’t explicitly say to the Headmistress ‘I didn’t do it’ but she successfully implied it. People could easily infer from Matilda’s reply that Matilda was denying the accusation. They presumably all had a readily accessible assumption that one cannot normally be at two different places at the same time and therefore Matilda would not be able to have tipped the glass if her claim was to be believed. Grice would call the result of this inference a conversational implicature, saying one thing and meaning something else in addition. ‘What was implicated’ can only be recovered by pragmatic inference under the influence of some pragmatic principles and maxims. In relevance theory, the recovery of both ‘what was said’ and ‘what was implicated’ is governed by the principle of relevance, in contrast to Grice’s resorting to inference only when recovering conversational implicatures.

The pragmatic contribution to the interpretation of the proposition expressed in an utterance, as Davis put it, ‘is of the greatest importance for a theoretical understanding of the communicative use of language’ (1996:131). But since modern pragmatics started with Austin (cf. 1962) and Grice, who were mostly interested in indirect speech acts and conversational implicatures, these two subjects are the major concern of many works on pragmatics. Many pragmatists ignore the process of how the truth-evaluable proposition directly expressed by an utterance is formed¹⁹, without which no further implicatures or propositional attitudes can be inferred. It has to be stressed that the recovery of ‘what was said’ involves much more pragmatic processing than is assumed in Grice’s and neo-Gricean pragmatics or contemporary semantic theories²⁰.

2.1.8.2 semantics and pragmatics

What, then, is the relation between the two kinds of utterance meaning, ‘what was said’ and ‘what was implied’, and two related disciplines in language studies: semantics and pragmatics?

One of the recent standard definitions of linguistic semantics is ‘the study of those aspects of meaning encoded in linguistic expressions that are independent of their use on particular occasions by particular individuals within a particular speech community’ (Cann 1993:1)²¹. Such a definition seems to be compatible with the definition of pragmatics advocated by relevance theorists. Carston (1994a:692) defines pragmatics as being concerned with ‘all those aspects of utterance meaning which depend on an interaction of linguistic meaning and contextual information, an interplay which is driven and constrained by principles of reasonable communicative behaviour’.

It has been shown that the subject matter of semantics, the linguistically coded meaning, forms only a part of ‘what was said’²². On the other hand, some pragmatic effects formerly regarded as part of ‘what was implicated’, such as those associated with conjunction, have been proved to fall ‘within the scope of logical operators and so contributing to the truth-conditional content of the utterance’ (Carston 1994a:694; cf. also Carston 1990). As a result, now we have something which can be regarded as neither implicature (since it contributes to truth-conditional content), nor linguistically decoded meaning of the utterance (since it has to be recovered by inference), because not affecting the truth-conditional content of an utterance is one of the defining features of implicatures. In order to account for such phenomena and to rescue the useful divisions between the pair of notions ‘what was said’ and ‘what was implicated’ and the pair of disciplines semantics and pragmatics, relevance-theorists have proposed a three-level scheme:

- i. linguistic semantics, which decodes the expressions used in an utterance;

- ii. pragmatics, which employs an interplay between the decoded content and extralinguistic assumptions under the constraints of principles of people's 'reasonable communicative behaviour' (Carston 1994a:693);
- iii. truth-conditional semantics of full-fledged propositional representations, which accounts for the relation between an utterance and the state of affairs it is used to talk about and, more generally, the relation between thoughts and the world they represent.

In this framework, linguistic semantics is about linguistic representations and computations while pragmatics is about non-linguistic representations and computations. 'What was said' is recovered by both linguistic semantics and pragmatics and 'what was implicated' is recovered mainly by pragmatics.

2.1.8.3 truth conditions have to be recovered with the help of pragmatic inference

The reason for introducing pragmatics to link the two types of semantics is to try to solve a fundamental issue in utterance interpretation. Many formal semanticists regard truth conditions as the meaning of a sentence, which are linguistically coded, and they set as their objective to give 'an account of the relation between linguistic expressions and the things that they can be used to talk about' (Cann 1993:1). However, there is a gap between sentence meaning, the combinatory meaning of what is encoded in each linguistic expression and the way they are combined, and utterance meaning, the intended meaning when these expressions are used to talk about something. The gap can only be filled by pragmatic inference.

Formal semanticists identify the meaning of a sentence with its truth-conditions. They claim that the statement 'communicators of a language know the meaning of a sentence in their language' means they 'know the conditions that must obtain for it to be true' (Cann 1993:15). Consider Cann's (1993:13) example, quoted here as [1].

[1] The book is on the table.

Cann suggests that ‘the specification of the truth-conditions shown in (23) [renumbered here as 2] thus provides a theory of the core meaning of the sentence *The book is on the table*’ (ibid., p. 16).

[2a] There is a contextually unique entity which is in the (extensional) denotation of the lexeme BOOK.

[2b] There is a contextually unique entity which is in the (extensional) denotation of the lexeme TABLE.

[2c] The entity in (a) stands in the relation of being on the entity in (b).

With examples such as those in [1] and [2], Cann claims that the formal semantic theory ‘thus equates core meaning with knowledge of how the truth of a declarative sentence can be ascertained without requiring the truth or falsity of a sentence to be known or knowable in any particular situation’ (1993:15)²³.

Consider the following examples:

[3a] The whale is a mammal.

[3b] The marsupial wrecked the sitting room.

[3c] Gorillas are herbivorous.

[3d] Logicians are visiting.

(from Guttenplan 1986:234f)

In [2a] and [2b] above, we have seen the standard way of giving the specification of satisfaction conditions to a definite noun phrase: it is treated as an unambiguous linguistic entity. Following the practice in [2], the specification of the subject noun phrase in [3b] can be expressed as [4].

- [4] There is a contextually unique entity which is in the (extensional) denotation of the lexeme MARSUPIAL.

If [3b] is used to describe an event, then the satisfaction condition of the NP ‘the marsupial’ is correct. But how about the specification of the definite NP in [3a]? Guttenplan claimed that [3b] ‘has a definite description, and does not contain an implicit quantifier in the way that [15a] ([3a] here) does’ (1986:235). So obviously we cannot use the format in [2a] to specify the satisfaction condition of the definite NP in [3a], as we have done with the one in [3b]. The difference between [3a] and [3b] can be captured, according to Guttenplan’s interpretation mentioned above, by two different formulae in predicate logic as in [5].

- [5a] (4a) = $(\forall x) (Fx \rightarrow Gx)$,

where ‘Fx’ means ‘x is a whale’ and ‘Gx’ means ‘x is a mammal’; the formula reads ‘Every x is such that if x is a whale then x is a mammal’.

- [5b] (4b) = $(\exists x) (Fx \wedge Gx)$,

where ‘Fx’ means ‘x is a marsupial’ and ‘Gx’ means ‘x wrecked the sitting room’; the formula reads ‘There is at least one x such that: x is a marsupial and x wrecked the sitting room’.

It is obvious that there are more than one way of specifying the satisfaction condition of a definite description. And the correct choice of the one suitable for the occasion relies on pragmatic inference. Let’s see how Guttenplan did this. First, he appealed to ‘facts about the world which you happen to know’ and claimed that ‘[w]hat makes the difference is non-linguistic knowledge. For example, we know that ‘being a mammal and being herbivorous are general properties; they tend to be used of every member of a species²⁴, (ibid.). Guttenplan wouldn’t be able to deny that when we reason with these ‘facts’, we treat them as true. Second, in explaining how he knew the difference between the truth conditions of the subject noun phrases in [3c] and [3d], Guttenplan

said that in [3d] ‘the predicate “visiting” is a clue which alerts us to the fact that this sentence is existential (After all, one would have to be implausibly unfortunate to be in the position of having all logicians visiting.)’ (ibid.). Here again the notion of truth is implied when Guttenplan uses the word ‘implausibly’²⁵.

It is clear that the addressee uses pragmatic inference in assigning generic/non-generic references. The addressee will reject the non-generic interpretation of the referring expressions in (3a) and (3c) on the ground that they are not true or plausible and will instead accept their generic interpretation. The above analyses show that at least when a definite NP is interpreted generically, as [3a] was by Glymour, one has to make use of inference and appeal to the notion of truth when specifying the satisfaction conditions of the NP.

Furthermore, in truth conditional semantics it is believed that if a sentence is ambiguous, it has different sets of truth conditions to match its different meanings (cf. Cann 1993:15). Given this assumption, [6a] should have more than one set of truth conditions because it can appear in both [6b] and [6c] and, only when it appears in [6c], can the satisfaction condition of the noun phrase ‘the grey whale’ be specified by the format proposed by Cann in [2a].

[6a] The migration of the grey whale is one of the better known aspects of its behaviour.

[6b] The migration of the grey whale is one of the better known aspects of its behaviour. They spend the summer months in the far north, principally in the Bering Sea, where they live in mixed herds. (From *Encyclopedia of The Animal Kingdom*, London: Macdonald & Co (Publishers) Ltd.)

[6c] Scientists are amazed by a gigantic grey whale in the North Sea and it has been repeatedly seen attacking submarines. The migration of the grey whale is one of the better known aspects of its behaviour.

Using truth conditional semantics terms, we may specify the satisfaction conditions of the noun phrase 'the grey whale' in [6b] and [6c] as [7a] and [7b].

- [7a] There is a contextually unique entity which is in the (extensional) denotation of the lexeme GREY WHALE.
- [7b] In the universe of discourse there is a generic²⁶ set which is in the (extensional) denotation of the lexeme GREY WHALE.

Though the difference between the two sets of satisfaction conditions for the noun phrase 'the grey whale' that are specified in [7a] and [7b] is significant, the difference has never been regarded as a type of ambiguity in traditional semantics²⁷, in spite that it is a common practice to give two analyses to ambiguity arising from other sources:

- [8a] The English sentence *Pedro jumped from the top of the bank* has two meanings.
- [8b] The English sentence *Mad dogs and Englishmen go out in the noonday sun* has two meanings.
- [8c] The English sentence *John saw her duck* has two meanings. [from Larson & Segal 1995:2]
- [9a] [N [financial institution]] or [N [fluvial embankment]]
- [9b] [NP [conj.1 mad dogs] and [conj.2 Englishmen]] or [NP [mad [conj.1 dogs] and [conj.2 Englishmen]]]
- [9c] [NP [the duck that she owns]] or [CL [she ducked]]

In order to be sure of the meaning of any example in [8], we need to make a choice between the ambiguity shown in [9] respectively. But no one in linguistic literature so far has given such alternatives to noun phrases like the underlined one in

[6a] and many such like, though without a context it is equally open to the different interpretations that I have indicated.

Now, one has reason to wonder how, for example, Cann manages to get the specification in [2a] without knowing something about the context, i.e. about whether the NP 'the book' is used on a particular occasion to refer to a contextually unique book? Obviously we cannot specify the satisfaction conditions of the noun phrase 'the whale' in [3a] in the same way though it has the same form as 'the book' in [1]. If we need more than one kind of specification for the same type of *the N* NP, then we have to resort to pragmatic inference with the context in which these NPs are actually used²⁸.

What I have done so far in this section is to prove that truth conditions of an utterance cannot be specified without appealing to inference and the notion of truth and thus to have shown the necessity of having pragmatics as the link between sentence meaning and utterance meaning²⁹.

It is evident that truth conditions cannot be recovered by semantic decoding alone. In reality, most utterances are like the following examples and are not truth-evaluable before they have been developed pragmatically one way or another. I will show just one or two typical processes in each case:

[11a] He gave us a lecture yesterday.

[11b] John bought a banger.

[11c] The park is too far.

[11d] In progress.

[11e] Mary hit Tom and he cried.

With [11a], as with 'the book' in [1], we have to assign a referent to the referring expression 'he'. If you were talking to your partner at the time of the utterance about a particular male person, say, Bill, then its referent is this particular 'Bill'. We also have

to determine the exact date of ‘yesterday’, say, December 22, 1995, if, we suppose, the utterance was made on December 23, 1995.

With [11b] we have to disambiguate the different senses that the lexeme ‘banger’ carries and may decide on, say, ‘old car’ (as opposed to ‘sausage’ or ‘fireworks’, according to the senses recorded in *Cambridge International Dictionary of English* 1995), if the most accessible assumption we happen to have is ‘John was thinking of getting a car’.

With [11c] the sense of ‘too far’ needs to be enriched (i.e. ‘too far’ for what kind of activity?). Only the context can provide clues to the communicator’s intended meaning: say, the communicators involved in this scenario may be driving a car or may be discussing a walk.

A similar kind of question can be asked about Cann’s specification [2c]. Can the relation of entity A being ‘on’ the entity B be semantically specified? Katz (1981:220) claimed that a sentence like *The cat is on the mat* ‘has a literal compositional meaning’. Katz’s specification of the preposition ‘on’ occurred twice: one is that ‘the aforementioned cat is also positioned so that its bottom is in contact with the top of the mat’ and the other is that the cat is vertically positioned over the mat. But surely there are other equally compatible possibilities, as Anderson (1990:13) suggested:

‘. . . the possibility that the mat is being used as wall hanging and that the cat has jumped up and grabbed the mat with its claws . . .

‘. . . the possibility of a cat balancing on the edge of a rolled, stiff, upright mat standing in a corner . . .’

Anderson also asked ‘As for the cat, why must its bottom be in contact with the mat? Why couldn’t the cat be standing or lying on its side?’ The point here is that all these possibilities, including Katz’s ‘semantic’ specifications, can only be pragmatically

inferred, based on our beliefs about the ways how cats and books generally behave in relation to mats or tables on certain occasions. Such matters cannot be resolved by linguistic semantics.

Suppose that [11d] is a lighted sign outside an operating theatre in a hospital. Since it is only a prepositional phrase, we have to resort to our mental schema of a hospital or operating theatre situation in order to provide some conceptual content to the empty grammatical slots which are covert, as shown in [12]:

- [12] s [**NP** [**empty**] **VP** [**V** [**empty**] **PP** [in progress]]]
NP An operation VP is PP in progress.

[11e] is more complicated. The semantic contribution of the lexeme 'and' to the meaning of the utterance is equivalent to the logical operator '&'. In this case we naturally turn to our mental schema about the way people describe things (i.e. normally according to the order in which events take place) and the result would be like:

- [13] Mary hit Tom at time **t** and Tom cried at **t+n** (**t** represents a particular time earlier than the moment of utterance and **t+n**, a particular time later than **t** and prior to the moment of utterance)

Or if we want to expand the context a bit with our mental schema about the causative relations between human actions and emotions, we may establish an additional relation between these two events as in:

- [14] Mary hit Tom and as a result Tom cried

In everyday communication, utterances are often fragmentary and even a relatively complete sentence encodes only part of the information the communicator intends to convey (i.e. only the logical form). Therefore, there is no way to assign truth-

conditions directly to them. The communicator has to rely heavily on some contextually inferrable, but not linguistically encoded, information in fulfilling her communicative act. Hence the pragmatic procedures illustrated above (i.e. reference assignment, disambiguation, the restoration of elliptical sentences and the resolution of vagueness, etc.) are essential in building up truth-evaluable propositions expressed by these utterances. For all these reasons, a truth-conditional semantics cannot have natural language sentences as its sole input. We need pragmatic processes to develop semantic representations into propositions, which are complete conceptual representations in the sense that they are truth-valuable. Only these propositions can be the input of truth-conditional semantics, which can then be related to the states of affairs in the world that they are used to represent.

One of the main tasks of pragmatics is to explain how world knowledge is used and contextual information is selected in the development of a logical form (i.e. a series of semantic representations) into a proposition (i.e. a series of conceptual representations). In this way pragmatics joins the two kinds of semantics, with the output of linguistic semantics as its input and its output as the input to truth-conditional semantics.

2.1.8.4 the recovery of the proposition expressed by an utterance

As I have discussed above, it is in the communicator's own interest that she tries to phrase her utterance in such a way that her intended interpretation is the easiest for the addressee to process. On the other hand, governed by the same principle of relevance, the addressee will also interpret the utterance in the expectation of optimal relevance - of satisfactory effects without unjustifiable effort - and therefore will be on the right track of recovering the communicator's intended meaning. Though the intended proposition is only partially encoded in an utterance, the addressee has to start his interpretation

from the words in the utterance. In this section, I will concentrate on one utterance, illustrating the development from its linguistic form to its intended interpretation.

Suppose A said [1] to B:

[1] Let's get some money from the bank first.

The logical form of A's utterance is an abstract frame resulting from linguistic decoding. To a user of English the initial word 'let' together with the rest of the constituents will start a series of syntactic and semantic hypotheses as the on-line processing develops, such as those in [2]:

[2a] possible combination of constituents:

S[[eSub] [VP [V(imperative,transitive) NP VP NP PP ADVP]]

(S = sentence; eSub = empty subject; VP = verb phrase; V = verb; NP = noun phrase; PP = prepositional phrase; ADVP = adverb phrase)

[2b] possible functional sequence:

S[[eSub] [V(imperative, transitive) O V O A A]

(S = sentence; eSub = empty subject; V = verb; O = object; A = adverbial)

[2c] possible semantic hypotheses:

1. It is desirable that some entities do something somewhere at some time
2. It is desirable that the communicator and the addressee do something somewhere at some time

...

Secondly, the form 's is recovered as the contracted pronoun 'us' (as opposed to, say, the contracted is or the genitive 's), as shown to be a noun phrase and object in the syntactic hypotheses in [2a] and [2b]. Its referent is assigned as 'A and B involved in the dialogue' if nobody else is a participant - 'the communicator and the addressee' shown in [2c]. Thirdly, the content of the lexical items 'get', 'some', 'money' and 'first'

would have to be enriched to be more specific according to the context. That is to say, 'get' is understood as 'draw (money) from a cash machine' or 'cash a cheque over the counter'; 'some' is understood as, say, 'a reasonable amount for daily use'; 'money' is understood as 'cash'; and 'first' is understood as 'a fairly short period of time prior to the next activity'. Fourthly, the lexical item 'bank' has to be disambiguated. Its sense of 'financial institution' rather than that of 'sloping margin of a river' is chosen in this context. Then, a time variable would have to be appended according to the schema that the addressee has for their routine. The resultant proposition would be something like [3]:

[3] A and B draw a normal amount x of cash from the financial institution which they have financial dealings with at time t within, say, a reasonable period of time prior to A and B's next activity.

At the same time, this proposition is accompanied by a propositional attitude, which is indicated by the linguistic mood of the imperative, encoded in the word 'let', as shown in [4].

[4] A thinks it is desirable and potential for both A and B that [3].

The whole process is constrained by the criterion of consistency with the principle of relevance because for a couple living in the modern English-speaking world the result realized in the combination of [3] and [4] is the most readily available and yields adequate contextual effects for no unjustifiable effort.

Let's further consider three situations in which the content of the utterance in [1] is relevant to B. First, consider a situation in which B knows that whenever A suggests getting some cash, they are going to have a good time. In this situation [1] will be relevant by combining with B's existing assumptions to result in the contextual implication that they are going to have a good time. Next, consider a situation in which

B believes that A was going to spend some money. Here [1] achieves relevance by virtue of confirming or strengthening an existing assumption. Finally consider a situation in which B believes that A is having a cashflow problem at the moment. Here the information will be relevant to B by virtue of contradicting and thus eliminating an existing assumption. In any of these cases B will be benefited in some way from processing A's utterance, e.g. knowing how to co-ordinate with A's intention in what actions to follow or, if B wants, forming some new ideas about A's personality, etc.

The criterion of consistency with the principle of relevance would lead the interpretation of A's utterance to other alternatives according to different mental schemas people have about their daily routines, e.g.

- If there were more people participating in the activity, the contracted pronoun 'us' would be used to refer to more people than only A and B.
- If A and B were planning to buy a house, the lexical form 'get' would be interpreted as 'to persuade the bank manager to give them a loan', 'some' would be 'a substantially big amount', and 'money', 'a loan offer'.
etc. etc.

This is briefly how the addressee's attempt at optimising relevance goes hand in hand with the selection of an appropriate context in which he can process the utterance to recover its intended interpretation.

We could look at the situation in still other ways. On hearing A's utterance in different situations (thus other sets of assumptions are more accessible to the addressee), a series of possible hypotheses could have appeared in B's mind:

- A is suggesting that they should get some money from the river bank (if B knows A has hidden some money there).

- A is suggesting that they should rob the bank (if B is A's usual accomplice in such activities).
- A is suggesting that they should withdraw £ 20,000 from the bank (if, say, B knows that is the usual sum for A to go shopping with).

Hence we would all agree that under normal circumstances B would choose the interpretation which is the combination of [3] and [4] since it is the most obvious one and the easiest one to acquire. We who live in the modern world are generally equipped with similar mental schemas for this daily banking routine.

Alternatively, if [1] is A's reply to B's question 'Shall we have lunch now?', then one likely implicature of [1] is that 'A disagrees with B's suggestion of having lunch now' (since conversational implicatures are not my main concern in this study I omit the detailed process of its derivation here).

This example illustrates how the criterion of consistency with the principle of relevance constrains pragmatic inference in producing a truth-evaluable proposition that was intended by the communicator. It also shows the uniqueness of this principle:

'. . . it is not something that people have to know, let alone learn, in order to communicate effectively; it is not something that they obey or might disobey: it is an exceptionless generalisation about human communicative behaviour.'
(Wilson and Sperber 1988:140)

I have just described the interaction between linguistic semantics and pragmatics in developing the linguistic form of an utterance to the proposition that it is used to express. With the output of the pragmatic process, the combination of [3] and [4] above, B knows something new about the world, i.e. what A intends to do next. If A did go with B to the financial institution and got some cash from there, then A did what B had predicted from A's utterance and the proposition has contributed to

the fulfillment of B's cognitive goal. In this way B can finish mapping the content of the proposition with the state of affairs it was used to represent in real truth-conditional semantics. The value of truth in this sense lies in ensuring the realisation of a cognitive agent's prediction. In this view, contrary to what Larson and Segal have claimed (1995:9), native speakers' judgments need not be involved at this stage because it is the interface between conceptual representations and states of affairs in the world, which are not language specific.

2.2 inference and utterance interpretation

2.2.1 inference and narrow content

In a realist framework, if the word 'water' is used to refer to a compound consisting of H₂O on earth and a compound consisting of XYZ on Twin-Earth, then the substances H₂O and XYZ are the meanings of the expression 'water' in these two places respectively. Consequently, these two meanings are different in that one consists of H₂O and the other consists of XYZ. However, if we are interested mainly in the relations between language, thought and human behaviour, then this kind of meaning is not our immediate concern. What really matters is our belief, the reflection of the world in our mind.

Both experts and laypeople aim at getting their representations of the world as accurately as possible because it will help them to achieve their goals in daily life (cf. Mellor 1990). While trying to obtain an accurate representation of the world is an on-going process, people have to make do with the one they have at the moment, which is their belief system. When people try to fulfill their goals, they act according to the results of their reasoning based on their perception and belief system. Fodor (1987) called the real essence of entities that we can represent in our mind 'broad content' and the representation of these entities 'narrow content'. The advantage of this

distinction is that it acknowledges the metaphysical essence of objects, the 'broad content', as part of the meaning, but at the same time it stresses the relevance of what is in our mind, the 'narrow content', to the study of the relation between language, thought and human behaviour. Broad content is the representational meaning, whose truth value depends on the real state of affairs in the world it represents. Important as it is, for it is what our mental representations reflect, it is not what is in our mind and therefore cannot affect our behaviour. Narrow content has been defined as 'the psychologically relevant types of meaning' (Wilson 1993) and is so named because 'it is envisaged that it will be constituted solely by what is in the head of the relevant organism' (Rowlands 1992). It is what we base our mental activities on and plays an important role in cognition and computation of thoughts.

In natural sciences, people's beliefs are judged by facts in the world but in cognitive psychology we try to explain people's behaviour by tracing back to their beliefs and desires (cf. Mellor 1990:83; Stich 1994:501). A cognitive approach to the study of linguistic reference distinguishes the reference to entities in the world from the reference intended by the speaker. Before we can judge the truth or falsity of a thought expressed by an utterance against the real world, we need to know what the intended representation is. We may all want our beliefs to be true in virtue of the world that they represent, but they are often about what the world seems to be to us.

The following example shows their difference, relation and impact on human behaviour. In the streets of Shanghai in late May 1989, the British TV celebrity Clive James was greeted as Mikhail Gorbachev. The person CLIVE JAMES and the person MIKHAIL GORBACHEV constitute the broad content. However, the people who hailed CLIVE JAMES as 'Gorbachev' were motivated by another type of meaning, the narrow content, which is a representation in their mind named 'Gorbachev'. They would have acted in the same way in front of the real Gorbachev, the then leader of USSR. So different meanings in broad content, i.e. the person CLIVE JAMES and



the person MIKHAIL GORBACHEV, may be identified with the same meaning in narrow content, i.e. a conceptual representation named 'Gorbachev', and induce the same action.

At the same time I was helping CLIVE JAMES make a BBC documentary and had a representation of him in my mind as well. But I reacted to him differently from those people. In terms of broad content, the person CLIVE JAMES gives one meaning to the name 'Clive James' I have been using so far. However, there were two different meanings in terms of narrow content in the situation I have been describing, which resulted in two different sets of actions, namely, mine and those people's. Therefore, different meanings in narrow content may be related to the same meaning in broad content and, most importantly, result in different sets of actions.

If we distinguish narrow content from broad content when interpreting people's utterances, we will be able to recover the communicator's intended meaning faithfully. From the addressee's point of view, utterance interpretation is about how to recreate the communicator's intended meaning through inferences with the clues provided by her utterance and the context. To recover the communicator's intended meaning is one thing and to judge whether the communicator is telling the truth or using the right expression is another. In establishing a theory of utterance interpretation, we are more interested in whether the reference is successful rather than whether the reference is correct. That is to say, we are more concerned with the narrow content in the communicator's intended message rather than correctness of a belief attributable to the communicator being judged by its broad content. With narrow content we should ask the question of whether it exists in the mind (or its equivalent) of a cognitive agent or not. With broad content we ask the question of whether it is true or false against the world it is used to represent.

In the tradition of philosophy, a statement is often said to be able to take a *de dicto* or a *de re* reading. In formal semantics, these two readings play an important

part in its specification of the meaning of sentences. The following examples have been adapted from Cann (1993:265).

[6a] I do not want to meet Ethel.

[6b] I want to meet the Ladies' Scottish Golf Champion.

According to Cann, in the *de dicto* reading, the communicator is not necessarily contradicting herself even if 'Ethel' and 'the Ladies' Scottish Golf Champion' are actually the same person. If it is put in the framework I have adopted here, we can say that the communicator may well have two different narrow contents for the *de dicto* reference of 'Ethel' and 'the Ladies' Scottish Golf Champion', which will cause two different sets of actions. According to Cann, on the other hand, in the *de re* sense, [6a] and [6b] contradict to each other if 'Ethel' and 'the Ladies' Scottish Golf Champion' are the name and title of the same person. Again, we can say that the contradiction is caused by the same broad content which is at the same time the representational meaning of both two expressions. That is, the referent is the person whose name is Ethel and who has the title of the Ladies' Scottish Golf Champion. My point in quoting Cann here is to say that, for a theory of utterance interpretation, the traditional *de re* reading is irrelevant. Given that the communicator aims at optimal relevance, she wouldn't contradict herself without wanting to achieve some extra cognitive effects. Therefore, the addressee is entitled to interpret [6a] and [6b] as not contradictory to each other unless the communicator indicates that she knows that she is talking about the same person. In that case, she is ostensibly trying to achieve some extra effects by putting the addressee to extra effort in processing the seemingly contradictory utterances. Suppose the communicator is Ethel's neighbour and she knows that the addressee knows that she knows that Ethel is the Ladies' Scottish Golf Champion. Then the communicator may want to express, by uttering [6a] and [6b], the desire to appear with ETHEL at her award ceremony, as opposed to, say, the desire to meet her in her house for tea.

In this thesis, traditional terms like *de dicto* and *de re* readings will be reanalysed according to the narrow / broad content division for the purpose of developing a theory of noun phrase interpretation. The new division aims to distinguish what should be accounted for by a theory of utterance interpretation from what is the concern of other disciplines. For example, what philosophers call a *de dicto* reading is mainly related to so-called belief sentences (cf. Quine 1966:183ff; 1981:113ff) but narrow content is concerned with anything intended by the speaker, including belief sentences. Also, a *de dicto* reading is sometimes termed similarly as the equivalent of the ‘attributive use’ of a noun phrase (cf. 4.1.4). For instance, ‘the Ladies’ Scottish Golf Champion’ is taken as somebody’s ‘belief about someone who carries the title of Ladies’ Scottish Golf Champion without knowing (or perhaps caring) who that person is’ (Cann 1993:265). It is better to accommodate such clashing cases in a unifying account.

A linguistic theory based on narrow content can shed light on some traditional puzzles. For example, why does Leibniz’s Law seem to hold in some linguistic contexts but not in others (cf. Cann 1993:263ff)? I demonstrate the problem with examples from Cann (1993), quoted here as [7], [8] and [9].

[7a] The Morning Star is the planet Venus.

[7b] The Evening Star is the Morning Star.

[7c] Therefore, the Evening Star is the planet Venus.

[8a] Bertie believes the Morning Star is the planet Venus.

[8b] The Morning Star is the Evening Star.

[8c] Therefore, Bertie believes that the Evening Star is the planet Venus.

[9a] Bertie wants to look at the Morning Star.

[9b] The Morning Star is the Evening Star.

[9c] Therefore, Bertie wants to look at the Evening Star.

According to Cann, Leibniz's Law 'allows the substitution of extensionally equivalent expressions for one another in a formula while maintaining the truth value of the original formula' (ibid., p. 263). Cann claimed that [7] is valid while neither [8] nor [9] 'is intuitively valid, despite the fact that they involve the substitution of extensionally equivalent expressions in a formula' (ibid.).

In fact, Leibniz's Principle of the Identity of Indiscernibles only specifies that 'if A and B have exactly the same properties, then they are identical' (Blackburn 1994:185; cf. also Honderich 1995:391). Cann attributed the invalidity of [8] and [9] to the type of verbs used, i.e. verbs which denote mental states and attitude. But verbs which do not belong to this class can nevertheless cause the same problem in the formula used by Cann. Compare [8] and [9] with [8'] and [9'].

[8a'] Bertie said the Morning Star is the planet Venus.

[8b'] The Morning Star is the Evening Star.

[8c'] *Therefore, Bertie said that the Evening Star is the planet Venus.

[9a'] Bertie saw the Morning Star.

[9b'] The Morning Star is the Evening Star.

[9c'] *Therefore, Bertie saw the Evening Star.

On the other hand, if the verb 'believe' is used throughout the argument, which ensures the identity condition of the Leibniz's Law, as specified by the above quote from Blackburn, the inference is valid. Look at [7'] (Suppose sentences in [7a-b] are utterances made by a communicator and [7a'] and [7b'] are propositions embedded in a propositional attitude; S stands for the speaker).

[7a'] S believes that the Morning Star is the planet Venus.

[7b'] S believes that the Evening Star is the Morning Star.

[7c'] Therefore S believes that the Evening Star is the planet Venus.

Then, what has gone wrong with the arguments in [8] and [9] exactly? It is the confusion of the narrow content with the broad content which has caused the trouble.

If we believe that [7a] and [7b] are true in terms of the broad content, then the conclusion is also true because it is the result of valid reasoning. Neither [8] nor [9] is valid simply because some entities which belong to narrow content are confused with some entities which belong to broad content. For example, [8a] is about what Bertie believes, which is definitely a statement about narrow content, while [8b] is about the names of real world entities, which can be a statement about broad content. Since different entities have different identity conditions, entities in [8a] cannot be necessarily taken as identical to those in [8b]. Hence the invalidity of the syllogism.

Cann's argument for the validity of the inference in [7] is based on its broad content: 'since the Morning Star and the Evening Star denote the same entity, the latter expression may be substituted for the former in the first premise to give the conclusion' (ibid., p. 263). However, Cann has set the inferences in [8] and [9] in such a way that their minor premises, [8b] and [9b], are not embedded under the same propositional-attitude verb as [8a] and [9a] are, in order to show that Leibniz's Law does not hold in all linguistic contexts. This is exactly what a principle of identity can show: if two entities are not identical with each other, i.e. one belonging to the narrow content and the other to the broad content, they cannot be substituted without leaving the truth value of the argument unchanged!

In philosophical logic, two major types of identities are distinguished. One is called numerical identity, which means 'a is said to be, or not to be, the very same thing as b' (Wolfram 1989:209). The other is qualitative identity, which means 'a is said to be (or not to be) the same as b in some, perhaps many, respects' (ibid.). The requirement for a valid proposition of identity is the form 'a is the same such and such

as b'. For a proposition of numerical identity, the expression for 'such and such' should be the equivalent of the head nouns in expressions standing for a and b, as shown in [10].

[10] The man in Picture A is the same man as the man in Picture B.

For a proposition of qualitative identity, the expression for 'such and such' 'needs to name an attribute a and b could have' (ibid. p. 214), as in example [11].

[11] Your car is the same model as my car ('You' and 'I' respectively have a car).

Now if we put Cann's examples under such classification, we find again that he used different criteria to argue for the validity of [7] and invalidity of [8] or [9] (here I just compare [7] with [9] to show my point).

[7a''] The Morning Star is the planet Venus.

[7b''] The Evening Star is the Morning Star (Cann claims that they 'denote the same entity', so actually it is taken as a true proposition of numerical identity = 'The Evening Star is the same planet as the Morning Star')

[7c''] Therefore, the Evening Star is the planet Venus.

[9a''] Bertie wants to look at the Morning Star.

[9b''] The Morning Star is the Evening Star (here Cann claims that '[w]hat is important is a particular manifestation of some entity, the planet Venus' (1993:264) [My emphasis - Ni]. So actually the statement has become a false proposition of qualitative identity = 'The Evening Star is the same manifestation as the Morning Star'; since the minor premise is false, the conclusion is naturally invalid)

[9c''] *Therefore, Bertie wants to look at the Evening Star.

Examples in [7''] and [9''] show that Cann's proofs for his claim that 'The Law of Substitution . . . does not . . . hold in all linguistic contexts' are not logically sound in the light of the numerical-qualitative division in identity conditions. It is not enough to state a proposition as 'a is b', as Cann does, or even 'a is the same as b'. The correct formula has to be 'a is the same such and such as b' and the exact content of 'such and such' decides whether it is a numerical or qualitative proposition of identity, which has significant impact on people's mental life.

The inference pattern in [7] is valid when both [7a] and [7b] are true in terms of its broad content. This inference pattern can also be valid when both the major and minor premises are taken to be true by the cognitive agent involved, if the narrow content is what is at issue. Consider [12] (the capital CLIVE JAMES represents 'the person Clive James').

[12a] Mikhail Gorbachev **x** is the person Wang thought to have met **x**.

[12b] CLIVE JAMES **x** is the person (taken to be) Mikhail Gorbachev **x** (by Wang).

[12c] Therefore, CLIVE JAMES **x** is the person Wang thought to have met **x**.

The narrow content, indicated by the **x**, remains constant in [12] because of its constant role played in Wang's mental life and its identical causal power. The broad content is irrelevant here because it is not in the head of Wang, does not affect Wang's behaviour and would not be part of her intended meaning if she wanted to report her activity.

The distinction involved in the numerical-qualitative division is also useful as part of the inference apparatus used in generic interpretation. For example, in a traditional example 'Every animal except man is irrational' (*Summulae Logicales* by Peter of Spain, Sec. 6), the interpretation of 'animal' is 'kind of animal'. In practical reasoning, we often use weaker versions of the Leibniz's Law: instead of requiring that **x** and **y** have exactly the same set of properties, we take **x** and **y** to be identical if

x and y are used to represent the same entity, as in the case of [7] or if x and y play the same role in a particular person's mind on a particular occasion, as in the case of [12].

2.2.2 reasoning in inference

The following points need to be clarified in order to understand how reasoning works in utterance interpretation:

1. the notion of 'truth' in reasoning
2. what is a sound argument?
3. the role of monotonic and nonmonotonic reasoning in utterance interpretation

2.2.2.1 truth in reasoning

The interpretation of an utterance is a process of computing with assumptions derived from both the utterance and the context. The computation is concerned only with the narrow content of assumptions - the meaning in the addressee's mind (cf. 2.2.1) and that's why the original definition of the relevance of an assumption in a context 'takes no account of the objective truth or falsity of the assumption itself' (Sperber & Wilson 1995, 3.1.2). In the computation of assumptions, the conclusions are taken as acceptable as long as they are based on valid syllogisms and acceptable premises. So in a theory of utterance interpretation, objective truth doesn't play a direct role. If the cognitive effects that the addressee gets from his processing of utterances are true beliefs, then his knowledge about the world will be improved and he is likely to benefit by this improvement³⁰.

Reasoning with assumptions accessible to the addressee is an integrated part of utterance comprehension. Such inference usually is on-line, consisting of a chain of arguments, in which the conclusion of an earlier argument may be used as a premise

for a later one. The addressee will carry on with the task when he believes the form of the arguments is valid and the premises used are true. The addressee spontaneously performs reasoning tasks according to his own criteria of validity and truth³¹. The criteria people use in daily reasoning is part of their beliefs, which is narrow content. When they are challenged about the criteria that they use, people may have a second thought about the criteria and may seek for alternatives. For example, in Johnson-Laird and Anderson's experiment, most subjects readily reached the conclusion that the suspect was not guilty from the information provided in [1].

[1] The victim was stabbed to death in a cinema. The suspect was on an express train to Edinburgh when the murder occurred. (from Johnson-Laird 1988:435)

However, when the subjects were encouraged to ponder on the matter, some of them started producing some imaginative alternative scenarios, one of them being that the suspect is not innocent because 'he may have used a post-hypnotic suggestion that the [victim] stab himself during a certain climactic scene in the movie' (ibid.). This indicates that people may change their criteria for what they believe to be true in reasoning during a fairly short period of time if they are made to have less confidence in the criteria and if they can find acceptable support for an alternative (for what is counted as 'acceptable' see below).

The two statements in [2] are contradictory; logically, if one is true, the other has to be false. Therefore, switching from one to the other involves changing one's criteria for truth on this particular issue.

[2a] The suspect is innocent.

[2b] The suspect is not innocent.

In general, when performing inference in utterance interpretation, individuals follow the criteria of truth which they have access to on a certain occasion as a part of the

context. Corresponding to the distinction between broad content and narrow content of meaning, there can be two types of truth. The type which relates to broad content is the agreement of the content of a proposition with the states of affairs it is used to describe. In this sense truth consists of ‘objective metaphysical structures of the world, structures that are not wholly a function of what language users believe’ (Shalkowski 1994:4771). Therefore, we cannot use this type of truth readily as a criterion in our daily inference. The criterion we use in our daily cognitive activities including language comprehension is the second type of truth, which is ‘the coherence of the elements in a system of belief’ (ibid.). In this sense, truth is equivalent to acceptability of an assumption used in computation of thoughts, which is the matching of a new assumption to a schema or a theory which is accessible to the reasoner as part of the context. Though ‘coherence and usefulness are very generally accepted *criteria* for truth’ (Gregory 1987:783), each individual’s criteria for a certain issue are limited by their knowledge storage and retrieving mechanism. That is, one may not know a theory or schema so that one cannot use it as the criterion of truth on a certain occasion; also, one may know a theory or schema but fail to recall it on a certain occasion.

The notion of truth has two major functions in daily inference. First, it ensures the smooth running of the reasoning chain. If the conclusion of each argument is regarded as true, then the transition from the conclusion of an earlier argument to the premise of the next argument is potentially guaranteed. Second, it also affects the direction of the chain of reasoning. If a conclusion is regarded as false, then it will be discarded and will not be used as a premise for a further argument. If a premise used is being challenged as not being true (as in the experiment with the scenario of the ‘cinema murder’ above), an alternative will be sought, which will result in a different chain of arguments and, accordingly, different conclusions.

Geurts (1988) pointed out:

Naturally, people develop taxonomies and use them extensively in their everyday reasoning. . . . the acceptance of default rules (and hence of generics) is critically dependent upon the taxonomies that we in fact employ. . . . the ontology that one endorses constrains the default rules that one is willing to accept. . . . Whether or not an ontology is something inherent to the world, it is for us to accept or reject it and make up one of our own. What counts is the ontology that we presuppose, not the one that is objectively correct. (p. 159 - 160)

Along this line, we may be able to build up a notion of truth which can account for our intuitions on this matter because, after all, such a notion of truth plays an indispensable role in inference³². In our everyday cognitive activities, our intuition of truth is related to acceptability of stimuli. For example, [3a] is much more acceptable than [3b] because most of us would think that [3a] is true while [3b] is not.

[3a] Birds keep their bodies warm with their feathers

[3b] Birds do mathematics

Though we might have never seen or heard these two utterances before and on the spot we have no way of proving their objective truth or falsity, we can still intuitively make the decision. If we want to capture our intuition of truth as a notion relating to narrow content, we can informally define it as the acceptable conclusions of inference supported by our own belief system. To illustrate this point, let's look at a possible procedure of reasoning about [3a] and [3b].

[3a'] i. Fluffy stuff insulates heat
ii. Feathers are fluffy stuff

iii. therefore, feathers insulate birds' body heat and keep them warm (and therefore [3a] is acceptable and true)

- [3b'] i. Mathematics is an activity performed by highly intellectual beings
ii. Birds are not highly intellectual beings

-
- iii. therefore, birds do not do mathematics (therefore [3b] is not acceptable and not true)

Given that the hearer has [3a'i] and [3b'i] in his belief system and he also takes modus ponens and modus tollens (cf. Rips 1988) as acceptable reasoning formulae, 3a' and 3b' show some possible reasoning steps he will take in acceptability judgments, which are common in everyday inference.

The truth of the conclusion in an argument depends on the truth of the premises and the validity of the formula. Premises are usually an individual's or a community's beliefs about how the world is and those beliefs may change. For example, a new report on an ecosystem sealed in a cave for 5 million years, which depends on chemistry, rather than sunlight (*The Independent* 14/2/96), is considered a challenge to the dominant belief that all living things depend on the energy of the sun. But such debate about the broad content of the world shouldn't be the concern for a theory of utterance understanding. It is just a matter of replacing the old premise with a new one in an argument, if one wants to do so, which accordingly yields a different conclusion.

I have just clarified the notion of truth in daily inference, which is based on narrow content of meaning and beliefs acceptable and accessible to the addressee at the moment of interpretation. It is to be distinguished from the notion of truth based on broad content, involving the matching between a representation and the states of affairs it is used to represent.

2.2.2.2 the soundness of an argument

There are two factors which make an argument sound. On the one hand, the forms of argument should be valid, which means they should be based on some commonly used syllogisms³³. On the other hand, people have some acceptability requirements for the premises they use in arguments.

An argument in everyday reasoning consists of one conclusion and at least one premise, which is used to justify the conclusion³⁴. In order for the premises to be accepted as part of a sound argument, they have to meet three requirements. First, they should not contradict each other and should be taken as true (either as the conclusion of an earlier sound argument, or as part of the reasoner's beliefs). If their truth value is in doubt, the soundness of the argument is affected.

Second, the relation between the conclusion and its premises should match the corresponding schema that the reasoner has recalled on the occasion. Let me explain this point with the same example of Johnson-Laird's (1988:435), quoted here as [1].

[1] The victim was stabbed to death in a cinema. The suspect was on an express train to Edinburgh when the murder occurred.

According to Johnson-Laird and Anderson, most subjects in the experiment readily concluded that the suspect was not guilty. Some reasoning processes similar to those in [2] may have gone through the mind of these subjects.

[2a] If a person was on a train to Edinburgh when the murder occurred in a cinema and there was no cinema on the train, then the person cannot have been the murderer.

The suspect was on a train to Edinburgh when the murder occurred in a cinema and there was no cinema on the train.

Therefore, the suspect cannot have been the murderer.

[2b] If a person cannot be in two places at the same time and the cinema where the murder took place and the train which carried the suspect to Edinburgh were two places, then the suspect cannot have been the murderer.

A person cannot be in two places at the same time and the cinema where the murder took place and the train which carried the suspect to Edinburgh were two places.

Therefore, the suspect cannot have been the murderer.

The arguments in [2] are expressed in a form of conditional reasoning. To put the same arguments in a different way, they will look like [3].

[3a] The suspect cannot have been the murderer because when the murder took place in a cinema, he was on a train to Edinburgh and there was no cinema on the train.

[3b] The suspect cannot have been the murderer because a person cannot be in two places at the same time - the train to Edinburgh which the suspect was on and the cinema where the murder took place are two places.

The reasoner will believe that the premises (e.g. the 'because' clauses in [3a] and [3b]) support the conclusions if the connection between the premises and the conclusions fits in the corresponding schema that the reasoner has recalled on the occasion. In the cases of [3a] and [3b], for example, if the schema of 'murder' that the reasoner has access to is one in which one person kills another with a knife or a gun on the same location, then such a schema will match the connection between the premise and the conclusion set up in [3a] and [3b] and, therefore, the reasoner will believe that the premises in [3a] and [3b] support the conclusion³⁵.

On the other hand, if we hear the argument in [4] and cannot produce a mental schema to match the relation between its premise (i.e. the 'because'-clause) and its conclusion, then we will not believe that the premise supports the conclusion and will conclude that it is not a sound argument.

[4] Dogs make good pets because oil has been discovered in Mexico (from Halpern 1990:308)

Clearly, people's intuition about whether some premises support a conclusion, or whether some premises provide reasons for them to believe the conclusion is a matter of whether the connection between the premises and the conclusion matches the related schemas that they have access to when they are reasoning. That is to say, if the reasoner is persuaded to accept some alternative schema, then the previously believed argument will turn out to be less credible. For example, Anderson and Johnson-Laird's experiment showed that if people were challenged about the validity of their initial reasoning, they would search for alternative schemas, which led to conclusions drastically different from what they had reached initially, as shown in [5].

[5a] If a person has an accomplice, then the person can still cause the murder even though the person is not on the site.

The suspect may have had an accomplice.

Therefore, the suspect may still be the murderer.

[5b] If a person uses a radio-controlled robot, then the person can still cause the murder even though the person is not on the site.

The suspect may have used a radio-controlled robot.

Therefore, the suspect may still be the murderer.

[5c] If a person uses a post-hypnotic suggestion that the victim stab himself during a certain climactic scene in the film, then the person can still cause the murder even though the person is not on the site.

The suspect may have used a post-hypnotic suggestion that the victim stab himself during a certain climactic scene in the film.

Therefore, the suspect may still be the murderer.

The conclusions in [5] are the opposite of those in [2] and, nevertheless, both of the opposite conclusions are based on the SAME information provided in [1]. What is different is the context the reasoner has brought in to process the given information. Though certain mental schemas are less accessible than others for a particular reasoner on a particular occasion, when they are activated and accepted, they will have the credibility to overturn the previous conclusion.

Whether one finds the premises support the conclusion in a causal argument like the one in [6] solely depends on whether one can produce a credible theory or schema to account for it. The difference between [6] and [4] (which is considered nonsense in Halpern 1990:308) is whether there is a theory lying behind it to support it.

[6] There was a storm in London yesterday because a butterfly in the African rain forests had flapped its wings.

The schema supporting [6] is a claim made in the theory of chaos, whereas so far there isn't any theory trying to explain the connection between the two states of affairs described in [4].

The third requirement for the premises to justify a conclusion is that the premises must be not only considered to support the conclusion but also strong enough. For example, in order to convince people, advertisers often have to claim that their goods are much cheaper and much better than any others of the same type. It is certainly not enough to say that one's goods are just slightly better than all the others in order to persuade customers to switch their loyalty. The contrast between the arguments in [7a] and [7b] show their difference in strength.

[7a] The relationship between Woody Allen and Mia Farrow is coming to an end because Mia Farrow is making a film in Ireland but Woody Allen still lives in New York.

[7b] The relationship between Woody Allen and Mia Farrow is coming to an end because Mia Farrow and Woody Allen are fighting in court.

As a result, [7a] is a weaker argument than [7b].

To summarise, we can see that in daily reasoning the soundness of an argument is closely related to the reasoner's knowledge and belief system rather than to some objective truth.

2.2.2.3 monotonic and nonmonotonic reasoning

Inferences based on traditional syllogisms are categorical and are thus often demonstrated with some circle diagrams. Consider the syllogism in [1].

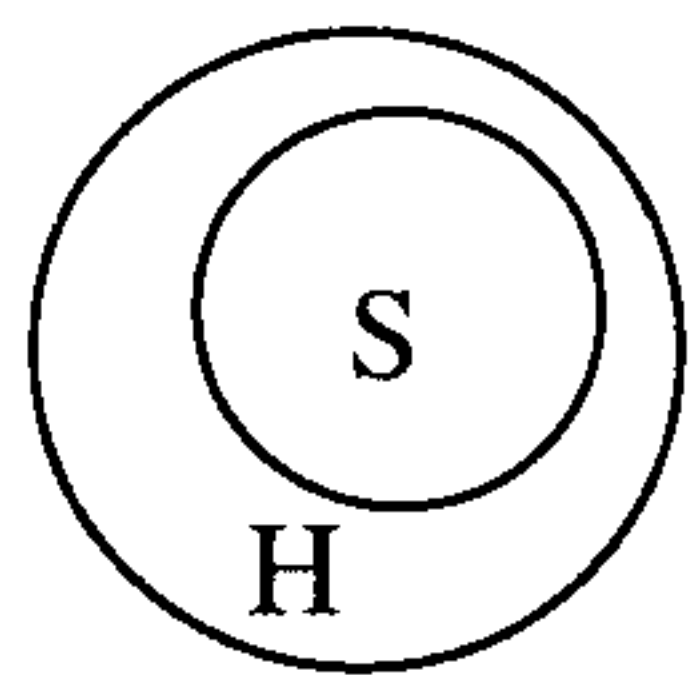
[1a] Socrates is human

[1b] All humans are mortal

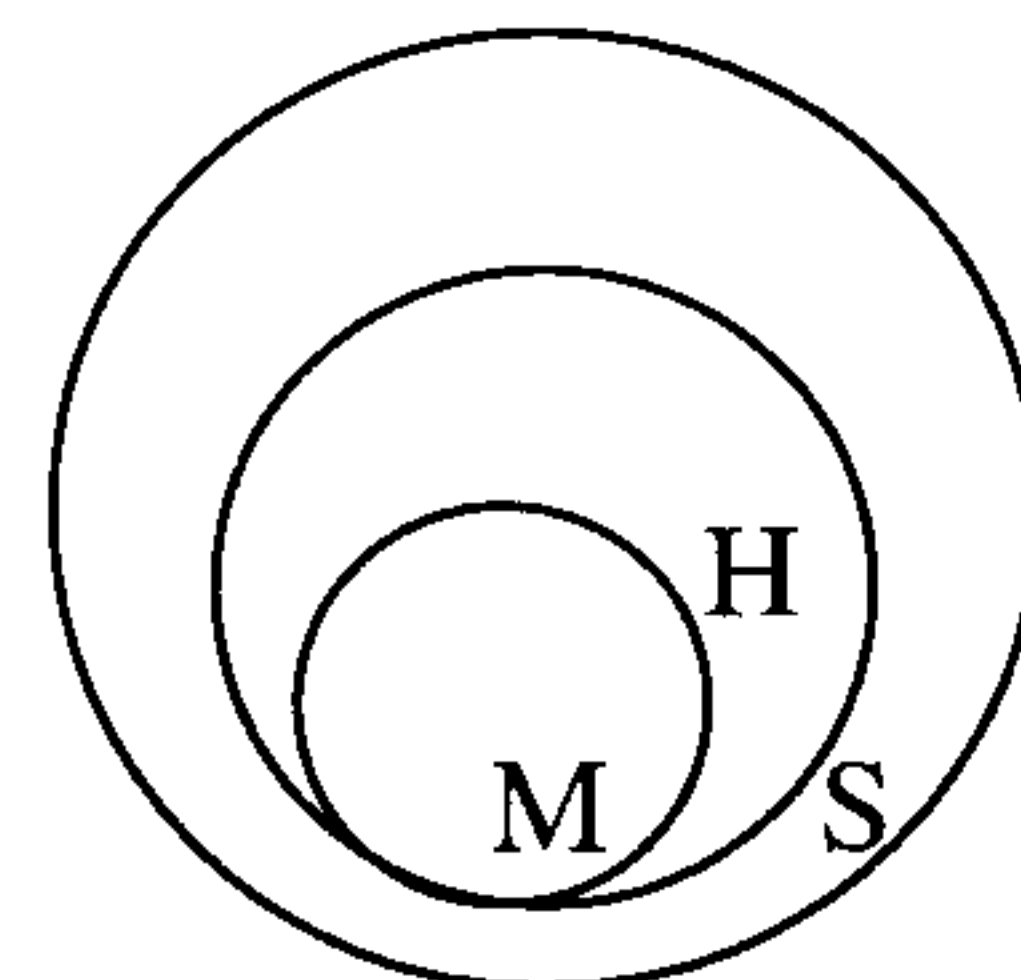
[1c] Therefore, Socrates is mortal

Suppose Circle S represents Socrates, Circle H represents all humans, and Circle M represents the set of all the things that are mortal. The first premise [1a] states that the entity Socrates is a member of the set of humans. So Circle S should be inside Circle H to match the state of affairs described in [1a], as shown in [2a]. The second premise [1b] states that the set of humans is a subset of the set of mortal things. So Circle H itself should be inside Circle M to match the state of affairs described in [1b]. Now look at the resulting figure [2b]. Since Circle S should be inside Circle H and Circle H should be inside Circle M, Circle S is necessarily inside Circle M as well. The validity of a syllogism ensures that if its premises are believed to be true, then necessarily its conclusion keeps the same truth value. This guarantee of truth value transferred between the premises and the conclusion in a valid syllogism is what makes the deductive process categorical.

[2a]



[2b]



If the statement in [3] and the premises [4a] and [4b] are taken to be true, then the conclusion [4c] is also necessarily true, though the conclusion, which is the same as [1c], is deduced from premises different from those in [1]. This is because [1a] and [1b] are entailments of [4a] and [4b] and they are connected by the implicit [3]; thus [4a] and [4b] can play the same roles as [1a] and [1b].

[3] All humans are living things.

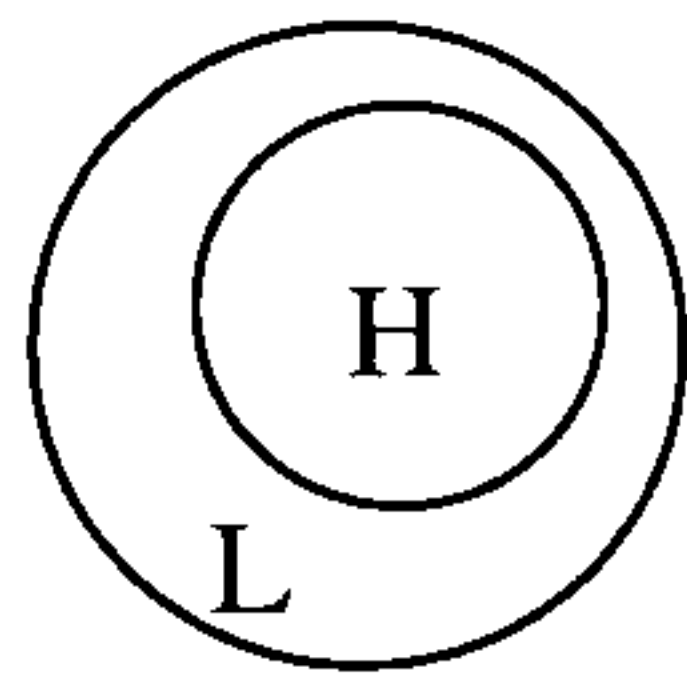
[4a] Socrates is a living thing

[4b] All living things are mortal

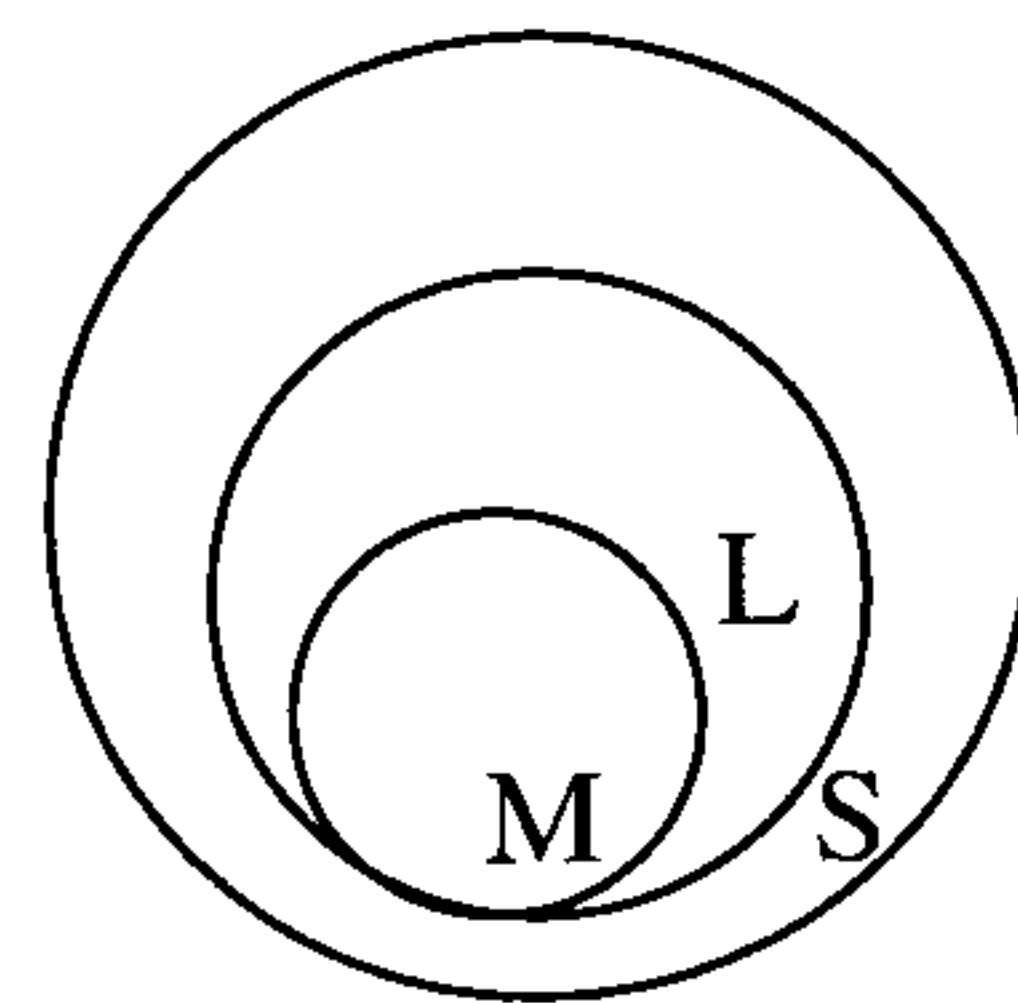
[4c] Therefore, Socrates is mortal

The statement in [3] is illustrated with circle diagrams in [5a] and the syllogism in [4] is in [5b].

[5a]



[5b]



The characteristic of syllogisms described above is called monotonicity, which shows the categorical relation between different circles representing different entities in arguments. While syllogisms are characteristically monotonic, the reasoning that humans perform in making everyday decisions is often not. For example, in encountering the sign outside the residence of giant pandas in a zoo, which says 'Class: Mammalia; Order: Carnivora', a sensible person will find that the conclusion of a categorical deduction based on this piece of information, [6c], clashes with one of his existing beliefs [6d].

- [6a] Giant pandas are carnivorous
[6b] The word 'carnivorous' means 'flesh-eating'
-

[6c] Therefore, giant pandas are flesh-eating

[6d] Giant pandas eat only bamboo

If [6d] is considered to be stronger than [6c], then [6c] will be discarded and a conclusion like [6e] will be reached on the basis of combining [6a], [6b] and [6d]:

[6e] Giant pandas are Carnivora which are not flesh-eating.

This process is different from categorical monotonic reasoning in that we supply the inference with further premises in order to avoid reaching a default conclusion that is taken as incorrect by our beliefs. In our daily inference we tend to reject conclusions which we do not hold to be true, since they are of no use to us. In doing so, we may employ some new premises which we believe more strongly than we do the conventional semantic entailments. The importance of nonmonotonic reasoning lies in the fact that most of the relations in the world are not categorical but our knowledge storage, for the reason of cognitive economy, consists of seemingly categorical statements like 'birds fly'³⁶. If a statement happens to be about part of a well-defined system, such as 'Even numbers are divisible by two', then we know it will be necessarily true in any inference we need to make, which is part of our arithmetic knowledge. On the other hand, when we are dealing with statements which do not belong to a well-defined system, such as 'Murders are committed by the murderer in the vicinity of the victim' and 'The word "carnivorous" means "flesh-eating"', we may well act differently. We may slip into a default conclusion, as shown at the beginning of Johnson-Laird and Anderson's experiment, or we may be alerted by the obvious contradiction between the default conclusion and some assumptions that we

strongly believe, such as ‘Pandas live on bamboo’ and reject the less credible default conclusion.

Geurts (1988) claimed that the kind of consistency involved in default logic is ‘something akin to but nonetheless different from ordinary logical consistency’, and therefore, while ‘[7a] and [7b] [my numbering] are mutually exclusive’, [7a] and [7c] can perfectly well be maintained together’ ‘[s]ince [7c] is more specific than [7a]’ (p. 160).

- [7a] All mutants have five legs
- [7b] All mutants have six legs
- [7c] All black-nosed mutants have six legs

In fact the origin of the special characteristic of default rules, what Moreau called (1988:338) ‘defeasibility’ and what Geurts called a ‘different kind of consistency’, lies in the nature of cognition, not in default rules themselves. Let us hypothesize that for the sake of economy, we accept certain statements as true and use them frequently in our daily inference. Default rules are only formulae used to represent this aspect of cognition. For example, except for certain bird experts³⁷, we usually store information about birds like [8], instead of [9], though [9] is a more accurate reflection of the world.

- [8] Birds fly³⁸.
- [9] Some birds fly and some don’t.

For this reason, general readers will not accuse *Reader’s Digest Great Illustrated Dictionary* of telling us lies in the following passage:

- [10] Although cold-blooded, fish live in temperatures from 38 degrees C down to freezing. (‘Fish: inhabitants of a watery planet’)

even if when we know that ‘some sharks, including the great white, the mako and the thresher, are warm-blooded’ (*International Herald Tribune* Dec. 10, 92). It is much more economical and feasible to use assumptions like those made in [8] and [10] in our daily inference, and they do generate results accurate enough for our daily purposes. For example, an inference made on the basis of [10] will generally satisfy our curiosity about the question why mammals in cold weather need furs to keep themselves warm and fish don’t.

Based on the above analysis, we may say that the so-called ‘defeasibility of default logic’ is in fact the compromise made by human beings with reality for the sake of cognitive economy. That is, we tend to store assumptions which are less true to the world but accurate enough for our daily purposes for conveniences. Statements like [11] and [12] needn’t be organised at the same degree of accessibility in our general knowledge, as long as they can be produced on different occasions to assist inference for different purposes.

[11] Birds fly

[12] Penguins don’t fly

For example, when we want to understand why so many pigs are raised in China, we may be satisfied with a statement like [13].

[13] The Chinese consume a lot of pork³⁹.

However, when we are considering the situation of the Chinese Muslims, a different statement, like the one in [14] will be more useful to us.

[14] The Chinese Muslims don’t eat pork.

Though [13] and [14] are logically contradictory because we cannot draw a circle diagram to accommodate the two statements in a coherent way, we tolerate their co-existence in our general knowledge. The question of consistency is irrelevant because statements like [13] and [14] may be stored at different degrees of accessibility and, more importantly, are used to achieve different goals.

If default rules really represent, as Geurts claimed, a ‘different kind of consistency’, then this different kind of consistency itself should be consistent and be able to manifest itself wherever default rules appear. However, one cannot say the same about [15] as Geurts has said about [7].

[15a] All even numbers are divisible by two

[15b] All even numbers are not divisible by two

[15c] All even numbers below 10 are not divisible by two

With well-defined, thus intrinsically universally quantified concepts, we cannot have the same range of acceptable examples as the one that Geurts has presented in [7], a case involving inductively acquired concepts. We can still establish the logical exclusiveness between [15a] and [15b], but [15a] and [15c] cannot co-occur if we want to maintain the arithmetic system. The reason is that ‘even numbers’ and ‘even numbers below 10’ are concepts valid only in one well-defined system and in such a system there is only one kind of consistency - the logical one.

Geurts’s (1988:170) following analysis also needs to be questioned: since we know that ‘actually only a very small part of the Dutch population consists of sailors’, the default rule underlying [16a] shouldn’t be [16b], but [16c].

[16a] Dutchmen are good sailors.

[16b] IF x is a Dutchman THEN x is a good sailor.

[16c] IF x is a Dutchman and x is a sailor THEN x is a good sailor

Geurts believes that his formula in [16c] is applicable to many other cases such as [17] and [18].

[17] Italians are bad fathers.

[18] A sparrow lays two or three eggs.

Geurts hopes that his formula will make up for the ‘stylistic’ omission in the original sentences. However, Geurts’s formula cannot even cater for his own example, quoted here as [19].

[19a] Frenchmen are brilliant cooks.

[19a] at least has two interpretations, as shown in [20]:

[20a] Frenchmen who are professional cooks are brilliant at their job.

[20b] Frenchmen cook brilliantly (e.g. in a domestic context)

Geurts’s formula only matches [20a]:

[20a’] IF x is a Frenchman and x is a cook THEN x is a brilliant cook.

It excludes the possibility of [20b]:

[20b’] If x is a Frenchman and x cooks domestically, then x cooks brilliantly.

Since there are possible alternatives, a rigid formula cannot replace inference with the context in actual interpretation. Nor can Geurts’s formula cater for such examples as the following:

[21] The Chinese eat dog. (from Palmer 1981:127)

Obviously, the application of Geurts's formula to [21], [21'] is not its intended interpretation:

[21'] IF x is a Chinese and x eats THEN x eats dog

In this section I have introduced two kinds of reasoning: monotonic and nonmonotonic. While it is economical for people to store their knowledge in a categorical way, which is also how monotonic reasoning works, they have to appeal to nonmonotonic reasoning from time to time if they want to make sensible decisions in their inference with the information from the surrounding world.

2.4 summary

In this chapter I have introduced relevance theory, the pragmatic framework I have adopted in the thesis. Relevance pragmatics emphasises the process of establishing the proposition expressed by the utterance and the inference involved in it. Linguistic decoding and pragmatic inference are two aspects of verbal interpretation and the criterion of being consistent with the (second) principle of relevance is the key to explaining how the interpretation process is organised and when it naturally stops. In this chapter I have also explained the content and inferential patterns that I am assuming we use in utterance interpretation. The type of meaning we are concerned with in language comprehension is narrow content, which is what we can have in our mind. In mental computation, we employ certain rules which we think are sound because they ensure that the result we get from our reasoning process is good enough for realising our cognitive goals.

Chapter III

Interpreting Noun Phrases (I)

Formal Features and Textual Reference

Linguistic interpretation involves the addressee's linguistic and encyclopedic knowledge, his general reasoning ability and his pursuit of relevance in ostensive-inferential communication. In the last chapter, I have explained the role of inference and the principle of relevance in the general interpretation process. When we come across a noun phrase in discourse, we process its linguistically encoded information in the context, guided by the pragmatic principle, to recreate a mental representation of its interpretation intended by its communicator. In this chapter I will enumerate ways of interpreting noun phrases so that we can see more clearly what unique characteristics generic interpretation has against this background. Since there are not any explicit syntactic features of an NP which will directly lead us to a generic interpretation, we do not know if an NP is interpreted generically until we have completed the whole process of enriching the linguistic input into a conceptual representation. I describe this process by focusing on three major issues:

- recognizing the formal features of a noun phrase
- identifying its interpretation clues, and
- recovering its intended interpretation

Each aspect will be discussed in detail with emphasis on issues relevant to generic reference, and some implications of the treatment will be discussed at the end of this chapter.

3.1 formal features of noun phrases

There are four kinds of formal features of NPs:

1. the type of the head
2. definiteness
3. number
4. modification (excluding the determiner).

These features alone cannot determine the interpretation of an NP but, together with contextual clues, they correlate with certain interpretations. Also, if we want to deal with the issue of reference of NPs in natural language processing, this group of features can most easily be identified by an automatic grammatical tagger.

3.1.1 types of NP head

In this thesis I confine referring expressions to nominals, the majority of which are noun phrases. The head of an NP can be realised by different items, as shown by the underlined words in the following:

nominal adjectives:

common:

- [1] The lesson, of course, is never to disregard the familiar in case it holds a wonderful secret (W2D-019-84)

proper:

- [2] Ten days into the Gulf War and the British are once again learning what it is like to man the home front (W2E-007-11)

nouns:

common:

- [3] There was something we ate in Turkey which was fried aubergines and yoghourt (S1A-063-19)

proper:

- [4] Mike Heafy uhm was a man who worked uhm for Allied Dunbar (S1A-003-42)

numerals:

- [5] well they were certainly two fifty (S1A-008-223)

pronouns:

- [6] it's a forum where we and they all of us can get together (S1A-004-109)

I will discuss the implications of different types of NP heads in this chapter and Chapter VI.

3.1.2 definiteness

The role of determiners has been one of the focal points in the study of generics¹. Some researchers believed that a certain determiner, such as the definite article or the indefinite article, is THE generic determiner (e.g. Burton-Roberts 1976; 1977; cf. 5.6.1 and 5.6.2). Now most researchers agree that generic expressions can have various forms of determiners (cf. Krifka et al. 1995) and whether an NP is definite or not is not sufficient for us to decide whether it takes a generic interpretation. Nevertheless, definiteness is one of the formal clues we can first use in the interpretation of an NP (cf. 3.2).

Definiteness is usually characterised on a syntactico-semantic basis. There is a range of expressions which are regarded as definite, including NPs preceded by the

definite article *the*². Zwarts has mentioned two tests for identifying a definite NP. One is that it is generally unacceptable for it to be the notional subject in an existential sentence³. For example,

[1] *There is *the rose / John / it* in the garden.

The other is that only a definite NP can be the complement of a partitive expression ‘*some of ...*’. For example,

[2a] I had some of *the peaches / *many peaches*

[2b] I had some of *the orange juice / *juice*

In automatic grammatical tagging, definite NPs can be recognized by their formal marks: the definite determiner of a common noun phrase and the capital letter in a proper noun (when it is not preceded by an indefinite determiner)⁴, and by an inventory of definite pronouns.

Forms of the definite noun phrase can be summarised as follows:

I. with a definite determiner:

singular

plural

the definite

article: *the X*

the Xs

pronoun:

demonstrative:

this/that X

these/those Xs

possessive:

my/your/her/his/its/their X

my/your/her/his/its/their Xs

personal:

we Xs

universal:

both Xs / all the Xs

negative:

neither X

genitive: *John's X*

John's Xs

II. without a determiner:

singular

plural

pronouns:

demonstrative:

this/that

these/those

personal:

I/me/mine/you/yours

we/us/ours/you/yours

he/him/his/she/her/hers

they/them

it/its

universal:

both

negative:

neither (of the (two) Xs)

none of the Xs / her / his ... Xs

proper name: *John*

Forms of the indefinite noun phrase can be summarised as follows (Cf. Quirk et al. 1972:207):

I. with a indefinite determiner

	singular	plural
the indefinite article: <i>a X</i>		<i>Xs</i>
indefinite pronouns:		
assertive:		
<i>some X</i>		<i>some/many/enough/several Xs</i>
nonassertive:		
<i>any/either X</i>		<i>any Xs</i>
universal:		
<i>each/every/all X</i>		<i>all Xs</i>
interrogative:		
<i>which X/what X/ whose X</i>		<i>which Xs/what Xs/ whose Xs</i>
numeral:	<i>one X</i>	<i>two / three ... Xs</i>

II. without a determiner

	singular	plural
indefinite		
pronouns:		
assertive:	<i>some/something/ somebody/enough/one</i>	<i>some/several</i>
nonassertive:	<i>any/either</i>	
universal:	<i>each/every/all</i>	<i>all⁵</i>
negative:	<i>none / neither</i>	
interrogative:	<i>who/whom/whose/which/what</i>	

Some studies have analysed definite and indefinite NPs as semantically ambiguous (e.g. Fillmore 1966; Wilson 1978). In this thesis I take the position that neither a definite NP nor an indefinite NP is semantically ambiguous; various types of reference or uses of these NPs 'arises from the way in which speakers and hearers interact in communication' (Cormack & Kempson 1982(1991:546) and can be explained by pragmatic principles and inference⁶ (see Chapter IV for an account of how the encoded meaning of a noun phrase is enriched by inference with the context).

3.1.3 number

Nominal adjectives do not have formal number contrast, as shown by the examples in [1]:

- [1] The low paid would suffer most from these proposals of the Commission (S1B-057-57)

- [1] The ideal exercise, and one which almost anyone can do any time anywhere, is walking. It is suitable for the busy, the unfit, and the lazy. (W2B-022-80f)

Sometimes, their number can be inferred from the co-text. In [2a] the referent of 'the self-employed' is co-referred by the plural pronoun 'they'. In both [2a] and [2b] the verbs used after the nominal adjectives are plural while the verb in [2c] is singular. The partitive 'each of' in [2d] implies that the expression 'accused' is plural.

- [2a] The self-employed *are* vigorous self-maintained people and *they* want simply to be allowed to get on with wealth creation and job creation unencumbered by the sort of things that the honourable lady's asked for (S1B-059-81)
- [2b] If Manila today is a city of potholes and leaking water-mains peeling facades brown-outs due to power-cuts and uncollected rubbish it's because the rich *have* blocked efforts to raise taxes which are barely half what they are in Singapore and Malaysia (S2B-039-61)
- [2c] in fact if anything the opposite *is* true (S2B-032-47)
- [2d] In *R v Ahmed Shah Moied* (1987) *each of* the accused had organised or participated in the abduction and detention of a 20 year old girl, Zahida. (W2B-020-15)

The overt number contrast in noun phrases can be shown by the underlined words in the singular and plural examples:

common nouns:

singular:

- [3a] There'd been a woman in hospital, Isobel recalled, a depressive, who'd always imagined noxious smells. (W2F-020-16)

plural:

[3b] by the mid-80s samplers had established their ability to generate copies of real instruments or sounds from nature (S2B-023-24)

[3c] Third , to campaign on sovereignty might attract some votes from older Britons who still see the Continent as some form of threat. (W2E-004-61)

non-count:

[4] it could be chicken in beer and wine couldn't it (S1A-022-13)

proper nouns:

singular:

[5a] It sounds like something out of Proust (S1A-009-264)

[5b] Do you think the Latimers would mind if I brought a Uher along? (W2F-020-178)

plural:

[6] I asked you to the John Latimers' party because I hoped I could take you out again. (W2F-020-157)

Numerals can also have formal number contrast:

cardinal:

singular:

[7] I'll see you on Thursday at around seven thirty. (W2F-020-173)

plural:

[8] And she I think had been involved in sort of political activities in the fifties
(S1A-014-116)

ordinal:

singular:

[9] I presume this is the first (S1A-002-112)

plural:

[10] Well I 'm so, so pleased about your 1st, not that I doubted you deserved it, but
with these degree things surprising things can happen, like 3rds!!! (W1B-005-
55)

The number feature affects our inference in reference assignment, which will be discussed in the following sections. In the study of generics, the number feature contributes to the subclass generic interpretation (cf. 6.3).

3.1.4 modification of a noun phrase

In general, concepts represented by a single word, such as the underlined NP in [1a], are more basic in that they represent entities that the speech community has long recognised as sufficiently important to be differentiated from the rest of the world in daily life (cf. Rosch 1978). Multi-word expressions usually represent concepts which are either

relatively later comers in the cognitive life of the speech community, like the underlined NP in [1b], or something constructed ad hoc, like the underlined NP in [1c]:

- [1a] As much as any animal can be, the saola is publicity shy. For thousands of years, small herds of these gentle, goatlike creatures munched their way through the mountainous grasslands of Indochina, drawing so little attention that the outside world had no hint of their existence. (11/30/94 *International Herald Tribune*)
- [1b] Often called galagos, bush babies are small nocturnal primates of the African woodlands. ('bush baby', *Reader's Digest Great Illustrated Dictionary*)
- [1c] Women with missing fathers look for every man to replace what they have never had - strength and protection - without allowing for the possibility of flaws. (*The Sunday Times* 11 June 1995)

The NP 'the saola' in [1a] has a single-word head and the NP 'bush babies' in [1b] has a compound as its head. In [1c], the underlined expression has been freely formed and not as stable as the previous two. The generalizations in [1a] and [1b] are made of the classes which the underlined head nouns denote while the generalization in [1c] is made of some sub-class of what the head noun denotes (cf.6.3 for sub-class generics) .

In terms of construction, instead of being post-modified, like the underlined NP in [1c], pre-modification is also common, as shown in [2]:

- [2] By the year 1700 the German-speaking countries have once more become articulate. (K. Clark, *Civilisation*, BBC & John Murray, the opening sentence of Ch. 9)

Modified noun phrases can be preceded by different articles, as shown in [3]; [3a], [3b] and [3c] are generic, to be contrasted with the non-generic [3d]:

- [3a] The traditional male costume has taken a hammering since the yuppie decade. It has been made in floppy fabrics and sloppy shapes and broken up into mismatched jacket and pants. ('A Return to Structure and the Suit', *International Herald Tribune*, July 5, 94)
- [3b] An adult who has been abused, in whatever way, is likely to let that experience influence his or her own parenting practices, and the way in which the practices of other people are viewed. (W2B-017-81ff)
- [3c] In particular, as Woody Allen's film 'Annie Hall' noted in 1977, art museums are prime places for single people to make contact. (*International Herald Tribune* Aug. 14, 1995)
- [3d] Children from South Korea and a number of western countries, among them America and Britain, were given a series of tests to assess their skills in mathematics. All the children were aged 13 and the tests were the same for each group. (*The Economist* Oct. 8, 94)

In [3a], [3b] and [3c] a generalization is made of the referent of the underlined NPs, which is a sub-set of the class the head noun denotes because it is restrictively modified and thus its referent is also restricted, while in [3d] a particular set of individuals involved in a particular event is referred to and hence the underlined expression is non-generic.

Some researchers accept only 'well-established classes' as generic⁷ and freely formed nominal expressions like those quoted above are mostly to be excluded. Such generic expressions have also been termed 'instance[s] of limited generic reference' (Quirk et al. 1972:153). The feature of modification will help to distinguish this set of data from the rest.

3.2 clues for interpreting noun phrases

The formal features of a noun phrase, discussed in the last section, are context-independent. A phrasal nominal expression has other clues related to its interpretation and they can be identified only when an NP is in actual use.

The issues relating to the interpretation of a nominal expression are:

- a. Is it an introductory expression or a dependent co-referring expression?
- b. Is its immediate referent a mental representation or a textual antecedent?
- c. How is a definite introductory expression different from an indefinite one?
- c. If its immediate referent is a mental representation, is it established deictically or is it established on the basis of the hearer's general knowledge?
- d. If its immediate referent is a textual antecedent, is it anaphoric or cataphoric?

3.2.1 introductory and dependent co-referring expressions

When the speaker introduces an entity with a nominal expression into the universe of discourse, this expression is an **introductory expression** and the entity is its **representational referent**, which can be something or somebody in the real world or construction of mental representation. In the same discourse, the speaker may also use other expressions to talk about the same entity. All of these expressions are **co-referring expressions**, which form a **co-referential network**, and the relationship among them is textual reference (see further on this in 3.2.5). The introductory expression, which is first established as a reference point in the network, serves as the textual antecedent for other co-referring expressions, which are therefore in this sense dependent. In example [1] I have indexed some expressions with superschemasto indicate that they form two distinctive networks and I have italicised the introductory expressions and underlined the **dependent co-referring expressions**.

[1] *A van driver from Hendon*ⁱ emerged as the most envied white knight in Britain today after heⁱ tenaciously took on a gang of teenage girls who robbed *actress Elizabeth Hurley*ⁱⁱ at knifepoint.

The 32-year-old manⁱ, who lives in Aerodrome Road, gave chase when heⁱ saw the glamorous girlfriend of actor Hugh Grantⁱⁱ being mugged in a street near herⁱⁱ Earls Court home last night - even though heⁱ did not recognise the actressⁱⁱ at the time. (opening of a news bulletin in *Evening Standard*, 24/11/94)

In non-generic discourse, the most striking characteristic of a co-referential network is that all the dependent co-referring expressions are definite NPs. The definiteness of these NPs ensures the continuity of the network and all the dependent co-referring expressions can therefore be regarded as stemming from their textual antecedent - the introductory expression, whether it is definite or not itself. When the interpretation of a pronominal, like 'he' and 'her' in [1], depends entirely on its nominal antecedent, the pronominal is a dependent expression in this co-referential network. Its immediate antecedent may be the introductory expression or another non-pronominal expression in the network. When a definite description is used as a subsequent co-referring expression to co-refer with the introductory expression, like 'the 32-year-old man' and 'the actress' in [1], it depends on its antecedent to relate itself to the shared representational referent. Unlike the pronominals, its descriptive content may contribute to the reader's representation of the referent.

When a proper name and a definite description (including NPs with proper nouns, like 'the Putney MP', to which normal syntactic rules apply; cf. Lehrer 1994:3372) are in a co-referential relation, the proper name is generally taken as the introductory expression, as shown in [2].

[2a] *Liz Hurley* was walking to the Chelsea home she shares with 'Four Weddings and a Funeral' heart-throb, Hugh Grant, when she was attacked by the vicious gang of four.

. . . The stunning actress was forced to hand over 10 pounds in cash, but the gang said it wasn't enough. (*Tonight* 11/24/94)

- [2b] *David Mellor* was today accused of two new cases of extra-marital flirtations. The Putney MP⁸ was said to have pestered wealthy Palestinian beauty Mona Bauwens with proposals of marriage. (*Evening Standard* Nov. 8, 94)

However, when an indefinite description and a proper name are used to co-refer to one entity, there isn't anything linguistically coded to indicate the co-referential relation between them. The communicator has to rely on the addressee's knowledge to recover the intended co-reference. [3] is such an example (cf. 3.2.6 for more details on inference). However, following our treatment of the examples in [2], we regard the proper name as the conceptual address for the representation of the referent that the addressee has reconstructed.

- [3] On Thursday *a dark-haired, neatly dressed British woman* and her bearded, bespectacled German husband will stand before five black-robed judges as the verdict is read out on one of the biggest and potentially most damaging spy cases in Nato's history ...
For *Ann Rupp*, 46, it will draw a line under a story that she still cannot quite believe. It is the story she tells here: ... (opening of a feature in *The Sunday Times* 13/11/94)

An introductory expression may or may not be the textual antecedent of some other expressions, as illustrated by [4].

- [4] This is *James Naughtie* with forty minutes of news and comment ... (beginning of a radio programme, S2B-019-1)

In [4], no co-referring expressions of the underlined NP appeared for the next 30 minutes of the radio programme so the proper name can be regarded as a **lone introductory expression**.

3.2.2 representational referents and textual antecedents

I distinguish two kinds of referents in language comprehension: representational referents are what the communicator uses nominal expressions to talk about while textual referents are antecedents based on which the addressee interprets some other expressions in discourse. The difference between the two can be shown with the following example (The introductory expression is underlined and the dependent ones italicised):

- [1] Even as *he* claimed to be making history, Michael Jackson obeyed the cardinal rule of celebrity; *he* turned up 10 minutes late for the virtual appearance billed as the first ever global ‘simulchat’. *The entertainer* journeyed into cyberspace on Thursday night as part of a PR campaign aimed at relaunching *his* career, still suffering from 1993 allegations that *he* molested a 13-year-old boy. (opening of a news bulletin in *The Guardian* 8/19/95)

We interpret introductory expressions differently from the way we do dependent co-referring expressions. When we interpret an introductory expression, we are first concerned with its representational referent. We try to establish a mental representation of the referent, drawing on information gained either deictically or from our general knowledge, in addition to our knowledge of the lexical meaning of the expression (see details in 3.2.3 & 3.2.4). In this case, the expression ‘Michael Jackson’ is expected to cue a mental representation of the American pop singer MICHAEL JACKSON⁹ in the addressee’s mind, which is the intended representational referent of not only the

expression 'Michael Jackson' but also the rest of the co-referential network: the italicised NPs in [1].

On the other hand, when we interpret a dependent co-referring expression, we have a more immediate concern with its textual antecedent, which co-refers with it to a shared representational referent and relates it to the mental representation of this referent. The introductory expression of the co-referential network may serve as the conceptual address of the representation in the addressee's mind. When we interpret the italicised expressions in [1], we first have to find their textual antecedent, e.g. 'Michael Jackson', and then use it to get access to our representation of the referent. Once such a relation is established, we may add information related to the dependent expression to the mental representation. For example, after reading [1], if we do the textual reference assignment correctly, we now know that Michael Jackson was on some global computer network on Thursday, August 17, 1995, which we may not have known before. This piece of information is not directly connected to the introductory expression 'Michael Jackson' but partly to its co-referring expression 'he' and partly to 'the entertainer'.

Because they lack nominal content, the interpretation of pronominal co-referring expressions depends on their textual antecedent. [2] is another example:

[2] Richards will always be linked to Eliot as co-founder of the modern school of criticism; he accepted the wasteland view of reality and reacted with uncompromising toughness. (*I. A. Richards: his life and work* by J. Russo, London: Routledge 1989, p. 678)

In [2], the representational referent of the introductory expression 'Richards' is I. A. Richards, the great twentieth-century British literary critic, and the expression 'Richards' is the textual antecedent of the dependent co-referring expression 'he'. If we know that the referent of 'Eliot' was male, then 'Eliot' can be a potential candidate as the

antecedent of 'he'. But it is more plausible for 'Richards' to be the antecedent because such a choice doesn't contradict our knowledge about I. A. Richards and T. S. Eliot.

There is a tendency in anaphora that subjects in neighbouring clauses co-refer. However, pragmatic inference may override such a tendency, as shown in [3]:

[3] . . . but you have to take into account the ego. Actors have huge ones and they bruise very easily. (*The Sunday Times* 8 Oct. 95)

Instead of co-referring with 'actors', the subject of the previous clause, 'they' was used to co-refer with 'huge ones', the object of the previous clause, and the writer expected that the reader's knowledge structure and reasoning ability would help him to establish this co-reference.

By contrast, nominal co-referring expressions can contribute more to our inference during the reference assignment. For example, our knowledge of the descriptive content¹⁰ of the expression 'the entertainer' in [1] will help us find its antecedent 'Michael Jackson' if we know, say, 'Michael Jackson is a pop singer' and 'Pop singers are entertainers'.

Sometimes, the communicator will try to help the addressee by giving him explicit clues for co-reference when the antecedent is not so obvious:

[4] Have Continental theorists polluted our intellectual waters or had they (the waters, that is) long ago turned stagnant? (*The Observer* Feb. 4, 96)

3.2.3 definite or indefinite introductory expressions?

Kempson regarded definiteness as indicating ‘guaranteed accessibility’ (cf. 1986:214f), which is what an indefinite NP (cf. Lyons 1977:187ff.) lacks. With an indefinite expression, the only source from which we can reconstruct its representational referent is the descriptive content it encodes. It has been suggested that an indefinite NP encodes an existential quantifier in the universe of discourse¹¹. This is a formal way of specifying the function of such an expression. Informally, the very act of using it to introduce an entity into the universe of discourse establishes the existence of this entity in it¹².

When the communicator introduces an entity into the universe of discourse with an indefinite NP, she doesn’t expect the addressee to realise that she is talking about something known to both of them, except when she uses an indefinite NP referentially (cf. 4.1.4). Actually the entity is presented as unfamiliar to the hearer¹³, as illustrated by examples in [1].

- [1a] I also purchased Antonio a really nice shirt in Benetton sale [sic]. (W1B-005-112)
- [1b] Sixty years ago, several enlightened individuals realised that Britain was losing a valuable opportunity to promote its political interests, as well as its overseas trade advantages. It was neglecting its cultural relations with other countries, and failing to exploit the enormous advantage of the English language. The British Council was founded in 1934 to correct this. It was a turning point. (the opening paragraph of ‘Chairman’s introduction’, *The British Council annual report and accounts* 1993/94)

The underlined NP in [1a] is a singular indefinite expression¹⁴ and that in [1b] is a plural indefinite expression¹⁵. In either example the underlined NP was used to introduce

some entities which the communicator didn't expect the addressee to know before seeing [1a] or [1b].

Since an indefinite NP doesn't signal that its referent is known to the addressee in any particular way, as a definite NP does, the referent not only is regarded as unfamiliar to the addressee, but also may be presented to him as some unidentifiable member(s) of a class when the communicator doesn't care its particular individuality. So the contrast between a definite and an indefinite introductory expression may be two-fold. While a definite NP guarantees the accessibility of its referent and therefore it may be unique in the addressee's mind, an indefinite NP indicates that not only the addressee has to recreate its referent from its descriptive content but the referent may be any indistinguishable member(s) of a class. I use [2] to illustrate my point:

[2] Viennese Vanilla Crescents

50g almonds

50g hazelnuts

280g plain flour

70g castor sugar

pinch of salt

200g butter, cut into flakes

2 egg yolks

75g vanilla sugar

25g icing sugar

Blanch the almonds and hazelnuts in *boiling water* and grate finely. Place the sifted flour in a *mixing bowl* with the nuts, sugar, salt, butter and egg yolks, and knead to a *soft dough*. Wrap in foil or cling film and leave for 2 hours in the refrigerator.

Preheat *the oven* to moderately hot (Gas Mark 5). Form *the dough* a little at a time into *small rolls* the thickness of a pencil. Cut *the rolls* into *5cm pieces* and curve in *crescents*. Bake in the centre of the oven for 10 minutes until golden. Mix *the vanilla sugar* with *the sifted icing sugar* and toss *the biscuits* in *this* while still warm. (*The Best of Baking*, London: Peerage Books, 1992)

Here all the ingredients, most utensils, and some other objects are first introduced into the discourse with indefinite expressions. When they are mentioned again, they are all in the form of a definite NP. In contrast, there are two things which are introduced for the first time as definite: ‘the refrigerator’ and ‘the oven’. For a similar case, Brown and Yule pointed out that since none of these entities have been mentioned before, they ‘might all be held to be “brand new”’ or ‘all of these items are “inferables”, introduced naturally from the “kitchen scenario”’ (1983:187). They conclude that the use of different forms ‘may indicate presuppositions on the part of the speaker’ (ibid., p. 188). But what exactly are these presuppositions?

While we can certainly find indefinite expressions like ‘a mixing bowl’ (see above), ‘a small dish’ (from the recipe quoted in Brown & Yule 1983:187), ‘a baking tray’, ‘a wire rack’ (from *The Best of Baking*), ‘a platter’ (in Prince’s example from *The Joy of Cooking*), ‘a sauce boat’, ‘a serving dish’ (from the recipes in *Elle* July 1993), ‘a heatproof bowl or pan’ and ‘a small knife’ (from the recipes in *Marie claire* July 1993), expressions like ‘an oven’, or ‘a refrigerator’ hardly occur in recipe instructions. This phenomenon cannot be satisfactorily explained by the notion of bridging inference (cf. 3.2.4.4), since all the items mentioned above, whether represented by definite or indefinite NPs, can be found in a kitchen and therefore will be equally triggered as part of the kitchen scenario¹⁶.

This phenomenon has in fact something to do with the different degrees of accessibility related to the different utensils in a kitchen. The above examples show that indefinite expressions have been used to refer to those utensils whose number is usually

more than one in a kitchen and whose individuality is therefore usually less prominent, like bowls or baking trays. By contrast, definite expressions are used to refer to equipment whose number in the kitchen is usually one and therefore whose presence in the kitchen is usually prominent, like the oven and the refrigerator. Recipe writers reasonably assume that this treatment will match the reader's mental schema of a kitchen and effectively reduce the process cost of an utterance. For example, the use of 'the bowl' as the first mention may trigger in the reader's mind a question like 'Which bowl?' and thus cause some unjustifiable processing effort while the use of 'the oven' will normally comfortably cue the only oven in a kitchen scenario. Hence, they use *the N NPs* to refer to these prominent pieces of equipment while they use indefinite NPs to refer to items whose individual identity is not important. The same contrast occurs in many other similar scenarios. For example, we may use 'the president' but 'a minister' as the first mention for some staff members of a government. In the following quote, for the same reason as I have stated above, there is again the contrast between the definite 'the ex' and 'the father' and the indefinite 'children':

Divorce makes children helpless, she [Deborah Moggach, a partner in a step-family] says. 'Ideally, they should live close enough to drop in on the ex, and do the their homework or retreat there from a quarrel, so they don't become carrier-bag children waiting for the father's arrival from his bedsitter. (*The Times* July 5, 1996)

When a proper noun is reclassified or used as a common noun¹⁷, an indefinite NP with such a head may contrast with a definite one in different ways:

[3a] Meet *the latest Kylie Minogue*. This one, she says, is elegant, confident and a serious artist. (the title and sub-title of an interview in *The Sunday Times Magazine*, 26/6/94)

[3b] Apparently never quite sure whether she wanted to be a groovy hipster or a sultry babe, she gave every song she sang, every photograph and every pop promo *a new-look Kylie* to go with it. (ibid.)

In [3a], a definite article has been used in front of a modified proper name. It is the esphoric use of the definite article (see 3.2.4.5), which means that the clues leading to the discovery of the referent of the expression lie within the NP. At least two interpretations compatible with the semantics of such a construction exist. One is to interpret it as a particular member of the group bearing the proper name, whose identity is restricted by the modification, as in the context of [4].

[4] no the funniest thing was the friend of mine yeah the Liz I went to India with
(S1A-018-288)

In [4] the speaker intended to use the modification to distinguish the particular 'Liz' she was talking about from any other people who bear the name 'Liz'. The other interpretation becomes more plausible when the proper name is the name of somebody or something the communicator expects the addressee to know about, such as Kylie Minogue in [3]. In that case, the natural way of perceiving the referent of such an NP is taking it as a facet of the person, i.e. the image of Kylie Minogue contemporary with the interview article and the accompanying photographs. [5] is another example of the second kind of interpretation, which shows that the two underlined expressions are used to refer to two images that a certain Cathy Kellaway presented to the world.

[5] But even amongst the much later photographs it is difficult to believe that the Cathy Kellaway picking raspberries in a sun top and shorts is the same woman as the Cathy Kellaway, matronly in one of the floral outfits, at her silver wedding party in the same year. (W2F-019-54)

When a proper noun is made into an indefinite NP with modification, there exist also at least two interpretations compatible with the semantics of the expression. One is purely existential, introducing into the discourse an unidentified member of the class bearing that name, which is the suitable one in the context of [6].

[6] when I was looking up the centenary of the county councils I noticed *a Mr Mondella* in eighteen eighty-six who knew about these things he was MP for Sheffield pointing out that one small state in Germany had more people taking advanced scientific examinations that we had in the whole of the UK. (ICE-GB-S2A-021-26)

The other one is phasic, which introduces into the discourse a phase of a particular entity referred to by the head noun. In [3b], a phasic interpretation of italicised NP is preferred because we believe that a particular Kylie, not a member of the group of people bearing the name 'Kylie', is being talked about. Therefore, the referent is indiscriminately any of the images that Kylie Minogue has designed for her publicity so far. The same lines of reasoning apply to [7] albeit in this case some particular phases of one entity are being talked about:

[7] *A China with an economy growing at up to 12 percent a year will very quickly change the regional and global balance of power. A China growing at those rates, suspicious of U.S. intentions and collaborating with a Russia embittered toward the West, could constitute a major problem for America. (International Herald Tribune, 5/26/94)*

The italicised NPs in [7] have to be interpreted as a particular phase of China (and 'a Russia embittered toward the West' is interpreted in the same way, too) since we believe that a particular country called China (or Russia) is at issue.

Examples in [8] and [9] show the contrast between indefinite and definite introductory expressions when they are realised by modified plural NPs: the ones in [8a] and [8b] are indefinite:

[8a] Soon, they reached an area of run-down or shuttered small factories and workshops, the economic life of Mananga long since spilled in ruins; dumps, tin shanties, potholes which made even a Jaguar leap. (W2F-015-33)

[8b] Children from South Korea and a number of western countries, among them America and Britain, were given a series of tests to assess their skills in mathematics. All the children were aged 13 and the tests were the same for each group. (the opening of a news bulletin in *The Economist* Oct. 8, 94)

[8a] and [8b] show that modified but unquantified indefinite plural NPs can be used to refer to some members of a subclass, which has been formed by the restriction of the modification. If we add the definite article to the NP, its meaning will change, as shown in [8b'], in which the hearer would be expected to take the underlined NP as referring to all the members in the subset, given that the expression is introductory in a discourse.

[8b'] The children from South Korea and a number of western countries, among them America and Britain, were given a series of tests to assess their skills in mathematics. All the children were aged 13 and the tests were the same for each group.

This is indeed what the examples in [9] show:

[9a] Incorporated in the great wooden beams which descended deep into the mine-shaft was a revolutionary 'man-engine', the first of its kind in the county. (W2F-007-8)

[9b] The Happy Eater road-house was in complete darkness, but one or two lights showed in the semi-detached houses which lined the road. (W2F-020-8)

[9a] and [9b] show the writers' intention of referring to all the members of the restricted subclass. The subclass is distinguished from its superordinate class by having the specific properties defined in the modification. For example, in [9a] the set of 'the great wooden beams which descended deep into the mine-shaft' uniquely exists in this context and all the members of this subset of beams are being referred to. Similarly, all the members of the set 'the semi-detached houses which lined the road' are being referred to in [9b].

Since the use of indefinites in the first mention of an entity gives the reader an impression of something unfamiliar, by contrast, the deliberate use of a definite NP for something new to the reader can achieve special literary effects, as shown in [10].

[10] *The cabin-passenger* wrote in his diary a parody of Descartes: 'I feel discomfort, therefore I am alive,' then sat pen in hand with no more to record. (the opening sentence of Graham Greene's *A Burnt-out Case*, Heinemann 1974)

In fact the reader had no immediate access to the referent of the definite NP, 'the cabin-passenger'. However, because of the encoded procedural meaning of the definite article the reader is expected to treat it as something easily accessible in some way¹⁸. The following comparison adds further evidence to this point:

[11] You can stir *the jam* into *the pudding*, observes Thomasina Coverly, but you can't stir it out again. (opening of a review, *The Independent*, 25/5/94)

[11'] You can stir *some jam* into *a pudding*, observes Thomasina Coverly, but you can't stir the jam out again.

[11] has the effect of a demonstration being performed in front of your eyes, which [11'] has lost.

3.2.4 ways of reconstructing a conceptual representation of an introductory expression

When we encounter a nominal expression used to introduce an entity in an utterance, we first establish a mental representation of its interpretation on the basis of its linguistic content and the context, as a part of the proposition expressed by the utterance. With indefinite expressions, we rely mainly on semantic decoding (cf. 3.2.4.1). With definite expressions, we resort to other referential clues, mainly deixis and our general knowledge in addition to semantic decoding: homophora (cf. 3.2.4.3) appeals to our general knowledge in the long-term memory while bridging (cf. 3.2.4.4) makes use of a mental ‘schema’ triggered by the co-text (cf. Note 15). Esphoric definite expressions (cf. 3.2.4.5), when used descriptively (cf. 4.1.7), resemble indefinite expressions.

3.2.4.1 semantic decoding

If there is nothing in the context which suggests that the communicator expects us to make use of any other clues for the interpretation of a noun phrase, we mainly rely on our semantic and general knowledge to establish a mental representation of its conceptual content, as in the case of the underlined expressions in the following news bulletin:

[1] EASTPORT, New York - A brush fire roared through thousands of acres of woodland near the Hampton’s beach resorts, destroying one house and damaging seven others. About 250 people were driven from their homes.

‘There has probably not been a fire of this magnitude in New York State in 50 or 60 years,’ Governor George Pataki said at a news conference. He declared a state of emergency. Among the evacuees were residents of a nursing home. No residents were hurt. About 20 fire fighters have suffered minor injuries. A lumber yard and a train station also were destroyed . . . (*The International Herald Tribune* 8/26-7/95)

This is a piece of news which has introduced to us quite a few new entities; about half of the words in it form all the indefinite expressions. We start constructing representations of their interpretations by decoding the semantic content of these expressions, with the help of pragmatic inference¹⁹. Semantic decoding leads us to concepts relating to these expressions and the descriptive contents of these concepts are the basis of our representations. Our representations of the referents may be different from each other to some extent but we will have a rough idea of what happened near the Hampton's beach resorts, New York, on an August day, 1995.

[1] is a news report as opposed to [2], which is an excerpt of fiction. With fictional texts, we follow exactly the same route: whether an utterance is based on reality or fiction doesn't affect our basic process of interpreting it. The common noun phrase 'a (dark) girl' in [2] enables the reader to have access to his corresponding concept GIRL. Part of this conceptual entry may resemble [3].

[2] The figures in this boat were those of a strong man with ragged grizzled hair and a sun-browned face, and a dark girl of nineteen or twenty, sufficiently like him to be recognizable as his daughter. The girl rowed, pulling a pair of sculls very easily; ... (opening of the second paragraph of C. Dickens's *Our Mutual Friend*, The Penguin English Library)

[3] GIRL

- a. a girl is a human
- b. a girl is female
- c. a girl has parents
- d. a girl is usually not as physically strong as a boy
- ...

Each conceptual entry consists of encyclopedic assumptions - as those listed in [3] - which consists of many other concepts and they may subsequently help the reader derive

further contextual implications to fill the gaps of what has not been talked about in the text. For example, from [3d] and the description of how easily the girl rowed in [2], the reader might infer that the girl is exceptionally strong or she is used to this kind of work.

Such contextual effects can be used to help contribute to an overall interpretation of the description of the girl's behaviour in the forthcoming text, e.g. making way for processing other sentences at a lower cost. The contextual implications derived will also be added to the reader's corresponding mental representation of the fictional character, which achieves relevance because to build up a believable character in one's mind is one of the main purposes of reading literature.

3.2.4.2 deictic reference

The communicator's choice of using a definite NP rather than an indefinite one to introduce an entity into the universe of discourse is based on two related motivations. One is whether she believes that the addressee has access to information directly related to her intended referent and the other is whether she wants to show that she intends the addressee to identify the referent. In addition to semantic decoding, with a definite introductory expression the addressee is entitled to make use of some clues in the context. One is deictic and the other is based on his general-knowledge²⁰. Also, depending on whether an expression has nominal content or not, we make use of different kinds of deictic clues in assigning reference to them.

In interpreting the underlined expressions in [1] the reader is expected to use deictic clues such as those relating to space, time or the writer's viewpoint. The writer of the letter refers to herself, with the pronoun 'I', and to Laura, the receiver of the letter, with the pronoun 'you', knowing that the receiver will take the writer's viewpoint into consideration and recover the intended referents.

[1] Dear Laura,

Well what can I say?

You're brilliant, wonderful, amazingly stunning - (W1B-005-30ff - beginning of a social letter: Joey to Laura)

In [2] below, the writer expected that the reader would find the intended referent of the underlined expression in her physical surroundings i.e. the letter the reader was reading.

[2] As you've gathered Anne-flo (my little-one) I'm writing this on a word processor, my brother's WP. (W1B-001-51 - a social letter: Sean to Anne-flo)

In [3], the definite article in the underlined expression can be regarded as a weakened demonstrative 'this' and is used to indicate the spatial proximity of the referent (i.e. on the TV screen and next to the speaker).

[3] Right As I said earlier on in the classroom we will now go through the basic controls on the machine (S2A-054-1 - demonstration of motor-bike riding on a video)

It is interesting to compare pronouns and common noun phrases used deictically because their difference in nominal content affects the way we assign reference to them. The pronouns 'you' and 'I' in [1] and 'this' in [2] lack 'content' or 'nominal content'²¹ while the common noun phrase²² 'the machine' in [3] has nominal content. Nominal content means that the addressee can associate the expression with a corresponding concept. If an expression has nominal content, then it will give the addressee access to the encyclopedic entry of a concept if he has it in his memory. Pronominals encode only grammatical categories like person, number and gender and some procedural information. They don't have the encyclopedic entry and so they have no nominal content. For this reason, generally their deictic use has to be assisted by sufficient contextual clues²³. In [1], the procedural information tells the reader to identify 'I' with the writer of the letter, i.e. a particular Joey, and 'you' with the receiver of the letter, i.e.

a particular Laura. In [2], the reader had to infer with her general knowledge in order to identify the intended referent (e.g. the letter she was holding had to be written with some means such as a word processor).

If there aren't enough contextual clues accompanying the use of a pronoun, we can be easily confused about its referent. A TV advertisement for Kellogg's cornflakes has exploited this possibility. A woman and a man are going to spend some time in a camping caravan. The man comes in with a packet of Kellogg's cornflakes, when the woman asks his opinion about the rain, 'Do you think *it* will last all week?' The man, mistaking the pronoun 'it' as referring to the packet of cornflakes he is holding, answers, '*It* should do. *It's* a big enough packet.' The lack of nominal content in pronouns has caused the confusion in the man's interpretation of the pronoun 'it' in this ad, and this is the source of its comic effects.

A definite description signals that the accessibility of its referent is guaranteed. In [3], for instance, the referent in question is in the hearer's immediate physical surroundings: both in front of the demonstrator on the screen and in front of the viewer. Such reference assignment achieves optimal relevance because in the context to think that the referent might be anywhere else would cost the hearer more processing effort with no extra contextual effect (see Chapter II). Here is another scenario to exemplify the point. Suppose you and your friend are walking into your garden, confronted by a bed of fully-blooming roses. When your friend utters 'Look at *the roses*. Aren't they gorgeous?', no rational speaker would expect the hearer to interpret the expression 'the roses' as being used to refer to the roses in, say, Regent's Park in London.

Furthermore, a pronominal cannot be used as the conceptual address for the representation of a referent. When a reader of [1] has to store any information relating to the referent of 'I' in his mind, he has to establish a mental representation with a conceptual address which is a nominal expression, such as 'the particular Joey who is writing this letter'.

By contrast, when the addressee hears the expression ‘the machine’ in [3], given that he knows the semantic meaning of the word ‘machine’, he will have access to some assumptions in the encyclopedic entry of his concept MACHINE. An assumption like the one in [4] below will help the addressee assign the correct reference to the NP in question²⁴.

- [4] MACHINE:
a motor-bike is a machine
...

The nominal content in a referring expression, as opposed to a pronominal, which has no nominal content, can reduce the risk of misunderstanding. In the Kellogg’s ad that I have mentioned earlier, if the woman had said ‘Do you think the rain will last all week?’, instead of the original ‘Do you think it will last all week?’, there would not have been any possible confusion, which was the source of the joke.

3.2.4.3 homophora

As opposed to deictically established referents, both proper names and definite common noun phrases can be used as introductory expressions to indicate that their representational referents are in some way accessible to the addressee in his general knowledge, that is **homophora**²⁵. A more specific type of accessing the referent via general knowledge is **bridging** (cf. 3.2.4.4), which can be distinguished from homophora by whether we make use of a schema triggered by the co-text.

When the communicator uses a definite NP to introduce an entity into the discourse and directly appeals to the addressee’s general knowledge made accessible in the context, it is used homophorically. Let’s look at common noun NPs first. In [1], the

writer expected the receiver of the letter to process 'the cat' in a particular context associated with the writer of the text and identify it as her pet.

[1] It's the middle of the night and all is quiet, even the cat is asleep and there is only the clock ticking its way to 1 A.M. (W1B-005 - social letter)

[2] is an example with a different degree of generality²⁶ from the case in [1].

[2] The Prime Minister met Chancellor Kohl in Germany today to talk about the two issues dominating his government the economy and the Gulf War (opening of a news bulletin, S2B-002-79)

Since [2] occurred in a British domestic situation in 1991, the accessibility signalled by the definite NP would lead the hearer to assign the intended referent to the then British Prime Minister, namely John Major, because it would cost the least processing effort. The hearer managed to do this by having access to some assumptions of the encyclopedic entry of his concept of PRIME MINISTER, including one prominent exemplar, the particular John Major. This access would enable the hearer to derive contextual effects as the news report went on and the information in the news might modify his recalled mental representations of JOHN MAJOR and PRIME MINISTER.

Proper names are typically used homophorically, as shown in [3]:

[3a] In all history, nothing is so surprising or so difficult to account for as the sudden rise of civilization in Greece. Much of what makes civilization had already existed for thousands of years in Egypt and in Mesopotamia, and had spread thence to neighbouring countries. (opening of Chapter I in *History of Western Philosophy*, by Bertrand Russell, London: George Allen & Unwin Ltd. 1946)

[3b] Dickens could not compose without two bronze fighting toads and a gilt rabbit on his desk. Thomas Mann could not write without his tortoiseshell tobacco

box, nor Flaubert without his parrot. Zola could not look at the window through which his mother's coffin was lowered, and Wordsworth broke into a cold sweat if he sat down with a pen. (*The Times* 3/14/96)

The communicator could do so with [3a], for example, because she expected the audience to know in this case the historical link between the name 'Greece' and 'the country at the South end of the Balkan peninsula'. In [3] the writer expected the reader to find the representation of the referents of these underlined expressions in his long-term memory, as opposed to cases in which the communicator didn't:

[4a] when I was looking up the centenary of the county councils I noticed a Mr Mondella in eighteen eighty-six who knew about these things he was MP for Sheffield pointing out that one small state in Germany had more people taking advanced scientific examinations that we had in the whole of the UK. (ICE-GB-S2A-021-26)

[4b] ... as replacement I asked for David Wilson, who was to play a crucial role in the detailed work on the text and eventually to serve as Governor of Hong Kong. He was highly intelligent, a first-class Chinese speaker, whom I had known since language-student days in Hong Kong; and he had in addition that feel for the workings of the Chinese mind which I regarded as the negotiator's irreplaceable attribute. (Ch. 19, *Experience of China*, by Sir Percy Cradock, John Murray Ltd. 1994)

In [4a] the speaker didn't expect that the hearer would know the Mr Mondella whom he was talking about, so he presented the person as new with an indefinite NP. The writer of [4b] didn't expect that the reader would be familiar with the person he was talking about, either. But if he had introduced him with an indefinite NP, it would have sounded too insignificant for a future Governor of Hong Kong. The writer avoided doing so by introducing him, not as indefinite, but as definite, with some immediately added background information. Both treatments of the underlined NPs in [4a] and [4b]

contrast with the cases in [1], [2], [3] and [5]: none of the underlined expressions there had additional explanation. (In 3.2.5.4, I will show two other common ways, premodification and apposition, of introducing into discourse a proper name which the communicator assumes is unfamiliar to the addressee).

Similar to the case illustrated by [10] in 3.2.3, a novel starting with a definite expression ‘The cabin-passenger . . .’, a literary writer can also present a proper name which is new as if it should be homophorically interpreted to the reader. In this way writers can achieve the same effect of immediately involving the reader in the scene, as shown in [5].

[5] The door opened and Michael Gosselyn looked up. Julia came in. (opening of *Theatre*, by W. Somerset Maugham, William Heinemann Ltd 1946)

[5] contrasts with cases like those in [6], a more natural opening of narratives, where anything unfamiliar to the reader is introduced with indefinites first, or a proper name is treated as something to be explained.

[6a] Ah, how oft we read or hear of boys we almost stand in fear of! For example, take these stories of two youths, named Max and Moritz . . . (opening of *Max and Moritz*, by Wilhelm Busch, New York: Dover)

[6b] One morning in the early summer of 1979, two unprepossessing American tourists walked the streets of Chelsea with smiles on their faces. One was Bill Clinton, the newly elected governor of the minor southern state of Arkansas. The other was Hillary Rodham Clinton, his wife. (extract from *Blood Sport* by James Stewart, London: Simon & Schuster 1996, *The Sunday Times* 10 March, 96)

[6c] Eduard was the name of a wealthy baron in the prime of life and he had been spending the best hour of an April afternoon in his orchard nursery grafting new

shoots he had just obtained on to the young trees. (opening of *Elective Affinities* by J. W. Goethe, London: Penguin Classics)

Since we actually do not have conceptual representations of those proper names in [5], presented to us with false guarantees of their accessibility, we have to create them with these names as their conceptual addresses. We do the same to those proper names presented to us as new, like those in [4] or [6]. These representations are different from those we reconstruct by semantic decoding for indefinite introductory expressions (cf. 3.2.4.1) in that at the beginning they have much less conceptual content. For example, for ‘Michael Gosselyn’ and ‘Julia’ in [5] we cannot even be sure whether they are children or adults for the moment. We know more, on the other hand, about those in [6] because of the background information provided in the co-text relating to expressions like ‘boys’, ‘youth’ or ‘was the name of . . .’.

The homophorically reconstructable definite descriptions in [3] should also be treated differently from the proper names in [4] or [6] because, though they are all definite NPs, they are different in that those in [3] have nominal content but those in [4] and [6] do not. This fact affects the process of reconstructing their referents.

The communicator always runs the risk of either overestimating or underestimating her addressee. She may sound either too abrupt or too patronizing. If the addressee expects her addressee to retrieve the referent of a proper name from his general knowledge, her judgement of the addressee’s knowledge has to be correct and otherwise her expectation will not be fulfilled. The following joke derives from a mismatch between the communicator’s expectation and her addressee’s knowledge structure. The conversation happened between Pinckney Benedict, an American author, and his folks back home:

[7] On my return to the States, to my hometown in the mount of southern West Virginia, the first thing I did was to head off to my favourite barbershop. “I just got back from London,” I tell the old fellows who loaf there.

“London Kentucky?” they want to know.

“London England,” I tell them. “Different London. I was there to promote a book I’ve written.” . . . “. . . I never did go to an English restaurant, though, always a foreign place: Chinese, Thai, Italian, Indian.”

“Indian?” the old fellow asks.

“When an Englishman says Indian, he doesn’t mean what we mean,” I tell them. “He means a person from the subcontinent of India.”

(‘Why don’t you Londoners say what you mean?’, *Evening Standard*, 26/7/94)

The main cause of the mismatch in [7] is that Benedict overestimated his folk’s ability to retrieve his intended referents correctly. Homophora will be successful only when the communicator is sufficiently familiar with her addressee’s knowledge storage and gives some help to narrow down a context for the addressee to process her utterance in if necessary - a crucial condition for an entity to be uniquely identified²⁷. It could happen with common noun descriptions as well as with proper names²⁸.

In [8] the underlined definite NP is used to refer generically. Since generic entities belong to people’s general knowledge, they can also be homophorically established (see further in 6.2).

[8] Being America’s national emblem didn’t keep the bald eagle from facing extinction. (an opening sentence of an article in *Time* 12/26/95)

3.2.4.4 bridging inference

Bridging reference assignment²⁹ can be considered as a special case of homophora. In homophora, sometimes the communicator regards the addressee's whole knowledge system as an open warehouse with pigeonholes, from which she can expect the addressee to get her intended referent, as in the case of 'Greece' and 'Egypt' in [3] of the last section. On other occasions, the communicator's own presence can provoke a suitable context for the addressee to process her expressions, as 'the cat' in [1] of the last section. Or the media in which the message is being conveyed may trigger an appropriate context, as in the case of 'the Prime Minister' appearing in a British newspaper. By contrast, in bridging inference, the communicator expects the addressee to identify the intended referent in a subset of his general knowledge, which has often been triggered as a schema by some particular expressions or the situation created in the discourse. The two types of reference assignment are on a gradient: [1b] shows how one example can go both ways ([1a] and [1d] are requoted here as paradigms for comparison):

- [1a] It's the middle of the night and all is quiet, even the cat is asleep and there is only the clock ticking its way to 1 A.M. (W1B-005-15 - social letter)
- [1b] I described how I first noticed the symptoms and how I first heard from the doctor that it was no ordinary problem. (W2B-001-53 - a broadcaster's autobiography)
- [1c] A woman gave birth in an American hospital to a baby that was sickly from the start. After three days it died, and *the doctor* came to see her . . . (the opening of an article in *The Observer* 26/11/95)
- [1d] A car just went by and *the exhaust* fumes made me sick (quoted from Clark 1992:22)

When we compare [1b] with [1a], they can be said to belong to one category: the writers expected their addressees to identify an associate in their life: their pet or doctor. On

the other hand, [1b] can be said to be very similar to [1c], a case of bridging inference comparable to the standard bridging example [1d]. In cases like [1b] the context which made the representation of the referent of 'the doctor' easily accessible was set up by the communicator's presence - her circumstances and her point of view. In cases of bridging inference, the addressee is typically expected to make use of a **trigger**, a specific expression in the co-text activating a particular mental schema in which he can have access to the referent of another definite NP, the **associate**³⁰. In [1c] and [1d] the triggers are underlined and the associate are italicised.

[2] is another case of bridging inference:

[2] *A recent job ad in national newspapers sought graduates with degrees in Arabic, Chinese, Urdu, Punjabi, Japanese, Persian, Russian and Serbo-Croat. More surprisingly, given the identity of the advertiser, it also appealed to graduates with "degree-level knowledge" of Spanish, Portuguese, Dutch, German, and Italian. (The Guardian 11/23/94)*

In [2] the nominal content of the italicised expression serves as the trigger of a particular schema in which we are expected to be able to have access to the referent of the definite expression 'the advertiser' because the schema is part of our world knowledge which tells us that an ad must have its advertiser.

The following example shows the difference between a *the N* NP (underlined) whose referent is recoverable from a bridging inference and a *the N* NP (italicised) which has homophoric reference (cf. 3.2.4.3).

[3] Paris 'Match' sent a reporter, Sabine Cayrol, to London. She asked **the first taxi driver she met** what he thought of the ad. He laughed, and laughed more when she expressed indignation.

She then asked him how he would feel if the French made a film hinting at the murder of *the Queen* or Queen Elizabeth the Queen Mother. He threw her out of the cab. (*The Daily Telegraph* September 1, 1995)

In [3], it is the mention of ‘the first taxi driver’ that triggers a scenario in which ‘the cab’ is usually a necessary part. The referent of ‘the cab’ is taken to be specifically the car driven by the referent of ‘the first taxi driver’. For an introductory referring expression to be recoverable from a homophoric reference, there is no such requirement, as in the case of the definite expression ‘the Queen’, taken correctly in the context to be the Queen of England, Elizabeth II, not, say, the Queen of Denmark.

Bridging inference is a way of relating an expression to its intended referent and the referent itself can be of different nature. The referent of ‘the advertiser’ in [2] or ‘the cab’ in [3] is a particular individual while the referent of ‘the viewer’ in [4] is a non-specific individual, anybody who happens to be playing that role (cf. 4.1.3):

- [4] In the pastel portrait of his sister Thérèse painted around 1869, a painting done in 1771 by Jean-Baptiste Perronneau is clearly visible on a wall. The portrait of ‘Madame Miron’ is a searching psychological study of an ungainly middle-aged woman in her finery, sullenly aloof and defensive. Turned three-quarters, she looks sideways at the viewer, as if distantly sizing him up. (‘Portrait of the Artist: Degas as a Collector’, *International Herald Tribune*, July 20-21, 1996)

The referents of the underlined NPs in example [5] of Section 6.0 are generic.

3.2.4.5 esphora

Esphora³¹ is the use of the definite article in a modified NP or an NP with an apposition. The resultant definite NP is used to introduce a new entity into discourse, rather than indicating the accessibility of its referent to the audience. The following example best illustrates this difference:

- [1] Anyway, I get so much back from my girls it more than compensates. I think small children do need their parents around. I agree with the lady [*a* former Independent Schools Association chairman, Paddy Holmes] who said the other week that two-year-olds were too young to be in nursery full-time. (*The Sunday Times*, 5/5/96)

The use of the definite article in ‘the lady . . .’ is required by the post-modification in the phrase and the writer’s intention of introducing PADDY HOLMES as new is clear because she used an indefinite NP as the apposition.

The interpretation of such a definite NP is similar to that of an indefinite introductory expression in that it relies heavily on what is encoded in the expression itself, as shown in [2]:

- [2a] A cooler new Ford Fiesta where even the chocolate in the glove box can be air conditioned to stop it melting will be available next month . . . (the underlined expression is the first mention of the entity, *The Daily Telegraph* Sept. 1, 1995)
- [2b] Luckily, the breeding season for green turtles does not begin until May and June, and for the smaller hawksbills, until April and May. But it’s unlikely that enough oil-booms can be placed around the islands to protect them, and so it is possible that those turtles which escape the slick will find themselves with nowhere to breed. (the underlined expression is the first mention of the entity, W2B-029-87f)

- [2c] An enquiry 's begun into the sinking of a trawler by a nuclear sub off the Scottish coast and the author Roald Dahl has died at the age of seventy-four (S2B-011-154 - opening of a news bulletin)
- [2d] A little puzzled ,the man Jim said , 'Right then , we are going to see about the music.' (W2F-018-144)

From the point of view of text processing, esphora is distinctively different from cataphoric co-reference as defined in 3.2.5.1, which is a relation between two expressions, the interpretation of the earlier-appearing one depending on the later-appearing one. Esphora occurs within a noun phrase. The definiteness of the dependent expression in cataphora signals its relation with its antecedent, as shown in [3], while the definiteness of an esphoric expression indicates that the head noun is being modified, non-restrictively (e.g. [4] below) as well as restrictively (e.g. those in [2]).

- [3] These language options are open to our students: *Spanish, French, and German*.

The restrictive modification in esphora narrows down the representational referent of the expression. When we encounter an esphoric *the* occurring in an NP used as an introductory expression (e.g. those in [2]), we are concerned with mainly the impact of the modification of the head noun on its interpretation. When the modification is restrictive, as are the cases in [2], it directly affects the scope of the referent of the NP. The representational referent of an esphoric NP can be expressed in an abstract way as 'the particular member or sub-set of the class which is restricted by the modification and which is denoted by the head noun that the communicator is using'. In [2a], the modifier 'of the lorry which ran over the animal rights protester Jill Phipps' in the underlined NP restricts the set denoted by the head noun 'driver', and in [2b] the modifier 'in the glove box' and in [2c] the modifier 'which escape the slick' do the same to the head nouns 'chocolate' and 'turtles'. 'Those' in [2c] is an emphatic replacement of the definite article (cf. Quirk et al. 1985:374). [2d] and [2e] are

examples of apposition, where the referent is restricted to one particular member of the class denoted by the head noun, e.g. the particular author named Roald Dahl.

In terms of the way of establishing its representational referent, esphora is distinctively different from homophora and bridging inference. In homophora, the referent is an established representation in the hearer's memory for a particular entity. In bridging reference, the referent is a part of a retrieved scenario. For example, the wheel cued by 'the worm' when describing a worm and wheel system is certainly different from 'the wheel' in 'behind the wheel' in a description of a driving scene. Either of the two specific types of wheels is expected to be retrieved by the addressee respectively. By contrast, when we interpret an esphora, we are mainly concerned with reconstructing a representation on the spot with the encoded semantic information, as shown by all the examples in this section.

The modification of the head noun can be non-restrictive as well as restrictive, as is the underlined NP in [4]: the referent of the underlined NP is still the particular bar called 'Kafe Bar Berlin'.

[4] In the seedy Kafe Bar Berlin, Essmereld Seferi throws back her head and croons in a husky Edith Piaf voice. Hard-drinking men leer across the smoke-filled room. (the opening paragraph of a news bulletin, *The Sunday Times*, 29/5/94)

Apart from the reason that cataphora indicates a relation between two expressions and esphora happens within one expression, the other reason for considering esphora and cataphora as separate phenomena is that esphora actually covers premodification (as shown in [4] and [5]) as well as postmodification of the head noun in a noun phrase. The term 'cataphoric', 'forward (downward) tracking', is obviously not accurate for covering both these cases.

- [5] By the year 1700 *the German-speaking countries* have once more become articulate. (opening of Chapter 9, *Civilisation*, by K. Clark, BBC & John Murray 1969)

In its actual use, a definite article often plays more roles than one. Though an esphoric *the* in an introductory expression may have nothing to do with co-reference, as shown in [2], [4] and [5], its function is less determinate when it occurs in a modified co-referring expression. In [6], the definite article in the underlined NP is needed for the modification of the head noun, for the superlative adjective, and for the connection between the underlined NP and its antecedent, 'William Empson'.

- [6] *William Empson* was a professor of English at Tokyo University of Literature and Science. The greatest English writer ever to live in Japan felt fretted by the difficulties of teaching Japanese university students. (*The Sunday Correspondent* 10/10/89)

Finally, consider an example of esphor with a personal pronoun as its head. Like in the case of a proper name being used as a common noun (cf. 6.2.3), when a pronoun is used in this way the referent of the NP is a phase of the entity the NP head stands for (cf. 3.2.3 for more comment on the phasic use of an NP).

- [7] ... the encounter took me back to that danger and excitement when I had been single, particularly when I was at university and I was very confident about going to bed with anyone I fancied. It was the me of the late Seventies, early Eighties, pre-Aids, that was in bed with him, not the me of 1991. ('Lethal liaisons bring the end of romance', *The Observer*, 19/9/93)³²

3.2.5 types of textual co-reference

Both the definite determiners and the third person pronouns can be used to signal textual co-reference³³. There are two major issues in textual co-reference which are related to some formal features of NPs: one is the continuity in a co-referential network between co-referring expressions indicated by the definiteness of the dependent expressions, and the other is the dependence of the interpretation of a pronominal expression on its nominal antecedent. In this section I discuss these two issues in relation to the two formal types of co-reference: backward (anaphora) and forward (cataphora), including demonstrative pronoun anaphora and cataphora³⁴.

In a textual co-referential network, there are dependent co-referring expressions and their antecedents (cf. 3.2.1) and the main task of textual reference assignment is to make connections among co-referring expressions, especially with the introductory expression. A dependent co-referring expression can be either a definite common noun phrase or a pronoun³⁵. If it is a common noun phrase, then the addressee's task is to relate it to its antecedent, not to lose track of the continuity of the network, and to gather information related to it for the shared representational referent. In [1] the underlined definite common noun phrases are used to continue referring to the same representational referent of their antecedent, the italicised NP.

- [1] A van driver from Hendon emerged as the most envied white knight in Britain today after he tenaciously took on a gang of teenage girls who robbed *actress Elizabeth Hurley* at knifepoint.

The 32-year-old man, who lives in Aerodrome Road, gave chase when he saw the glamorous girlfriend of actor Hugh Grant being mugged in a street near her Earls Court home last night - even though he did not recognise the actress at the time. (opening of a news bulletin in *Evening Standard*, 24/11/94)

On the other hand, if the dependent co-referring expression is pronominal, then its interpretation basically depends on its antecedent, as is the case with the underlined pronoun 'her' in [1].

3.2.5.1 anaphoric and cataphoric co-reference

In textual co-reference, the antecedent can occur either before or after its dependent co-referring expression, i.e. being either anaphoric, as in [1a] and [1b], or cataphoric, as in [1c] and [1d]. In [1a] and [1c] the dependent co-referring expressions are pronominal and in [1b] and [1d] they are nominal definites.

[1a] In the sea, once upon a time, O my Best Beloved, there was *a Whale*, and he ate fishes. (the opening sentence of R. Kipling's *How the Whale got his Throat*, *Just So Stories*, Penguin Classics)

[1b] A student who had sex with *a college girl* despite her complaints that she was too tired to make love wept yesterday after being cleared of rape. The alleged victim left the court crying after the judge ordered the jury to reach a verdict of not guilty. (*The Times* 11/24/94)

[1c] Asked what he meant by 'Beyond', *Richards* responded, "Beyond anything you can think of." (*I. A. Richards: his life and work* by J. Russo, London: Routledge 1989, p. 609)

[1d] If you are converting your loft, these addresses will be useful: *HighSpaces Ltd., 45 Plover Rise Industrial Estate, Winborough, Gloucestershire, and Morgan & Holmes, 54 High Street, Pensby, Lancashire*

Apart from the occurring sequence of the introductory expression and its co-referring expressions, there is another dimension which is worth studying: the combinations of NPs with different nominal content in a co-referential network. Co-

referring expressions may appear in three major patterns with different syntactico-semantic implications:

A. personal pronoun co-reference³⁶

(a) anaphoric:

(1) indefinite - definite (e.g. 'a man . . . he . . .')

(2) definite - definite (e.g. 'John / the man in red . . . he . . .')

(b) cataphoric:

(1) definite - definite (e.g. 'he . . . the man / John . . .')

B. definite determiner co-reference

(i) same noun phrase repetition: (e.g. 'the wheel ... the wheel ...')

(a) anaphoric:

(1) indefinite - definite (e.g. 'a man ... the man ...')

(b) not possible in determiner co-reference but see C(+ss)a (cf. 3.2.8 for the notation)

(ii) synonymous or hypernymous expression:

(a) anaphoric:

(1) indefinite - definite (e.g. 'a swallow ... the bird . . .')

(2) definite - definite (e.g. 'the swallow ... the bird . . .'; 'John ... the man')

(b) cataphoric:

(1) definite - definite (e.g. 'the boy ... Tom ...')

C. repetitive proper name co-reference

- (a) anaphoric:
 - (1) definite - definite (e.g. John ... John ...)
- (b) cataphoric:
 - not possible

The following sections will be devoted to detailed discussions on these issues.

3.2.5.2 personal pronoun co-reference

In a co-referential network, when the dependent co-referring expressions are pronominal, their interpretation depends largely on their nominal antecedent. The following three examples are anaphoric, [1a] and [1b] with a definite antecedent and [1c] and [1d], an indefinite antecedent.

- [1a] *Tom* was in the garden when the telephone rang. He let Mme Annette, his housekeeper, answer it, and went on scraping at the sappy moss that clung to the sides of the stone steps. (opening of P. Highsmith's *Ripley Underground*, Penguin Books)
- [1b] *The people of Maili Sai* once considered themselves a favoured people, their shops filled with supplies sent directly from Moscow. For a while, since Kirgizstan cast off from the Soviet Union, they have been feeling less favoured. (the opening of a news bulletin in *The Economist*, Dec. 3, 94)
- [1c] A girl I know has *a glamorous, film-making, motorbike-riding brother*; a tall tearaway who lives high up a Welsh mountain in a house he has built largely with his own hands. (opening of an article in *The Times*, 11/20/94)
- [1d] No concept or term is introduced unless you really need it, . . . (*Word meaning* by Richard Hudson, London: Routledge 1995, p. viii)

Each of the pronominal expressions in [1] depends on its antecedent for its interpretation. Meanwhile, as a co-referring expression in a co-referential network, each dependant is also used to refer to the shared representational referent, contributing to the network with information attached to it. For example, in [1a] the representational referent of both ‘Tom’ and ‘he’ is the fictional character TOM in the novel while the textual referent (antecedent) of ‘he’ and ‘his’ is the expression ‘Tom’. Again, the representational referent of the co-referential network in [1c] is ‘the particular brother of a particular friend of the writer’s whom she’s talking about’³⁷. The pronoun ‘he’ in [1c] not only stands for its italicised antecedent ‘a ... brother’, but is also used to refer to the shared representational referent of the co-referential network in which it occurs. In the same way, the textual antecedent of the underlined pronouns in [1b] is the expression ‘the people of Maili Sai’ and their shared representational referent is the construction of a mental representation of what the NP is used to refer to. Though the antecedent of the pronoun ‘it’ in [1d] is a negative one, ‘no concept or term’, the pronoun is still used to co-refer with it to the class denoted by the head of the antecedent.

The examples in [2] are cataphoric; while [2a] has co-reference within one orthographic sentence, [2b] and [2c] contain co-reference crossing sentence boundaries.

[2a] Ten weeks before he died, *Mr Mohun Biswas*, a journalist of Sikkim Street, St James, Port of Spain, was sacked. (the opening sentence of V. S. Naipaul’s *A House for Mr Biswas*, Penguin Books 1961)

[2b] OMAHA BEACH, France - They do not like heroes, but they are easy to spot as they stand on the windswept beaches of Normandy or pause by the grave of a fallen buddy, quietly reliving the moments of fear, horror and excitement that marked their unannounced arrival here half a century ago.

Now mostly white-haired, occasionally frail, the youngest of them in their late 60s, the veterans of D-Day keep returning like pilgrims to Normandy, ... (opening of a news bulletin, *International Herald Tribune* 28-9/5/94)

[2c] Sir John Betjeman called it 'easily the most magnificent of all London hotels of its time'. Yet no great Victorian building in the capital has suffered such adversity as *the Midland Grand Hotel at St Pancras*. (the opening of a feature in *The Times*, Dec. 10, 94)

When the reader of [2a] reaches the pronominal expression 'he' - because it is the first mention of the newly-introduced entity - he has to depend on the succeeding part of the text, where its antecedent is, for its interpretation. By the end of the first sentence, the reader may have established a mental representation of the shared fictional referent with 'Mr Mohun Biswas' as its address: 'a journalist of Sikkim Street, St James, Port of Spain, who was sacked two weeks before his death'. In both [2b] and [2c] the writers deliberately delayed supplying the reader with the antecedent so that they could create a suspense for the reader: who does 'they' refer to? What is this 'it'? Thus the reader's curiosity may be aroused.

When looking for the textual antecedent of a pronominal NP, we generally make use of the principle of proximity and try to match the gender, number, and person, of the pronouns to those of their nominal antecedents³⁸. However, ambiguities do arise. For instance, the NPs 'shops' and 'supplies' in [1b] and many plural NPs in [2b] are potential candidates as antecedents of the underlined pronouns. When there is such ambiguity, further inference with our general knowledge and information from the text is needed in order to reach the intended antecedent. For example, in [1b] we can conclude, based on our general knowledge and the criterion of consistency with the principle of relevance, that 'shops' and 'supplies' are not as likely as 'the people of Maili Sai' to feel 'less favoured'.

In the following example, we use deictic information, the speaker's point of view, to find the textual antecedent of the underlined pronouns: the vocative which one uses to address oneself has to be used to refer to oneself, the speaker. Therefore, 'Joe'

can be regarded as the antecedent of the first-person pronouns in [3], which can also be used as the conceptual address for the representation of the character.

[3] I came to Warley on a wet September morning with the sky the grey of Guiseley sandstone. I was alone in the compartment. I remember saying to myself: ‘No more zombies, *Joe*, no more zombies’. (the opening paragraph of *Room at the top*, by John Braine, Penguin Books)

When we use different expressions to talk about the same entity, we normally make sure that introductory expressions and their dependent co-referring expressions agree in terms of number, gender and person. As for cases in which the matching of person, gender and number between introductory and their dependent expressions is not observed, see relevant parts in 3.2.8 and Chapter VII.

In the following table of personal pronoun co-reference, we can see that one combination is not possible: the combination of an indefinite cataphor with a earlier-appearing pronominal co-referring expression, i.e. the opposite of ‘A *man* came in and he sat down’. This is because the appearance of an indefinite expression signals the starting point of a potential co-referential network and it cannot be used to co-refer with any pronominal expressions which precede it.

possibilities of personal pronoun co-reference:

anaphoric:

indefinite nominal pronoun:

A man came in and *he* sat down.

definite nominal pronoun:

common noun:

The man came in and *he* sat down.

proper name:

John came in and *he* sat down.

cataphoric:

pronoun indefinite nominal: When *it* is cornered, a dog will jump over a wall.

pronoun definite nominal

common noun NP:

When *he* came in, the man walked straight to me.

proper name NP:

When *he* was young, John was very shy.

3.2.5.3 definite determiner co-reference

The second group in textual co-reference is called ‘definite determiner co-reference’ because the co-referring expression in question is an NP with various ‘definite determiner + noun’ constructions. Though both the dependent expressions and their antecedents in [1a] below and [1b] in 3.2.5.1 are definite, they are definite for different reasons. The definiteness of dependent co-referring expressions indicates the continuity in the co-referential network while the definiteness of the introductory expression indicates some clues of interpretation of its representational referent (cf. 3.2.3). When the antecedent is indefinite, as is the case in [1b] and [1c] below, there is an overt shift from an indefinite NP to a definite NP in the co-referential network, which signals the continuity between the two but doesn’t affect the nature of their shared specific referent.

It is the definite determiner in the dependent expression that indicates the existence of the antecedent and thus retains the continuity of the co-referential network. Once the addressee has decided that the expression is co-referentially used, what he has to do is to infer its antecedent, which is somewhere nearby in the text: a particular expression (or groups of expressions) which the communicator has mentioned or is going to mention.

The head noun of the co-referring expression can be a repetition of that of the antecedent, as in example [1].

[1a] A huge mudslide last spring nearly pushed a waste site into *the nearby Maili Sai river*ⁱ. The riverⁱ flows through the middle of the town and on to *the fertile Fergana valley*ⁱⁱ, one of the most densely populated areas of the former Soviet Union.

Most of the valleyⁱⁱ lies in the neighbouring republic of Uzbekistan. (*The Economist*, Dec. 3, 94)

[1b] The Republican Convention in Houston last August has become a byword for bigotry. Yet the worst examples of intolerance were to be found not in the Astrodome, but outside *a low cement building a few streets away*. The building was an abortion clinic; ... (*The Economist*, 12-18 June, 93)

[1c] *American scientists*ⁱ have reported *a new strain of antibiotic-resistant bacterium*ⁱⁱ and warned that its appearance could mean antibiotics may soon become useless.

The bacteriumⁱⁱ would mean patients may not be able to avoid picking up infections in hospitals, the scientistsⁱ said. (the opening of a news bulletin in *International Herald Tribune*, 11/11/94)

Textual reference assignment involves pragmatic inference and, if the head noun in the co-referring expressions is a repetition of that in the antecedent, then less inference is needed. In [1b], the expression ‘the building’ not only has its textual antecedent ‘a low building a few streets away’ but is also used to refer to the shared representational referent of the co-referential network in which it occurs. In other words, textually its referent is ‘the building which the author has been talking about’ and representationally it is ‘the particular building that lay a few streets away from the Astrodome and existed in August 1992 in Houston, USA’.

If there isn't a head noun repetition between the antecedent and its dependent co-referring expression (even the repetition is not entirely reliable for such a relation), then we have to rely more on inference based on our general knowledge, contextual information and the criterion of consistency with the principle of relevance (see 3.2.6 for details).

The example in [1a] is counted as anaphoric because there is no reason to call the later-appearing co-referring expression the antecedent when the co-referring expressions are both definite and have the same head noun. On the other hand, if we believe that a proper name given to an entity is intuitively more legitimate as the antecedent than a description of the entity, then in textual relations between two NPs such as 'John Major . . . and the Prime Minister . . .' or 'The Prime Minister . . . and John Major . . .' we can always call the proper name the antecedent and the description of the entity with that name its co-referring expression (cf. 3.2.1). Given all this, we can find cataphoric examples for this category, as in [2]:

[2a] Here was this fat man up on a piano, dancing in a way that suggests that, during rehearsals, he had miscalculated a pervy groin grind and ended up on the floor, screaming for his manager to put a detachable, rubber, non-slip surface on the old Joanna ...

'Aye, aye,' my dad said, looking up from the '\$400 and Under' second-hand cars' section of the local paper, 'it's *old Tommy Jones*. I know him.'
(opening of a feature in *The Times*, Dec. 10, 94)

[2b] The boy with fair hair lowered himself down the last few feet of rock and began to pick his way towards the lagoon. ... The fair boy stopped and jerked his stockings with an automatic gesture that made the jungle seem for a moment like the Home Counties . . . *Ralph* . . . (the opening of *Lord of the Flies*, by W. Golding, Penguin Modern Classics 1954)

As shown in [2b], the reader has to wait until he reaches the second page to find out the proper name antecedent of 'the fair boy' is 'Ralph'. Within [2b] there are some pronouns using the two definite descriptions as their antecedents.

This type of cataphoric reference with a long delay is a literary technique, *in medias res*, and appears in discourse when the writer wants to plunge 'the reader into the apparent middle of a situation' (Wales 1989:240). It may be used to create suspense, or to make the delayed, more informative expression a focus³⁹. The literary effect can be achieved because the norm or default sequence is that proper names presented as homophors⁴⁰ come before their co-referring definite descriptions, as shown in [3] below ('Rocken' appears prior to the italicised NP and 'Friedrich Nietzsche' before the NP in block letters) and [1] in 3.2.5:

- [3] Rocken, Germany - The change in Friedrich Nietzsche's status in Eastern Germany can be seen on the welcome sign of *this tiny hamlet in the state of Saxon-Anhalt where **the philosopher** was born 150 years ago and lies buried.* (the opening of a feature in *International Herald Tribune* 11/11/94)

The underlined noun phrase in the following example can be regarded as an esphora because the head is restrictively modified. At the same time, it is cataphoric because its textual referent are those indefinite expressions occurring afterwards.

- [4] I looked at the ornaments on the desk. Every one standard and all copper. A copper lamp, a pen set and a pencil tray, a glass and copper ashtray with a copper elephant on the rim, a copper letter opener, a copper thermo bottle on copper tray copper corners on the bottle holder. (*The Raymond Chandler Omnibus*, London: Hamish Hamilton 1953)

There is a cognitive constraint which says that in lexical anaphora one should go from a more specific expression to a more general one⁴¹. [5a] is considered to be odd

and a better version should be like [5b] or [5c], where the more specific description is introduced as new information:

[5a] Peter shot a bird. *The swallow* fell down.

[5b] Peter shot a swallow. *The bird* fell down.

[5b] Peter shot a bird. It was *a swallow*.

Writers may exploit the violation of this cognitive constraint to create suspense in order to achieve the effect of a close-up. In [6], the underlined expression, headed by a general term 'object' was used to introduce a new entity while the italicised expression with more specific information was used as a subsequent definite co-referring expression.

[6] Closer in time to us by 2,000 years, another object of even greater rarity than the Assyrian relief provides a measure of the current sense of urgency when an opportunity to buy something extraordinary arises. *The carved narwhal horn of the 12th century*, which was sold at Christie's on Tuesday for \$441,500, is a deeply mysterious object . . . The Christie's horn, and a closely related piece in the Victoria & Albert Museum are the only known horns to display such intricate, highly sophisticated decoration. ('*Room at the Top for the Truly Rare*', *International Herald Tribune*, July 9-10, 94)

When the writer uses a definite co-referring expression with a different head noun, not only does it serve as a stylistic variation but it may also give the hearer new information, as is the case in [7].

[7a] The giraffe is an unmistakable inhabitant of Africa's savannah country. *The tallest land mammal of all* can browse on vegetation which other animals simply cannot reach. (adapted from *Wildlife Fact-file: Giraffe*)

[7b] I have been testing crab and lobster recipes and have come to the conclusion that to get the freshest, sweetest product, you should cook *the crustacean* yourself, rather than buying it ready-cooked. (*Tips on the most humane way to dispatch lobsters and crabs*, *The Times*, July 3, 93)

In [7a] the head noun of the antecedent is the hyponym of the head noun of the co-referring expression. In addition, because the italicised co-referring expression is restrictively modified, it is intensionally as well as extensionally equivalent to its antecedent⁴². In [7b] the learned class name for lobsters and crabs is used to co-refer with them. If the reader doesn't know the word but managed to infer the co-referential relation between 'the crustacean' on the one hand and 'crab and lobster' on the other, then he can also get the new information conveyed by the hyponymic co-reference.

[8] is an example illustrating the same point but the co-referring relation is between a proper name and a definite common noun NP:

[8] For a man who once commanded a \$4 billion-lemons-to-electronics empire, Asil Nadir appears surprisingly content to be exiled in northern Cyprus, a self-styled republic recognised only by Turkey.

A year and a half after he jumped \$3.5 million bail, *the former head of Polly Peck International* faces having many of the company's remaining riches removed from his control. (opening of a feature in *The Times*, Dec. 10, 94)

The following is the scheme of definite determiner co-reference:

definite determiner co-reference

same noun phrase repetition:

definite NP - definite NP⁴³:

The wheel was invented tens of thousands of years ago
and the wheel is still in use today.

same noun phrase head repetition:

anaphoric:

indefinite NP - definite NP:

A man came in and the man sat down.

other co-referring expressions:

semantically synonymous or hyponymous expression:

anaphoric:

indefinite - definite:

A book was sold and the volume was old.

A swallow fell and the bird was dying.

definite - definite:

The book in red was sold and the volume was old.

The swallow I shot fell and the bird was dying.

contextually co-referring expression:

anaphoric:

definite NP - definite NP:

John came and the man is always restless.

non-nominal⁴⁴ - definite NP:

Tom passed the exams. The wonder made her
happy.

cataphoric:

definite NP - definite NP:

The star died. Olivier was a real genius.

definite NP - non-nominal:

The wonder made her happy: Tom passed the exams.

3.2.5.4 repeated proper name co-reference

If the same proper name is used as the subsequent co-referring expression in a co-referential network, then the first one is the natural introductory expression, as in [1].

[1a] Kissing, tickling and being bored may seem as familiar and instinctive as life itself, but it took the British writer Adam Phillips to make them part of the complex language of psychoanalysis. ...

Though *Phillips* chooses to explore tantalizingly simple subjects, his work can at times be difficult to penetrate. (the opening of a feature in *International Herald Tribune*, Nov. 8, 94)

[1b] You may not think of David Mamet, the prolific author of angriified and angriifying plays and films, as an insecure fellow.

...

It's a funny story for *Mamet* to tell on himself, a twinkly-eyed acknowledgement of his reputation as difficult, thorny and impatient. (the opening of a feature in *International Herald Tribune*, 11/21/94)

Examples [1a] and [1b] show two common ways of introducing into discourse a proper name which the communicator assumes is unfamiliar to the addressee: description + proper name and proper name + description. The information provided in the appositive noun phrase gives the addressee some clue to establish a representation of its referent, a similar process to esphora (cf. 3.2.4.5). In such cases, the subsequent use of the same name (or part of it) assumes the introductory expression as the textual antecedent and shares with it its representational referent.

In the examples in [2], the writers expected that the reader would be able to retrieve the referents of the proper names homophorically.

[2a] John Major is facing a new move to oust him as Tory leader by his right-wing critics, . . .

The move will fuel the debate inside the Tory party over whether *Major* should lead it into the next general election. (the opening of a news bulletin in *The Sunday Times*, 13/11/94)

[2b] Since it was first mentioned in chronicles dating from 1147, Moscow has played a vital role in Russian history; indeed, the history of the city and of the state are closely interlinked. For more than 600 years *Moscow* has also been the spiritual centre of the Orthodox Church of Russia. (the opening of 'Moscow', *Encyclopedia Britannica* 15th edn.)

In the case of [2b], if we have 'Moscow' solely as the name of the capital of Russia, then the notion of the textual antecedent is not useful any more because the subsequently mentioned 'Moscow' is not textually restricted. The interpretation of the subsequent co-referring expressions is not dependent on the earlier-appearing one - each of them can be independently homophoric⁴⁵ and each of them is used to directly refer to the same representational referent. Of course, the introductory and subsequently mentioned expressions of 'Moscow' can still share the same referent in the reader's general knowledge, which is very likely to be enriched when he finds some new information that the article is revealing to him.

Sometimes the co-referring proper names are non-restrictively modified, mostly in newspaper writing, so that more information can be packed in the limited space, as shown by the italicised expressions in [3].

[3] The brave motorist who helped police arrest the four-girl gang that attacked actress Liz Hurley has been praised for his swift action.

... He stopped his van immediately, phoned the police on his mobile and told *devastated sexbomb Liz* to stay near his vehicle.

... *Screen lovely Liz* returned to live in the Big Orange after two years in crime-ridden Los Angeles . . . (London *Tonight* 11/24/94)

3.2.5.5 demonstrative pronoun anaphora and cataphora

All of the demonstratives *this*, *that*, *these* and *those* can be used in textual reference as determiners as well as heads of NPs, as shown in [1], [2] and [3] and all of the four can be used anaphorically, as shown in [1] and [2].

[1a] The alarm system does contain two panic alarm devices. *These* are located in reception (our street entrance) and the cashier 's office (4th floor). (W1B-028-103f) [anaphoric; NP head; nominal antecedent]

[1b] Where have the time and the distance gone? I have defeated them, these 2 old enemies of lovers. I don't want them to stand between us as they are very strong and subtle. (W1B-007-128ff) [anaphoric; determiner; nominal antecedent]

[2a] I regret that I am unable to change the date that the Personal Loan transfer goes through, so you will need to bear *this* in mind when you calculate the funds you have available to you. (W1B-016-22) [anaphoric; NP head; discursal antecedent]

[2b] (Carrying a cup of tea, for example, is an absolute disaster area.) You have to concentrate more - and *that* makes you more tired.' (W2B-001-84) [anaphoric; NP head; discursal antecedent]

[2c] I found it easy to cast myself as the man with a legion of evil spirits as they suggested - *Those* being , Anger , fear e.t.c. but I couldn't really accept that J. C. could get them all out of me and into the pigs and drop them into the sea . (W1B-003-80f) [anaphoric; NP head; nominal antecedent]

This can be used cataphorically⁴⁶, as shown in [3].

[3a] . . . You won't get this letter till Monday by which time I'll no doubt have spoken to you, but never mind. This is the record of how I'm feeling tonight. Thank you my love for all your help and encouragement during my revision which enabled me to get my work to a standard where I could get a 3. (W1B-007-74ff) [cataphoric; NP head; discoursal antecedent]

[3b] Every male teacher lives with this fear. But when Chris, a 41-year-old drama teacher, was called to the head's office on Wednesday morning in February last year, it was the last thing on his mind.

He was met at the door by his union representative, who told him he had been the subject of a serious complaint. A parent had written a letter claiming that Chris had indecently assaulted her daughter. (the opening paragraphs of 'Every teacher's nightmare', *The Independent* 6/28/94) [cataphoric; determiner; discoursal antecedent]

The case with *that* is controversial⁴⁷. However, the following two examples can be formally regarded as *that* being used cataphorically⁴⁸.

[4a] . . . It was like being married to a novelist, he never knew when something he said or did would be reborn in one of her speeches. That's what he'd expected: that she'd come back and they'd have a drink or two and she'd shout at him (he worried about the Goldmans hearing, the walls were like cardboard) then it'd be over - until the next time. (W2F-016-119ff) [cataphoric; NP head; discoursal antecedent]

[4b] . . . But Cossiga has agreed to say his piece before a Parliamentary Commission or before a secret service committee with evidence in camera.

Casson says: 'That is all I wanted - that new light should be shed on these years of lies and mysteries: that Italy should for once know the truth.' (W2C-010-53f) [cataphoric; NP head; discoursal antecedent]

Though *these* can be used cataphorically⁴⁹, such use is very rare. Of the 1512 occurrences of *these* in the ICE-GB, none has been used cataphorically. Nor has any of the 1043 occurrences of *those*.

From the text processing point of view, whether the antecedent is a well-defined nominal constituent or not is also very important. Comparing the uses of the four demonstratives when they are used to indicate textual reference in the ICE-GB written corpus, I have found that *this* and *that* are often used with discoursal antecedent⁵⁰ ([2a], [3a], [3b] and [5a] for *this* and [2b], [4a] and [4b] for *that*). By contrast, *these* and *those* are used most frequently with a nominal antecedent ([1a] and [1b] for *these* and [2c] and [5b] for *those*).

[5a] You're lying down, probably beneath a line of dripping wet clothing, the radio on (BBC of course), and underneath and around you lies . . . God only knows what! I don't mean to sound religious, God forbid no!

No, no more of this conjecture, you're well I know. (W1B-001-12ff)

[anaphoric; determiner; discoursal antecedent]

[5b] In case I was tempted to gloss over certain thoughts, I decided to share the diary which had helped me admit to myself what I was now admitting to the listeners.

Here are some of those thoughts. (W2B-001-116) [anaphoric; determiner; nominal antecedent]

Obviously, the discoursal antecedents are much more difficult to identify in textual reference assignment because they can be clusters of linguistic expression of various sizes.

The following is the scheme of demonstrative pronoun co-reference:

- I. anaphoric
 - i. NP head
 - a. nominal antecedent
 - this:
 - that:
 - these:
 - those:
 - b. discoursal antecedent
 - this:
 - that:
 - these:
 - those: examples have not been found
 - ii Det.
 - a. nominal antecedent
 - this:
 - that:
 - these:
 - those:
 - b. discoursal antecedent
 - this:
 - that:
 - these:
 - those:
- II. cataphoric
 - i. NP head
 - a. nominal antecedent
 - this:
 - that:
 - these:
 - those:

- b. discursal antecedent
 - this:
 - that:
 - these:
 - those:
 - ii. Det.
 - a. nominal antecedent
 - this: examples have not been found
 - that:
 - these:
 - those:
 - b. discursal antecedent
 - this:
 - that:
 - these:
 - those:

3.2.6 inference in the reference assignment of co-referring expressions

Syntax plays a very limited role in the interpretation of co-referring expressions realised by non-reflexive pronouns⁵¹. For example, no syntactic rule can be stipulated to account for the pairing of the pronoun ‘them’ with ‘little Bo-Peep’s sheep’ in [1], which should be able to rule out the possibility of pairing ‘them’ with another plural NP, ‘her neighbours’ in the vicinity (cf. also [2] and [3] in 3.2.2).

- [1] Little Bo-Peep has lost her sheep, and is asking her neighbours to help her find *them*. (taken from Wales 1989:24)

For cases like [2], syntax is also helpless because there is an explicit disagreement in number between the antecedent and its co-referring expression; the co-referring expressions are indexed with *i*:

- [2] I bought a Veg-o-matic^{*i*}, after I saw *them*^{*i*} advertised on TV. (taken from Sells & Wasow 1994:117)⁵²

In cases like [1] and [2] the communicator expects the addressee to have assumptions such as ‘People will try to find things which they have lost’ and to do some inference based on them.

In 3.2.5.3 and 3.2.5.4 I have discussed inference in cases with repeated head nouns, both common and proper. If the introductory expression and other nominal co-referring ones don’t share the same head noun, then extra inference is needed, based on the addressee’s semantic knowledge, general knowledge, contextual information and the criterion of consistency with the principle of relevance. As argued in Chapter II, the aim of inference is to find an interpretation that is optimally relevant, i.e. yields adequate effects for no gratuitous effort. First let’s look at synonymous and hyponymous expressions⁵³.

The head noun in the co-referring expression can be a typical synonym⁵⁴ of that of the antecedent, as in [3].

- [3a] What is attempted in the following *volume* is to present to the reader a series of actual excerpts from the writings of the greatest political theorists of the past; ... The book does not purport to be a history of political theory, with quotations interspersed to illustrate the history. (Hoey 1991, p. 5)
- [3b] *Clowns* are mostly found today in the circus, but the professional buffoon has a long tradition behind him. (*Reader’s Digest Great Illustrated Dictionary*, p. 338)

In such cases, if the information that ‘volume’ and ‘book’, and ‘clown’ and ‘buffoon’ are synonyms is available to the addressee, then the textual antecedent of the underlined NPs can be easily traced.

The same thing can be said about hyponymy, as shown in the examples in [4]:

- [4a] The conception of language as a special gift of a god has been found in several diverse and unrelated cultures, and is itself significant of the reverence rightly accorded by reflective persons to *this priceless human capability*. (*A Short History of Linguistics*, by R. H. Robins, Longman, p. 1)
- [4b] Scientists have halved their earlier estimates of the number of blue whales thought to be alive in the Southern Hemisphere. Researchers of the International Whaling Commission, who are meeting in Mexico, said the southern population of *the biggest living mammal* may now be down to as little as 450. (*The Times*, 5/25/94)

In [4a] ‘this priceless human capability’ is used to refer back to ‘language’ because semantically ‘language’ can be the hyponym of ‘capability’ and language is a kind of capability. So is ‘whale’ of ‘mammal’. If the information is part of the addressee’s knowledge base, making connection between these hyponyms and their superordinates is relatively straightforward.

In hyponymy the situation parallel to synonymy can be found, where typical hyponymic cases are mixed with cases which are not covered by the conventional notion of hyponymy, as shown by the examples in [5]. Do we store ‘cancer sufferer’ as a hyponym for ‘man’? Do we store ‘manuscript’ as a hyponym for ‘work’? Or ‘thud’ as a hyponym of ‘music’? Such examples show that the traditional semantic hyponymy and synonymy are special neat cases as clues for textual reference assignment and in utterance understanding the possibilities are far greater:

- [5a] Two cancer sufferers are suing their employer after claims that a secret government report revealing a 'gross excess' of workers with the disease at a chemical factory was hushed up.

The men, employed at Hickson International's plant in Castleford, West Yorkshire, are bringing their High Court test case because they claim exposure to a chemical made by the firm caused them to contract bladder cancer. (the opening of a news bulletin in *The Sunday Times* 13/11/94)

- [5b] ... What we hadn't reckoned on was that the best bedroom was directly above the drawing-room. There are few more annoying things in the world than the dull thud of bass notes from below when you're trying to sleep.

... *The music* fizzled out eventually ... (*The Times* 11/20/93)

- [5c] The only privately owned manuscript by Leonardo da Vinci was sold Friday ...

The work was being sold by the Armand Hammer Museum in Los Angeles ... (the opening of a new bulletin in *International Herald Tribune* Nov. 12-13, 1994)

Then there are generalised terms like 'event' or 'situation', whose antecedents are discorsal, which means they summarise the scene described in a length of discourse rather than a noun phrase⁵⁵:

- [6] Carlsberg, which earns half its profits in the UK, has been speculatively linked with Scottish & Newcastle which needs a leading lager brand if it is to fulfil its expansionist ambitions. Guinness, with its distribution strengths, is also considered a likely partner for a leading lager brewer. Further uncertainty is injected into the situation by Molson, Foster's partner in Canada, ... (W2C-016-96ff)

The relation between the head nouns of the antecedent and its co-referring expressions varies and often things are not straightforward, as illustrated by the

examples in [7], where more complicated inference based on our general knowledge and contextual information is needed.

[7a] *A Bucharest appeals court* suspended the prison sentence Wednesday imposed on a British couple, Adrian and Bernadette Mooney, for buying a 5-month-old baby girl and trying to smuggle her out of Romania. ...

The panel cut the sentence from 28 months to two years, suspended it, and ordered the couple to leave the country. The judges announced the suspension in open court with the Mooneys present. (opening of a news bulletin, *International Herald Tribune* 11/17/94)

[7b] Huang Yong, a social reseacher, was tired of riding his bicycle to work. So earlier this year he went to a used car lot and bought himself *some wheels*. The model: a third-hand Fiat made in Poland in 1986. (opening of a feature in *Time*, 12/12/94)

In [7a] it is a conceptual schema that maintains the co-referential network when ‘court’, ‘panel’ and ‘judge’ are not synonyms but are related in some way in our society, i.e. ‘a court consists of some judges who carry out its function’. In [7b] the relation between the two co-referring expressions is that of part to whole. That is, wheels are part of a model of a car. The word ‘model’ and its referent, a car, are again conceptually related since a model is a style or design of a series of cars⁵⁶. Such inferences are all based on schemas⁵⁷ that we develop for economy of cognition.

Now we move a step still further and look at the inference involved in the following examples:

[8a] *William Empson* was a professor of English at Tokyo University of Literature and Science. The greatest English writer ever to live in Japan felt fretted by the difficulties of teaching Japanese university students. (*The Sunday Correspondent* 10/10/89)

[8b] One of the most striking, and for some even frightening, features of living in Britain at the time of the Falklands crisis was the speed and scale of the emergence of nationalistic support for military action to recapture the islands. Reactions in Argentina to the capture of the Malvinas appear to have been very similar. (Fraser & Gaskell 1990:4)

There is no semantic linkage between the name ‘William Empson’ and the description ‘the greatest English writer ever to live in Japan’, or the names between ‘the Falklands’ and ‘the Malvinas’. But in the context, these expressions form coreferential pairs, respectively. In [8a], the underlined NP is used anaphorically, picking out ‘William Empson’, which shares with it the same representational referent, as its antecedent. When the reader is processing the NP, assumptions like the following will most likely be activated because they are related to the conceptual contents encoded in the expression:

‘William Empson is English’;
‘William Empson is a writer’;
‘A professor of English may well be a writer’;
‘Tokyo is in Japan’ etc.

They will help the reader infer the link between ‘William Empson’ and ‘the greatest English writer ever to live in Japan’ if his concept of WILLIAM EMPSON doesn’t already contain the assumption ‘the greatest English writer ever to live in Japan’. In [8b], there is no linguistic connection between the two underlined co-referring expressions. The co-reference can be inferred with the help of the addressee’s existing assumption, ‘*the Falklands* and *the Malvinas* are the names for the same group of islands’. Or, if he doesn’t have this knowledge, he may be able to make an intelligent guess about the link between the two names, driven by his pursuit of relevance, via inference with assumptions activated by the expressions like ‘crisis’, ‘capture (and recapture)’ and ‘islands’.

Similarly, when an indefinite common noun phrase and a proper name are used to co-refer to one entity, there isn't anything linguistically coded to indicate the co-referential relation between them, either. The addressee has to rely on the addressee's inference to recover the intended relation. [9] provides such an example:

[9] On Thursday a dark-haired, neatly dressed British woman and her bearded, bespectacled German husband will stand before five black-robed judges as the verdict is read out on one of the biggest and potentially most damaging spy cases in Nato's history ...

For *Ann Rupp*, 46, it will draw a line under a story that she still cannot quite believe. It is the story she tells here: ... (opening of a feature in *The Sunday Times*, 13/11/94)

In [9] the NPs 'a dark-haired, neatly dressed British woman' and 'Ann Rupp' form a co-referential network which can only be inferred if the addressee is familiar with such a news report style.

In such cases, neither syntax nor lexical semantics is sufficient for establishment of the link between the antecedents and their co-referring expressions. In all the types of relation between the antecedent and its co-referring expression discussed above, syntax has only very limited function in recovering the co-referential link. Lexical semantics can help in cases where synonymous or hyponymous relation is encoded. Pragmatic inference is obviously the key not only to the reference assignment of the representational referent, but to a substantial part of that of the textual antecedent as well.

3.2.7 the indeterminacy of the antecedent and its co-referring expression

In writings where artistic creativity, rather than the convenient organization of information, is more important, the difference between co-referring expressions and their antecedent is often indeterminate. For example, in *For Whom the Bell Tolls*, Hemingway introduced his first character with a pronoun 'he'. Subsequently, the character was referred to by either 'he' or, several paragraphs later, 'the young man'. By then the reader knows what this young man wears in addition to some of the activities he's engaged in. Not until three pages later, the character reveals his name as 'Roberto'. As if the name is of no significance to anyone except Roberto's companion in the story, the character continues to be referred to as 'the young man'. This practice contrasts with what David Lodge, for example, did in his *Nice Work*, where the name 'Victor Wilcox' was introduced in the first sentence of the novel and its abbreviation 'Vic' was then used throughout the book and was rarely replaced with the pronoun 'he' or other definite descriptions. In Dan Jacobson's *Her Story*, told in a fictional W.H. Smith notebook, a main character is referred to as 'he' throughout. The co-reference network for this referent consists of only pronouns.

Either Hemingway's or Jacobson's way of establishing the co-referential network is for artistic reasons, both emphasizing the actions of the characters they were describing. In Hemingway's case, 'the young man' is in contrast with his companion, 'the old man', their names, Roberto and Anselmo, wouldn't have constantly reminded the reader of such a contrast. In Jacobson's case, the reader's attention is led to focus on the intense personal activities of 'he' and the relation between 'he' and the other major character of the story, 'you' due to the fact that anonymous characters themselves provoke suspense and result in a greater intensity in the work.

In practice, the determination of the antecedent is in fact a problem of choosing an expression as the address to the hearer's mental representation of the referent. Usually, it is the more informative one in the context, as shown in [1].

- [1] John Major has a vision: of an unreformed House of Commons at the centre of a patronage state. *He* is committed to dismantling the 19th-century reforms which introduced a neutral civil service, while insisting that the present structure and style of Westminster should be retained. ...
So *the Prime Minister* has chosen to do battle with the opposition parties on constitutional territory. (*'Back to the age of patronage'*, *The Independent* 29/7/94)

The writer of [1] uses three expressions to refer to the same entity for stylistic variation and in the case of the common noun NP, the writer may also want to remind the reader of John Major's position in this political battle⁵⁸. However, for a reader who has 'John Major' as a node in his general knowledge system, his representation of 'John Major, the British Prime Minister in early 1990s', is more specific than the node for 'the Prime Minister', which may include quite a few more other political personalities. It is more likely that the reader will have an activated representation of 'John Major' and depend on it for his interpretation of the two co-referring expressions, 'he' and 'the Prime Minister'.

Sometimes, the determination of the antecedent may be based on the addressee's goal in his cognitive activity, as shown in [2]:

- [2] Closer in time to us by 2,000 years, another object of even greater rarity than the Assyrian relief provides a measure of the current sense of urgency when an opportunity to buy something extraordinary arises. *The carved narwhal horn of the 12th century*, which was sold at Christie's on Tuesday for \$441,500, is a deeply mysterious object. ... *The Christie's horn*, and a closely related piece in the Victoria & Albert Museum are the only known horns to display such intricate, highly sophisticated decoration. (*'Room at the Top for the Truly Rare'*, *International Herald Tribune*, July 9-10, 94)

Both italicised expressions are specific enough to be an address to a representation of the referent. If one is used as the address, then the other will serve as an encyclopedic assumption in the representation: either '*The carved narwhal horn of the 12th century* was sold at the Christie's' or '*The Christie's horn* is a carved narwhal horn of the 12th century'. The choice will depend on the context that the reader has constructed to process this utterance in. If he is aware that V&A has a similar object, then he may choose 'the Christie's horn' as the antecedent. On the other hand, if he happens to know that Christie's has some other uncarved horns or rhino horns or carved narwhal horns of a different date, then he may choose 'the carved narwhal horn of the 12th century' as the antecedent.

3.2.8 a comprehensive discourse networking system of English noun phrases

In 3.2.5 I have examined the kinds of textual reference which have been discussed most in linguistic literature: an antecedent which establishes its referent discursively for the first time is normally co-referred to by a definite NP. This section will be devoted to establishing a discourse networking system for nominal expressions which embodies the types summarized at the end of 3.2.5.1, 3.2.5.2, 3.2.5.3 and 3.2.5.5. The extended part is mainly concerned with expressions used to refer to potential members of the class or the class proper denoted by the head noun of the expression. The relationship between such expressions can be with, or most characteristically, without referential continuity or dependency⁵⁹, indicated by the definiteness in the subsequent co-referring expressions.

It has been noted that when two identical indefinite expressions occur in the same text, they are commonly used to refer to two different individual entities⁶⁰. In addition to this use, there are other relationships between them. For example, when some characteristics of members of a class are being described, identical indefinite expressions can be used to refer to potential members of the class in question:

- [1a] If a noun-phrase does not consist of a single pronoun, or a pronoun with a relative clause attached to it, the principal word it contains will be a noun. It may contain more than one noun: a noun-phrase may be part of a longer one. (*Grammar and Style* by M. Dummett, London: Duckworth 1993, p.17)

Sometimes one of the two indefinites is used to refer to a particularised entity while the other is used to refer to a potential one of the same class, as in

- [1b] Next I had a daube of port. A daube is a cooking pot that has lent its name to a slow-cook stew, usually beef in red wine. (*The Sunday Times* 31/12/95)
- [1c] 28.7.91 Oh dear! I seem to have a hangover yet again . . .
A hangover is worse in 32 degrees of heat. (W1B-005-102ff)

Both of the underlined NPs in [2] are used to talk about the same referent, ‘pencils in general’ though the second ‘pencils’ is still indefinite.

- [2] Pencils are controllable and versatile - producing an infinite tonal range which is both permanent and adjustable - and black graphite ones, at least, are easy to erase. Before pencils were invented, thin rods of silver, zinc or lead were used for drawing. These are collectively known as silverpoint . (W2D-016-4ff)

On the other hand, the second ‘the riddle’ in [3], though definite, does not carry the textual continuity with it. It is used to refer to the class of riddles independently. The same is true of the NP ‘the Japanese infantryman’ in [3b].

- [3a] The riddle calls upon the hearer to guess what is meant by a given description.
A schoolbook of ancient Babylon, with the earliest riddles known, asks:
What becomes fat without eating,
What becomes pregnant without conceiving?

[Answer: a rain cloud.] There are riddles in almost every language known, many in Anglo-Saxon, which were propounded to the warriors at their feasts and some of which still puzzle scholars. The riddle plays a part in legend too . . . (*Encyclopedia Britannica* 15th edn.: 'Word and Letter Games')

- [3b] Some historians claim that the war was virtually over, and that the Japanese leaders, seeing their wasted cities and the total collapse of the country's infrastructure, would have surrendered without the atom-bomb attack. But this ignores one all-important factor: the Japanese soldier. Countless times he had shown that as long as he had a rifle or a grenade he would fight to the end. The only infrastructure the Japanese infantryman needed was his own courage, and there is no reason to believe he would have fought less tenaciously for his homeland than for a coral atoll thousands of miles away. (J. G. Ballard's story, *The Sunday Times* 20/8/95)

Also, number agreement can be broken when the two expressions are used to refer to the same thing: members of the class of fish, of idioms, or of saolas, etc. In [4a], [4c] and [4e] a singular NP becomes a plural and in [4b], [4d] and [4f], vice versa. [4c] and [4d] are examples of both definites, [4a] and [4b], both indefinites, and [4e] and [4f], a cross.

- [4a] What is a fish? Fish are aquatic vertebrates which breathe by means of gills. (*Fishes of Britain & Europe* by Peter Miller, London: Diamond Books 1994)
- [4b] What are idioms? An idiom is . . . (*Oxford Advanced Learner's Dictionary* 1995: 'idiom')
- [4c] As much as any animal can be, the saola is publicity shy. For thousands of years, small herds of these gentle, goatlike creatures munched their way through the mountainous grasslands of Indochina, drawing so little attention that the outside world had no hint of their existence. (*International Herald Tribune* 11/30/94)

- [4d] Will we ever understand how our brains work? We know that the human brain is incredibly complex and that its activity is always changing. (*The Times* May 4, 94)
- [4e] The nut - the name for any seed or fruit consisting of a soft, edible kernel and a tough, woody shell - is hard to classify. I have found it defined as a fat and as a protein; on the Continent it is categorised as dried fruit. But there is no disputing that nuts are a rich source of vegetable protein. (*The Times* 28/11/92)
- [4f] There are sufficient tigers in zoos to mount a captive breeding programme and prevent total extinction, but that gives no grounds for complacency. It is extremely difficult to reintroduce such a large and complex predator back into its own habitat once it has become extinct in the wild. (*The Independent* 14/9/95)

The number disagreement can also happen between a common noun phrase and a pronoun: neither use of 'they' below was due to the consideration of avoiding sexism⁶¹:

- [5a] The green-fleshed Ogen, for instance, is technically a cantaloup. Generally, they have a hard rind, which may be scaly, and broad ribs. (*The Independent* 13/8/94)
- [5b] fox I suppose would take a sitting hen but I mean they're so scarce compared with the abundant red grouse around that they're far more likely to find those
(SEU-S-10-08-178)

A count noun phrase can also be co-referential with a noncount noun phrase:

- [6] Labour MPs have been told that beards cost votes. Why, asks ROLAND WHITE, is facial hair given such a tuft time? (*The Sunday Times* 4 Feb., 1996)

The following two examples, albeit rare, can be regarded as the exception to the rule; definites are followed by indefinites while they share the same representational referent.

- [7a] The wild turkey looks quite like an old Norfolk turkey - generally brown, or even black, with brilliant reflections of bronze or metallic green, and the same bare head and neck adorned with red wattles that is familiar to us in farmyard birds. But the wild turkey is a trim, athletic bird . . . It's a hard life for a turkey. ('Wild about turkey', *The Times* 12/24/94)
- [7b] If sexual intercourse began in 1963, as Philip Larkin claimed, it was the pill that ushered it in. The arrival of a contraceptive that was reliable, easy to use and under female control, put men and women on an equal sexual footing for the first time in history. (*The Economist* Dec. 25, 93 - Jan. 7, 94)

On occasions, one definite NP can have two different antecedents: in [8] 'the man' co-refers with both 'the fortunate politician' and 'the successful soldier'.

- [8] I confess that when first I made acquaintance with Charles Strickland I never for a moment discerned that there was in him anything out of the ordinary. Yet now few will be found to deny his greatness. I do not speak of that greatness which is achieved by the fortunate politician or the successful soldier; that is a quality which belongs to the place he occupies rather than to *the man*; and a change of circumstance reduces it to very discreet proportions. (opening of *The Moon and Sixpence* by Somerset Maugham 1919)

In a comprehensive system of co-reference of English NPs, all the above cases should have a place as well as the most discussed types. This system shows by the combinations of the features the following information:

There are four combinations between the definiteness features of either expression:

definite - definite: ++

indefinite - indefinite: --

definite - indefinite: +-

indefinite - definite: -+

The second type of variation involves the number features: singular, plural and noncount. The combinations which have been illustrated are:

singular - singular: ss

plural - plural: pp

singular - plural: sp

plural - singular: ps

noncount - noncount: nn

noncount - plural: np

plural - noncount: pn

noncount - singular: ns

singular - noncount: sn

The third type of analysis consists of the following features:

1. identical heads
2. from a more specific term to a more general term
3. from a more general term to a more specific term
4. from a description to a pronominal
5. from a pronominal to a description
6. from a description to a proper name
7. from a proper name to a description
8. identical proper names
9. two items which can induce a bridging inference

10. two items which don't have fixed semantic relation between them but their extensions can overlap , i.e. a girl can be a victim or a reporter can be a man

The system is illustrated with examples and further additions can be made into their proper slots. Transitions from an indefinite expression to a definite one has the possibilities of both being or not being a tie for textual continuity.

Discourse Networking System of English Noun Phrases:

A.

The definiteness and number of the co-referring expressions used can be of one type.

--nn(1) indefinite - indefinite; noncount - noncount; identical heads

- [1] Love is Patient and kind; love is not jealous or boastful; it is not arrogant or rude. Love does not insist on its own way; it is not irritable or resentful; it does not rejoice at wrong, but rejoices in the right. Love bears all things, hopes all things, endures all things. (W1B-006-25ff)
- [2] Science is arguably the defining feature of our age; it characterises Western civilization. Science has never been more successful nor its impact on our lives greater, yet the ideas of science are alien to most people's thoughts. (opening of 'Introduction' in *The Unnatural Nature of Science* by Lewis Wolpert, London: Faber and Faber 1992)

--pp(1) indefinite - indefinite; plural - plural; identical heads

- [1] Pencils are controllable and versatile - producing an infinite tonal range which is both permanent and adjustable - and black graphite ones, at least, are easy to erase. Before pencils were invented, thin rods of silver, zinc or lead were used for drawing. These are collectively known as silverpoint . (W2D-016-4ff)

- [2] Ospreys and red kites have had their best breeding season for more than a century ... Red kites, whose numbers dwindled to only a handful in the 19th century, have also recovered well. (*The Times* Oct. 8, 94)

--pp(2) indefinite - indefinite; plural - plural; specific - general

- [1] Most of my sightings of turtles have been of animals coming to the surface to breathe. (W2B-029-82) [particularised entities - particularised entities]

- [2] *Dolphins* are still a common sight in the Gulf, and one of my most memorable experiences was watching them from the prow of an Arabian fishing boat, or dhow. Two sleek, grey bodies were effortlessly riding our bow-wave just a foot or so beneath the surface. (W2B-029) [potential entities - particularised entities]

--pp(3) indefinite - indefinite; plural - plural; general - specific

- [1] Other rare birds had a mixed season. Numbers of bitterns continued to decline and corncrakes failed to breed in Northern Ireland for the first time. (*The Times* Oct. 8, 94)

--ss(1) indefinite - indefinite; singular - singular; identical heads

- [1] Wednesday was as I think I told you written off due to a hangover . . . 28.7.91
Oh dear! I seem to have a hangover yet again . . .
A hangover is worse in 32 degrees of heat. (W1B-005-102ff) [a particularised entity - a potential entity]
- [2] If a noun-phrase does not consist of a single pronoun, or a pronoun with a relative clause attached to it, the principal word it contains will be a noun. It may contain more than one noun: a noun-phrase may be part of a longer one.

(*Grammar & Style* by M. Dummett, London: Duckworth 1993, p.17) [a potential entity - a potential entity]

- [3] Mary bought a camera last week and sold a camera this week. (from Greenbaum & Quirk 1990:80) [a particularised entity - another particularised entity]

++pp(2) definite - definite; plural - plural; specific - general

- [1] Where have the time and the distance gone? I have defeated them, these 2 old enemies of lovers. I don't want them to stand between us as they are very strong and subtle. (W1B-007-128ff) [anaphoric]

++pp(4) definite - definite; plural - plural; description - pronominal

- [1] *The people of Maili Sai* once considered themselves a favoured people, their shops filled with supplies sent directly from Moscow. For a while, since Kirgizstan cast off from the Soviet Union, they have been feeling less favoured. (the opening of a news bulletin in *The Economist*, Dec. 3, 94) [anaphoric]

++pp(5) definite - definite; plural - plural; pronominal - description

- [1] OMAHA BEACH, France - They do not look like heroes, but they are easy to spot as they stand on the windswept beaches of Normandy or pause by the grave of a fallen buddy, quietly reliving the moments of fear, horror and excitement that marked their unannounced arrival here half a century ago.

Now mostly white-haired, occasionally frail, the youngest of them in their late 60s, the veterans of D-Day keep returning like pilgrims to Normandy, ... (opening of a news bulletin, *International Herald Tribune* 28-9/5/94) [cataphoric]

++pp(6) definite - definite; plural - plural; description - proper noun

- [1] If you are converting your loft, these addresses will be useful: HighSpaces Ltd.,45 Plover Rise Industrial Estate, Winborough, Gloucestershire and Morgan & Holmes, 54 High Street, Pensby, Lancashire [cataphoric]

++ss(1) definite - definite; singular - singular; identical heads

- [1] He overtook a wheelchair pushed by two boys. The woman in it ordered them to make haste; she had an authoritative voice. Cosmo said, 'Can I lend a hand?' and, pushing, asked, 'What's the picnic in aid of?'
'It's not a picnic, it's a ram roast,' said the woman in the chair. (W2F-018-58ff)
[a particularised entity - the same entity (anaphoric)]
- [2] The tiger is the largest and strongest of the big cats and is widely distributed in Asia from Persia to China and from India and the East Indies to Siberia and Manchuria. An adult male may weigh up to 640 pounds and be seven feet long excluding the tail; the female is smaller. The tiger frequents grassland, swampland and forests. Its prey includes antelopes, cattle and some birds. The tiger hunts alone at night and kills about thirty victims a year. (*Woburn Wild Animal Kingdom*, Norwich: Jarrold & Sons 1986) [a generic entity - a generic entity]
- [3] In west Germany, the car is a measure of personal economic miracles. Touch a western German's car, scratch it a little, and he looks at you as if you have interfered with his daughter. The eastern Germans put an altogether different value on the car. ('Psychological wall still splits the Germans', *The Times* Oct. 2, 94) [a potential entity - a potential entity]

++ss(2) definite - definite; singular - singular; specific - general

- [1] Unless steps are taken quickly, the coelacanth, a fish thought to have accompanied the dinosaurs into extinction, really will die out, according to zoologists at Max Planck Institute for Behavioral Physiology in Seewiesen, Germany. The scientists are using submersibles to document the decline of the fish in the Indian Ocean, off the coast of Grande Comore Island. (*International Herald Tribune* 4/20/95) [a potential entity - the same entity (anaphoric)]
- [2] The numbat or banded ant eater lives in the eucalyptus forests of South Western Australia. There are now just two populations. The termite-eating marsupial has been harmed by the introduction of cats and foxes and the destruction of its habitat for fire control. (*The Times* Jan. 3, 96) [a potential entity - the same entity (anaphoric)]
- [3] The osprey was persecuted to extinction in Scotland, with the last one dying in 1916, but the breed has made a slow recovery since the first pair bred again in 1954. The year a total of 95 pairs raised 146 young, the largest number since records began. (*The Times* Oct. 8, 94) [a potential entity - the same entity (anaphoric)]
- [4] I confess that when first I made acquaintance with Charles Strickland I never for a moment discerned that there was in him anything out of the ordinary. Yet now few will be found to deny his greatness. I do not speak of that greatness which is achieved by the fortunate politician or the successful soldier; that is a quality which belongs to the place he occupies rather than to the man; and a change of circumstance reduces it to very discreet proportions. (opening of *The Moon and Sixpence* by Somerset Maugham 1919)

++ss(3) definite - definite; singular - singular; general - specific

- [1] Some historians claim that the war was virtually over, and that the Japanese leaders, seeing their wasted cities and the total collapse of the country's

infrastructure, would have surrendered without the atom-bomb attack. But this ignores one all-important factor: the Japanese soldier. Countless times he had shown that as long as he had a rifle or a grenade he would fight to the end. The only infrastructure the Japanese infantryman needed was his own courage, and there is no reason to believe he would have fought less tenaciously for his homeland than for a coral atoll thousands of miles away. (J. G. Ballard's story, *The Sunday Times* 20/8/95)

++ss(4) definite - definite; singular - singular; description - pronominal

- [1] You can stir the jam into the pudding, observes Thomasina Coverly, but you can't stir it out again. (opening of a review, *The Independent*, 25/5/94) [a potential entity - the same entity (anaphoric)]
- [2] The kouprey: a forest-dwelling ox down to between 100 and 300 animals. It lives in parts of Western Vietnam, . . . (*The Times* Jan. 3, 96) [a potential entity - the same entity (anaphoric)]
- [3] John Major has a vision: of an unreformed House of Commons at the centre of a patronage state. He is committed to dismantling the 19th-century reforms which introduced a neutral civil service, while insisting that the present structure and style of Westminster should be retained. (*The Independent* 29/7/94) [a particularised entity - the same entity (anaphoric)]

++ss(5) definite - definite; singular - singular; pronominal - description

- [1] Asked what he meant by 'Beyond', *Richards* responded, "Beyond anything you can think of." (*I. A. Richards: his life and work* by J. Russo, London: Routledge 1989, p. 609) [cataphoric]
- [2] When he quotes from Bishop Lowth who was educated at the University of Oxford and enjoyed, 'a well-regulated course of useful discipline and studies',

the author does not rebuke him or attack him for having such sentiments about Oxford but praises him, . . . (W1A-018-92) [cataphoric]

++ss(6) definite - definite; singular - singular; description - proper noun

[1] The boy with fair hair lowered himself down the last few feet of rock and began to pick his way towards the lagoon. . . . The fair boy stopped and jerked his stockings with an automatic gesture that made the jungle seem for a moment like the Home Counties . . . *Ralph* . . . (the opening of *Lord of the Flies*, by W. Golding, Penguin Modern Classics 1954) [cataphoric] (cf. 3.2.1)

[2] Here was this fat man up on a piano, dancing in a way that suggests that, during rehearsals, he had miscalculated a pervy groin grind and ended up on the floor, screaming for his manager to put a detachable, rubber, non-slip surface on the old Joanna ...

‘Aye, aye,’ my dad said, looking up from the ‘\$400 and Under’ second-hand cars’ section of the local paper, ‘it’s *old Tommy Jones*. I know him.’ (opening of a feature in *The Times*, Dec. 10, 94) [cataphoric]

++ss(7) definite - definite; singular - singular; proper noun - description

[1] John Major has a vision: of an unreformed House of Commons at the centre of a patronage state . . .

So the Prime Minister has chosen to do battle with the opposition parties on constitutional territory. (*Back to the age of patronage*, *The Independent* 29/7/94) [anaphoric] (cf. 3.2.1)

++ss(8) definite - definite; singular - singular; proper noun - proper noun

[1] John Major is facing a new move to oust him as Tory leader by his right-wing critics, . . .

The move will fuel the debate inside the Tory party over whether *Major* should lead it into the next general election. (the opening of a news bulletin in *The Sunday Times*, 13/11/94)

- [2] Since it was first mentioned in chronicles dating from 1147, Moscow has played a vital role in Russia history; indeed, the history of the city and of the state are closely interlinked. For more than 600 years *Moscow* has also been the spiritual centre of the Orthodox Church of Russia. (the opening of 'Moscow', *Encyclopedia Britannica* 15th edn.)

B.

The number of the co-referring expressions used remains the same but the definiteness is different.

-+pp(1) indefinite - definite; plural - plural; identical heads

- [1] In case I was tempted to gloss over certain thoughts, I decided to share the diary which had helped me admit to myself what I was now admitting to the listeners. Here are some of those thoughts. (W2B-001-116) [anaphoric; particular entities - particular entities]
- [2] 'When you soak beans in cold water, the beans are actually still alive and their cell walls are designed to be a very good barrier - to take water in, but not to let the seed nutrients out.' (*International Herald Tribune* 4/21/94) [anaphoric; potential entities - potential entities]

-+pp(2) indefinite - definite; plural - plural; specific - general

- [1] *Dugongs, or sea cows*, are declining in numbers throughout their fairly wide geographical range. In the Gulf, we are lucky to have probably the largest population in the western hemisphere - perhaps as many as 7,000 - but numbers

are thought to be declining. These gentle, shy creatures inhabit the shallow coastal areas where the seagrass on which they feed grows. (W2B-029) [anaphoric]

-+pp(4) indefinite - definite; plural - plural; description - pronominal

[1] The lesson the British have learned is not to appease dictators because they cannot be assuaged. (W2E-002-49) [anaphoric]

[2] The alarm system does contain two panic alarm devices. These are located in reception (our street entrance) and the cashier 's office (4th floor). (W1B-028-103f) [anaphoric]

-+ss(1) indefinite - definite; singular - singular; identical heads

[1] A woman sat on a rock dressed in anorak and jeans and wellington boots. She had a dog at her feet. *The dog* was watching its mistress, who was watching him. Cosmo could not see *the woman's* face but he thought, She will do. (W2f-018-117) [a particular entity - anaphoric reference back to the same entity]

[2] A guest arrives at a restaurant completely unaware of any dress code. Then, at the entrance, he is enlightened: 'Sorry Sir, gentlemen are required to wear ties in our restaurant.' One would think that at this point, the guest would be politely tossed out. But unfortunately, a more severe punishment is in store for him ... (*The Economist* Feb. 6, 93) [a potential entity - anaphoric reference back to the same entity]

[3] The secret behind the success of the male pill is the discovery that a weekly dose of the male hormone testosterone makes a man temporarily infertile. In an extraordinary paradox, this boost of testosterone baffles the brain into thinking the man's testes are working full out, when they are not. (*The Sunday Times* 29/10/95) [a member generic entity - anaphoric reference back to the same entity]

-+ss(3) indefinite - definite; singular - singular; general - specific

[1] *An orange and black songbird* found in the jungles of New Guinea has become the first bird proved by scientists to be poisonous.

The hooded pitohui's defence mechanism, powerful enough to kill a mouse in minutes, was discovered by accident by American scientists trying to catch birds of paradise, according to John Dumbacher, of the University of Chicago. (*The Times* 31/10/94) [anaphoric]

-+ss(4) indefinite - definite; singular - singular; description - pronominal

[1] In the sea, once upon a time, O my Best Beloved, there was *a Whale*, and he ate fishes. (the opening sentence of R. Kipling's *How the Whale got his Throat, Just So Stories*, Penguin Classics) [a particularised entity - the same entity; anaphoric]

[2] Allow me to introduce you to a popular newcomer on New York's social scene. He is not much to look at. Indeed, with his buck teeth, lank whiskers and shrivelled skin, he may be the ugliest celebrity for many years, yet Manhattanites have become obsessed with him. He is the naked mole rat of East Africa. (*The Times* 4/18/94) [generic; anaphoric]

-+ss(5) indefinite - definite; singular - singular; description - proper noun

[1] On Thursday a dark-haired, neatly dressed British woman and her bearded, bespectacled German husband will stand before five black-robed judges as the verdict is read out on one of the biggest and potentially most damaging spy cases in Nato's history ...

For *Ann Rupp*, 46, it will draw a line under a story that she still cannot quite believe. It is the story she tells here: ... (opening of a feature in *The Sunday Times*, 13/11/94)

-+ss(9) indefinite - definite; singular - singular; bridging

- [1] A recent job ad in national newspapers sought graduates with degrees in Arabic, Chinese, Urdu, Punjabi, Japanese, Persian, Russian and Serbo-Croat. More surprisingly, given the identity of the advertiser, it also appealed to graduates with “degree-level knowledge” of Spanish, Portuguese, Dutch, German, and Italian. (*The Guardian* 11/23/94)

-+ss(10) indefinite - definite; singular - singular; overlapping

- [1] A student who had sex with *a college girl* despite her complaints that she was too tired to make love wept yesterday after being cleared of rape. The alleged victim left the court crying after the judge ordered the jury to reach a verdict of not guilty. (*The Times* 11/24/94) [anaphoric]
- [2] Bearded Neville Hawkins, a 47-year-old hospital worker, sits in the passenger seat of *a Sun reporter's* car after demanding £50,000 for a copy of the cassette. The married dad, calling himself ‘John’, was desperate to hide his identity at the shadowy rendezvous - his second meeting with our man. (*The Sun* 1/31/96) [anaphoric]

+--ss(1) definite - indefinite; singular - singular; identical heads

- [1] The wild turkey looks quite like an old Norfolk turkey - generally brown, or even black, with brilliant reflections of bronze or metallic green, and the same bare head and neck adorned with red wattles that is familiar to us in farmyard birds. But the wild turkey is a trim, athletic bird . . . It's a hard life for a turkey. (‘Wild about turkey’, *The Times* 12/24/94)

+ss(2) definite - indefinite; singular - singular; specific - general

- [1] If sexual intercourse began in 1963, as Philip Larkin claimed, it was the pill that ushered it in. The arrival of a contraceptive that was reliable, easy to use and under female control, put men and women on an equal sexual footing for the first time in history. (*The Economist* Dec. 25, 93 - Jan. 7, 94)

C.

The definiteness of the co-referring expressions used remains the same but the number is different.

--pn(2) indefinite - indefinite; plural - noncount; specific - general

- [1] Labour MPs have been told that beards cost votes. Why, asks ROLAND WHITE, is facial hair given such a tuft time? (*The Sunday Times* 4 Feb., 1996)

--ps(1) indefinite - indefinite; plural - singular; identical heads

- [1] Proper adventuresses make the world a better place with their adventures: they enrich our lives. The definition of an adventuress cannot just be someone who chases plutocrats. No, an adventuress must take risks, cross boundaries, show tastes, have a will to power, possess a daring capacity for pleasure . . . (*The Sunday Times* 13/8/95)

- [2] . . . The idea is that vitamins, taken either as fruit and vegetables, or in the form of vitamin pills, mop up free radicals in the cells that, left to their own devices, would do considerable damage.

A free radical is any molecule in the body that carries an unpaired electron. (*The Times* June 3, 94)

--ps(4) indefinite - indefinite; plural - singular; description - pronominal

- [1] Babies always keep you awake at night. Especially when you can't have one.
The Times 12/16/95) [lexically anaphoric]

--sp(1) indefinite - indefinite; singular - plural; identical heads

- [1] Perhaps it's because a shopping mall is thought to be so risk-free that Jamie's snatching there seems to be peculiarly shocking. Malls are seen as safe, there are no cars to run you over, no pubs letting out; security guards are on the gate or they ought to be. (*The Observer* 2/21/94)

- [2] What is a fish? Fish are aquatic vertebrates which breathe by means of gills.
(*Fishes of Britain & Europe* by Peter Miller, London: Diamond Books 1994)

++ps(1) definite - definite; plural - singular; identical heads

- [1] As for crabs, these creatures have two nerve centres, and these should be destroyed before the creature is cooked. ('How to kill your crustacean', *The Times*, July 3, 93) [potential entities - potential entity]

- [2] Will we ever understand how our brains work? We know that the human brain is incredibly complex and that its activity is always changing. (*The Times* May 4, 94) [potential entities - potential entity]

++sp(1) definite - definite; singular - plural; identical heads

- [1] The harbour porpoise is the smallest and by far the most common of the whales and dolphins living in the waters around Britain. . . .

The best-documented threat it faces is from bottom-set drift nets, which are like curtains, several miles across, running along the sea-bed. The porpoises become

entangled in these nets and drown; surveys have suggested about 10,000 die this way each year, . . . (*The Independent* 26/12/95)

++sp(2) definite - definite; singular - plural; specific - general

[1] As much as any animal can be, the saola is publicity shy. For thousands of years, small herds of these gentle, goatlike creatures munched their way through the mountainous grasslands of Indochina, drawing so little attention that the outside world had no hint of their existence. (*International Herald Tribune* 11/30/94) [anaphoric; semantic dependency]

[2] The French know there is an oyster for every taste. For value for money and a superb creamy sweet flavour, opt for the increasingly fashionable papillon or butterfly oyster. These small, plump crinkle-shelled creuses come from the oyster beds of Marennes, near Royan, France's largest oyster producing region. (*The Times* 4/15/94) [anaphoric; semantic dependency]

++sp(4) definite - definite; singular - plural; description - pronominal

[1] The green-fleshed Ogen, for instance, is technically a cantaloup. Generally, they have a hard rind, which may be scaly, and broad ribs. (*The Independent* 13/8/94) [semantic anaphoric dependency]

++sp(9) definite - definite; singular - plural; bridging

[1] But scientists believe the porpoise, *phocoena phocoena*, is also vulnerable to long-lasting, toxic pollutants which flow down rivers into the sea, get into the small fish it preys upon and then accumulate in the porpoise's body fat. It may also be frightened away from busy areas by the noise and movements of ships and boats.

The males grow up to 1.7 m long. The females are sexually mature at only 14-months-old and they give birth to single calves. (*The Independent* 12/26/95)

D.

Both the definiteness and the number of the co-referring expressions used are different.

--ns(2) indefinite - definite; noncount - singular; specific - general

- [1] The sense of humour in Germany is very different from that in French, largely because the French have absolutely no interest in *anal humour*, while the Germany have an enormous interest in the subject. (*Foreign Bodies* by Peter Collett, Simon & Schuster, 1993) [anaphoric]

--ps(1) indefinite - definite; plural - singular; identical heads

- [1] Ospreys and red kites have had their best breeding season for more than a century, the Royal Society for the Protection of Birds said yesterday ...
The osprey was persecuted to extinction in Scotland, with the last one dying in 1916, but the breed has made a slow recovery since the first pair bred again in 1954. (*The Times* Oct. 8, 94)
- [2] The automobile revolution is proving to be more enduring than the political. Everyone in the east talks on and on about cars: buying them, selling them, finding the right sunroof or appropriate shade of blue. All the new choices that have seemed to dribble away over the past three years, are still mystically attributed to the car. ('Psychological wall still splits the Germans', *The Times* Oct. 2, 94)

--ps(2) indefinite - definite; plural - singular; specific - general

[1] As a top predator, tigers need a great deal of forest. If a community commits itself to saving a few dozen tigers, then it also commits to preserving hundreds of square miles of jungle - which can itself be a crucial resource for a wide range of products, from timber to tourism revenues. In the process, the future of the other plants and animals living alongside the big cat is also guaranteed. (*The Independent* 14/9/95) [anaphoric; semantic dependency]

[2] Scientists have halved their earlier estimates of the number of blue whales thought to be alive in the Southern Hemisphere. Researchers of the International Whaling Commission, who are meeting in Mexico, said the southern population of the biggest living mammal may now be down to as little as 450. (*The Times*, 5/25/94) [anaphoric; semantic dependency; referential equivalents]

--+pss(1) indefinite - indefinite - definite; plural - singular - singular; identical heads

[1] Older men, you may have noticed, have a new spring in their step. Their bottoms may wobble, they may be unmoved by the lyrics of Take That, and The Daily Telegraph crossword may be their idea of youth culture, but older men are the coming thing. They are not just in demand as sugar daddies or to pass on the benefit of their experiences, either. With our young men dropping like flies, they are in demand for sex and romance . . .

No, life is never dull as an older man . . .

The older man is well represented in a list reported last week, compiled by Hollywood Reporter magazine, of actors thought to guarantee success in cinemas across the world. (*The Sunday Times* 14/5/95)

-+sp(4) indefinite - definite; singular - plural; description - pronominal

- [1] fox I suppose would take a sitting hen but I mean they're so scarce compared with the abundant red grouse around that they're far more likely to find those (SEU-S-10-08-178) [semantic anaphoric dependency]
- [2] Affairs can, of course, signify that a person is wanting to end a marriage. The affair may be with someone with whom they want to spend the rest of their lives, or it may be with a transitional person who at the time seems important and exciting, but who ends up getting hurt. (*The Trouble with You*, by Zelda West-Meads, London: Hodder & Stoughton 1995)⁶² [semantic anaphoric dependency]

+sp(1) definite - indefinite; singular - plural; identical heads

- [1] The nut - the name for any seed or fruit consisting of a soft, edible kernel and a tough, woody shell - is hard to classify. I have found it defined as a fat and as a protein; on the Continent it is categorised as dried fruit. But there is no disputing that nuts are a rich source of vegetable protein. (*The Times* 28/11/92)
- [2] Take the mountain and the brown hare, two closely related *mammals*. Mountain hares, which often turn white in winter, don't usually inhabit the lowlands, where the brown hare thrives. (*The Independent* July 4, 94)

+sp(2) definite - indefinite; singular - plural; specific - general

- [1] Revered and feared, the tiger is in jeopardy partly because most of its range is in poor countries that have high population densities and rapidly increasing numbers of people. Its forest habitat has been rapidly depleted and the tiger and peasants are not naturally good neighbours. The big cat finds that livestock makes an easy meal, and some older animals even turn to eating people. (*The Independent* 14/9/95)

3.3 summary

In Chapter III I have established a system of how English NPs are interpreted. Firstly, I have clarified all the formal features of a noun phrase which are significant to its interpretation. Secondly, I have distinguished the two basic roles that a noun phrase plays in discourse. One is the introductory expression which may lead to a co-referential network and the other is the dependent co-referring expression, which depends on the introductory expression for its co-referent or descriptive content. Thirdly, I have specified five basic processes of how an introductory expression may be interpreted. Fourthly, I exhaustively documented the major types of relation between two co-referring expressions in a discourse. Finally, I have summarised the achievements in this chapter in a comprehensive co-reference system of English noun phrases which employs four sets of features to pin down the complex relations among them.

Chapter IV

Assigning Reference to Noun Phrases (II)

Nature of Referents and Reference Assignment

4.1 referents of noun phrases

4.1.1 linguistic reference

Linguistic reference is a relation between a linguistic expression and another entity which it is used to represent on a certain occasion by an agent. Users of a language exploit their semantic knowledge and general ability of reasoning with beliefs in their memory to make the conveyance of a message and its interpretation possible. Reference in a theory of language comprehension is concerned with two particular kinds of relations. One is textual reference - the relation between two co-referring expressions (cf. 3.2.1, 3.2.2 and 3.2.5). The other is representational reference - the relation between an expression and a mental representation constructed based on the clues from both the expression and its context. Ultimately, the referent is what is being talked about by the expression in a particular context¹. By using a referring expression, the communicator draws the addressee's attention to the entity represented by the expression. In general, if the addressee can reconstruct a mental representation of what the communicator is talking about on the basis of the expression and context², then her act of referring is successful³.

In representational reference, the entity being represented may be something which can only be mentally represented or something which physically exists. While the philosophical tradition emphasizes the metaphysical existence of the referent, in a theory of utterance interpretation we should look for what the speaker wants to communicate rather than what physically exists in the world⁴. Crane (1995) expressed

philosophers' puzzle over representation: if *a* represents *b*, then such a relation of representation exists; but how can the relation exist while the original of the representation doesn't. For example, the oil painting 'The Judgement of Paris' is a representation and the representation exists. But what is being represented, the event of the judgement of Paris, didn't. However, what matters in cognition is that something is being represented, and what matters in linguistic reference is that something is being referred to. The task of assigning reference to a referring expression is to establish a representation of the referent. The ontological status of the represented or the referent is an issue separate from and insensitive to the mechanism of representing or referring.

Representation permeates every aspect of our cognitive life because, for example, we cannot carry a mountain, or everything else, around in case we want to think about it or talk about it. We have to represent things that we want to think about or talk about with something more manageable, such as mental representations and words. Though resemblance is the most common means of helping the addressee establish the relation between a representation and its original, it is the combination of the communicator's intention and a conventionalized representational scheme which determines what a representation stands for. For example, if the communicator wants to use some cutlery to show her plan of building a dam, she has to make sure first that her addressee recognises her intended signifiers: e.g. the serving knife represents the dam, the two serving spoons stand for mountains, and a napkin ring is the turbine, etc. and then stick to the scheme. In verbal communication, the communicator can make use of the decoded meaning of a language but in order to convey more precise and complex thoughts she also has to take into account the addressee's ability to retrieve an appropriate context to process her utterance. This whole process on either side is constrained by the principle of relevance (cf. Chapter II).

4.1.2 referring vs. non-referring

The view of relating reference to truth and physical existence in the tradition of logical positivist philosophy⁵ is still influential in linguistics⁶.

Givón (1993:213) gave the following definition of reference: ‘a mapping relation between linguistic terms (such as noun phrases) and entities which exist in the Real World’. This definition emphasizes what physically exists rather than what is mentally represented. The implication of the definition may be shown by examples [1], [2] and [3], which are all supposed to be uttered on August 1, 1995 by a particular Mary. According to this definition, only the italicised expressions in [1] are used to refer while the italicised expressions in [2] are not because neither ‘the present emperor of China’ nor ‘a dragon’ exists in the Real World⁷. As for [3], it is difficult to apply this definition since the existence of UFOs is controversial.

[1a] *The current president of United States* is an adult.

[1b] I saw *a dog* this morning

[2a] *The present emperor of China* is an adult.

[2b] I saw *a dragon* this morning

[3a] *The UFO photographed by the US military in 1994* is egg-shaped.

[3b] I saw *a UFO* this morning

The referents of the italicised expressions in [1], [2] and [3] may have different ontological status, but each of them is used to refer to something which the communicator wants to talk about and whose representation is for the addressee to recover. Obviously Givón’s definition of reference makes predictions which cannot be used to explain our linguistic behaviour. In recovering what is represented by these expressions, we treat both the italicised expressions in [2a] and [3a] in the same way as

we treat those in [1a] and any other instances of *esphora* (cf. 3.2.4.5). We also treat both of the italicised expressions in [2b] and [3b] in the same way as we treat the one in [1b] and any other referring indefinite expression (cf. 3.2.4.1). The mechanism of assigning a representational referent to an expression is insensitive to the ontological status of a representational referent.

When a nominal expression is used as an introductory referring expression in a discourse, the addressee will readily regard it as having a representational referent, which is realised as a mental representation, consisting of some conceptual content, fewer assumptions at first and more in due course. The expression, whose existence in the universe of discourse is thus established, can in turn be referred to textually by a set of co-referring expressions (cf. 6.2.1; 6.2.5), e.g. ‘the dog’ or ‘it’ in [1b’]⁸:

[1b’] I saw a dog this morning and *it / the dog* had no tail

[2b’] I saw a dragon this morning and *it / the dragon* had five claws

[3b’] I saw a UFO this morning and *it / the UFO* had a huge searchlight

Again, the mechanism of tracing co-referring expressions in textual co-referential networks is insensitive to the ontological status of the representational referent.

An expression is used to refer when it is used to represent what the communicator is talking about on a certain occasion. If we want to express such a situation in logical symbols, the traditional notion of the existential quantifier needs to be modified for a theory of utterance interpretation because many nominal expressions are used to refer to entities which may not physically exist. Traditionally, if a communicator asserts [4],

[4] The present king of France is bald.

when the referent of the underlined expression doesn't exist in the real world, she is said to be violating the existential presupposition of the underlined expression. According to Lyons (1995:298), for example, on such an occasion, the communicator has failed 'to express any proposition at all'. For a theory of utterance comprehension, however, the communicator has expressed a proposition in the sense defined in Chapter II. Such a theory doesn't have to be involved in whether the proposition expressed in [4] is metaphysically true or false. The violation of the existential presupposition of an expression doesn't affect the process of its reference assignment (see 4.1.5 and 4.2 for how the violation of a factual existential implication affects the process of noun phrase interpretation). In general, in language comprehension, as argued by Fodor (1979) and Ioup (1977), 'the question of whether an individual actually exists is irrelevant' (cf. Cormack & Kempson 1982 (1991:563)). What matters is what the communicator intends to convey to the addressee. In the light of Givón's observation about entities in the universe of discourse (cf. Givón 1993:214), I propose an informal discourse existential quantifier to be used in a theory of utterance interpretation:

Once a nominal expression has been used to introduce an entity into the universe of discourse, it is treated as being under the scope of a discourse existential quantifier, regardless of what ontological status its referent may have.

4.1.3 specific⁹ vs. non-specific

When interpreting the underlined NP in [1a], one may draw a contextual implication (cf. 2.1.5ff) for it via both the information from the utterance and the reader's general knowledge in a case of inference as shown in [2]:

- [1a] Like seasickness, love is terminal to the afflicted, but funny to outsiders.
Perhaps, in my case, I was merely infatuated, tickled pink by oodles of sex,

flattered silly to be found attractive by a woman other than, and one a decade younger than, my wife. (*The Sunday Times* 18/2/96)

[1b] Appointed - An American, Carol Bellamy, has won the contest to head Unicef. (*International Herald Tribune* April 12, 1995)

[1c] A receptionist sat behind a glass partition to the right. (W2F-004-29)

[2a] If, in the universe of discourse set up by the writer of [1], a person was infatuated by a woman, then there must have been a particular woman that infatuated him.
[an assumption of the reader's general knowledge]

[2b] The writer of [1] was infatuated by a woman. [information from the text]

Therefore,

[2c] There must have been a particular woman who infatuated the writer of [1] in the universe of discourse set up by the writer of [1]. [contextual implication]

I call it a **particularised existential implication**, as opposed to a **potentially existential implication**, which applies to cases where the above inference cannot be performed, like the referents of the underlined NPs in the following examples:

[3a] Yes, I would like a child although I am now 41 . . . On the whole I do believe to have that it's better to have a father around. A marriage also simplifies the problem of what surname to give a kid. (*The Guardian* 12/16/95)

[3b] A driver can raise the car which is useful in conditions like these or engage sport mode which drags the car down on its haunches giving it a torque stance through the bends (S2A-055-40)

The NP interpreted with a potentially existential implication can be quantified, like 'two people'; the entity to be referred to can be concrete, like 'people', can be relational, like 'a spouse', and can be an event, like 'an affair':

- [4] More than 40 per cent of French people believe it is possible to love two people at the same time, according to Mme Abdesselam. And 65 per cent would rather remain in blissful ignorance if a spouse is having an affair. (*The Times* Nov. 1, 1995)

On the other hand, an NP interpreted with a particularised existential implication can also be abstract, like 'a major challenge' in [5]:

- [5] Over the past decades, a major challenge to a widely accepted view of the human mind has developed across several disciplines. (opening of 'Toward a topography of mind: an introduction to domain specificity', in Hirschfeld & Gelman 1994)

In terms of semantic roles of verbs as identified in Quirk et al. (1985:740ff), the following linguistic environments can evoke a particularised existential implication for an indefinite expression, justifiable by the same type of inference illustrated in [2].

agentive subject:

- [6a] *A friend* has asked to me to meet her at 12 pm . (W1B-007-63 - social letter)

- [6b] *A man* has been arrested after firing two shots only two hundred yards away from President Gorbachev in Red Square (S2B-016-118 opening of a broadcast news bulletin)

affected subject:

- [7] In amongst the hundreds of civilian vehicles *tanks and trucks* lying wrecked on the road are many tons of live ammunition (S2B-004-72)

affected direct object:

- [8] I saw *a newspaper caricature of somebody which simply showed his sort of shadow* and it was Nixon (S2A-057-64)

affected indirect object:

- [9] General Vladimir Serafanov of the Baltic command told *a press conference* in Riga that servicemen sympathise more with the self-proclaimed Committee of National Salvation than with the elected Latvian government (S2B-015-63)

eventive subject:

- [10] *A reshuffle* was certainly on and the story was around that Norman Tebbit was in the Cabinet. (W2B-012-42)

eventive object:

- [11a] She had *a big argument* with her mother on Sunday (S1A-036-6)
- [11b] Forename4 [the real name has been omitted - YN] was no authority on hairdressers since he can't remember the last time he had *a haircut* & wears his in a long ponytail. (W1B-011-74)

external causer subject:

- [12] *A cold wind* knifed along the Tyne yesterday , rustling autumn leaves along grey streets under grey skies. (W2C-004-64)

instrument subject:

- [13] *A recent poll* asked young uh teenagers who were the great figures of influence in their lives (S1B-028-21)

instrumental object

- [14] For the work he used *a theodolite with a three foot diameter circle* (S2B-045-44)

We may also reason along the same lines about the referent of the italicised expression in [15] before we can judge whether the state of affairs described in [15] is true or not:

- [15] Andrew Vaccari, of London Road, Neath, saw *a crescent-shaped UFO*, travelling at a terrific speed from the direction of Wern Mountain, Poret Talbot, towards Mumbles. (OED)

If he saw it, there must have been a particular UFO that he saw¹⁰.

Related to the issue of whether an expression can be used to 'refer' or not (cf. 4.1.2) and the two contextual implications I have shown above, a group of terms have been used in philosophy and linguistics, variably as: specific vs. non-specific (e.g. Cormack & Kempson 1982 (1991:548); Huddleston 1984:254; 1988:91; Ludlow & Neale 1991:177; Rouchota 1994b:207ff; and Greenbaum 1996: 5.16), referential vs. non-referential (e.g. Chastain 1975:212; Foley 1994:1682), or referring vs. non-referring (e.g. Givón 1993:215). The scholars who have employed these terms can be re-divided into two groups according to what they actually mean by using these terms.

Huddleston (1984; 1988), together with Greenbaum (1996), belongs to one group¹¹ and he has given a standard explanation of what specific reference is:

[16] '(1) Ed bought *a house* in Honour Avenue.

In (1) there must have been some specific, some particular house that he bought.

The speaker may or may not know which it was, but that is beside the point: if Ed bought a house there, there must have been a specific house that he bought, No 5, No 8, or whatever' (Huddleston 1984:254).

In [1] Huddleston has reached the conclusion that the referent is specific via an act of pragmatic inference which I have adopted in [2] above, and the validity of the conclusion is based on our acceptance of the major premise:

[17a] If a person bought a house in a certain place, then there must have been a specific house that he bought in that place.

[17b] Ed bought a house in Honour Avenue.

Therefore,

[17c] There must have been a specific house that he bought in Honour Avenue.

As I have shown, an implication like [2c] or [17c] may be drawn with regard to whether a particular entity is being talked about (but not being identified) in an utterance by the speaker. This is the basis on which the first group of scholars has built their definition of specific reference. In factual modality this type of inference is on the whole straightforward, as shown by the examples in [1] and [5] - [17]. Givón (1993:216ff) predicted that an indefinite NP would receive referring / non-referring dual interpretations¹² when it fell under the scope of non-factual propositional modality or habituals¹³. Another group of researchers emphasise 'a particular individual in mind'¹⁴ and one of their typical analyses involve an example in the scope of a type of non-factual propositional modality:

For example, if someone rings a friend and asks *What are you doing?* and the response is *I'm looking for a snake*, the nominal *snake* could be either referential or nonreferential. If the respondent has a particular snake in mind, for example, a pet boa constrictor, then *snake* would be referential as in (86):

(86) I'm looking for a snake. Moses escaped from his cage.

Here, Moses is the boa constrictor's name. (Foley 1994:1682) [my underlining]

From the utterance *I'm looking for a snake* there is no way for anybody to conclude that 'the respondent has a particular snake in mind', nor that he is talking about a particular snake. When the addressee has finished processing 'I'm looking for a snake', he can merely draw a potentially existential implication for the underlined NP. Only when he reaches the second part of (86), having established the co-referring relation between 'a snake' and 'Moses' and comprehended the event predicate 'escaped from his cage', can he draw a particularised implication via the type of inference I have demonstrated in [2] and conclude that 'a snake' here is used to refer to a particular snake, i.e. a pet boa called Moses. The assumption that the respondent has a particular snake in mind has to be another contextual implication drawn via a process like the following:

[18a] If a person is currently and physically dealing with a particular snake, then he must have this particular snake in mind.

[18b] The respondent is currently and physically dealing with a particular snake [which is another contextual implication available]

Therefore,

[18c] The respondent must have a particular snake in mind.

In a theory of utterance interpretation, the definition given by the first group of scholars is more appropriate because sometimes the addressee has not enough information to draw the implication of 'a particular individual in mind', as shown in

[18]. Suppose the Japanese army wanted to find out a Chinese resistance fighter who was wounded and came to hide among the villagers. When a Japanese officer said [19] to the villagers he had gathered, it was unclear whether he could pick out the man he wanted.

[19] A Chinese soldier came to the village last night and is with you now.

In the same way there is no way for the students to know whether the teacher actually knew who cheated in the exam when she told them:

[20] A student in this class cheated in the examination.¹⁵

Even though she had a singular ground for her assertion, i.e. she knew who had cheated, [20] doesn't warrant that she could convey this by using it. [20] could be taken to mean that the teacher was quite upset about the fact that one of her students had cheated, which doesn't require the singular ground for the assertion and which can also achieve relevance. For example, the students could derive from the teacher's utterance of [20] contextual implications such as if they didn't want to upset their teacher they shouldn't cheat in the exam, if they wanted to maintain the honour of the class they should help the teacher to find out who had cheated, and so on.

In pictorial representation, without further contextual evidence, there is no way of telling whether a person is walking forward to the top of a hill or backward to the bottom of the hill. Similarly, under the scope of non-factual propositional modality or habituals the two interpretations of an indefinite NP are equally compatible with the semantic information encoded in it. Without further information, there is no reason to favour either of them. However, some researchers tend to give a biased interpretation without contextual evidence, as shown in the following examples:

[21a] '... **specific** and **non-specific**. The ... contrast is illustrated in

- i Kim was talking to a doctor
- ii Kim was looking for a doctor

It follows from (i) that there was some specific doctor - Dr Richards, for example - that Kim was talking to, but it does not similarly follow from (ii) that there was a particular doctor that Kim was looking for: we will say, then, that in (i) *a doctor* is specific, while in (ii) - or at least in the more natural interpretation of (ii) - it is non-specific.' (Huddleston 1988:91)

[21b] 'The NP-inherent and contextual restrictions can make clear that the statement is only applicable to one (specific or non-specific) member of the set (as in *I saw a beaver, I want a beaver*).' (Declerck 1991b:93)

[21c] 'A further distinction is sometimes made between specific reference (where particular people or things are intended) and non-specific reference (where instances of the kind of people or things are intended): for example, *I want to buy a second-hand car* or *Sue is looking for a partner*, where *a second-hand car* and *a partner* do not have reference to a specific car or partner.' (Chalker 1992:83)

[21d] '*I'm looking for a hotel* could mean any hotel; *I'm looking for a cat*, a particular one (which is lost).' (Wales 1989:242)

In [21a], Huddleston uses a sentence with factual modality to illustrate specific reference and another sentence with non-factual modality to illustrate non-specific reference. By contrast, in [21d] Wales illustrates BOTH specific and non-specific reference with the same sentential frame of non-factual modality, which is also the one that Huddleston uses in [21a(ii)], with only the object being altered. Huddleston takes it for granted, without specifying appropriate contexts, that the expression 'a doctor' in [21a(ii)] is non-specific, 'or at least in the more natural interpretation of [21a(ii)]' (Huddleston 1988:91). In fact, it is just one of the two equally compatible interpretations available. Without context, neither is more plausible than the other. It is interesting to see the contrast between Huddleston's and Wales's examples, which clearly shows that

sentences with non-factual modality are equally possible for both specific and non-specific interpretations. Both Declerck and Chalker followed Huddleston's practice.

Since each object NP in all the above examples is linguistically equally compatible with the two typical interpretations, the actual reference assignment can only be determined by the context that the addressee has access to when processing the expression. Consider the cases in [4]:

[22] I'm looking for *a cat*

If [22] occurred in an exchange such as [23],

[23] (John seems to be looking for something in the street.)

A passing policeman: Are you looking for something, Sir?

John: I'm looking for *a cat*. You see, I haven't seen my cat all day and I've got a bit worried . . .

the policeman would conclude that the expression 'a cat' was used to refer to a particular one. If, by contrast, [22] occurred in an exchange such as [24],

[24] (In a pet shop)

Owner: What can I do for you?

Customer: I'm looking for *a cat*. A Burmese, perhaps.

then the owner wouldn't think that the customer was looking for a particular cat, but one meeting the specification, 'a Burmese cat'¹⁶.

In appropriate circumstances, 'a doctor' in [21a(ii)], 'a beaver' in the second example of [21b] and 'a second-hand car' in [21c], which are all taken as naturally having non-specific reference, can all be specific, as shown in the following:

- [21a(ii)'] Kim was looking for *a doctor*. Her friend had just recommended him to her as a good eye specialist.
- [21b'] I want *a beaver*, that cute one swimming at the far side of the pool.
- [21c'] I want to buy *a second-hand car*. You know, my friend is offering me his last year's Ford.

4.1.4 attributive vs. referential

Keith Donnellan's (1966) distinction of the 'attributive' and 'referential' uses of 'the x' expressions has been widely commented on¹⁷. His classic account started like this:

... there are two uses of sentences of the form, 'The x is y'. In the first, if nothing is the x then nothing has been said to be y. In the second, the fact that nothing is the x does not have this consequence. (Donnellan 1966; 1972:103)

Donnellan called the use of a definite NP in the first case 'attributive use' and in the second case 'referential use'. The first use is named 'attributive' because 'the attribute of being the so-and-so is all important': 'the speaker wishes to assert something about whatever or whoever fits that description' (ibid., p. 102). Donnellan's explanation of the attributive use of 'Smith's murderer' in the sentence 'Smith's murderer is insane' is as follows:

Suppose first that we come upon poor Smith foully murdered. From the brutal manner of the killing and the fact that Smith was the most loveable person in the world, we might exclaim, 'Smith's murderer is insane'. (ibid., p. 102f)

In the situation described above, 'such a person ['Smith's murderer'] could be identified (correctly) only in case someone fitted the description used' (ibid.).

Donnellan called the second use of a definite NP 'referential' because in this use the communicator expects the addressee to pick out a particular entity with the 'the x' NP used¹⁸. The NP that the communicator has used is only one of many names which have a historical link with the particular entity¹⁹. Donnellan's example of this use goes as follows:

... suppose that Jones has been charged with Smith's murder and has been placed on trial. Imagine that there is a discussion of Jones's odd behaviour at his trial. We might sum up our impression of his behaviour by saying, 'Smith's murderer is insane'. If someone asks to whom we are referring, by using this description, the answer here is 'Jones'. (ibid., p. 103)

The important property of this use is that 'it is quite possible for the correct identification to be made even though no one fits the description we used' (ibid.). That is, in this case the reference will be still successful even if Jones is not the murderer of Smith.

According to Donnellan, when used attributively, the entity represented by the expression 'the x' is anything which fits the description of 'the x' or 'whoever has murdered Smith'. There is a possibility that nothing or nobody in our physical world fits the description. On the other hand, in the referential use, the entity referred to by the expression 'the x' is a unique one intended by the communicator, which may also have other names. Contrary to the case in the attributive use, a historic link, rather than the encoded semantic meaning of the expression plays the crucial role in the accomplishment of the reference. In Donnellan's example of the referential use, the intended referent of 'Smith's murderer' happens to be historically linked with a particular Jones because he has been charged with Smith's murder. Whether Jones is the true murderer of Smith or not doesn't affect the success of the reference because in referential use the conceptual description in the expression is not the key to the referring mechanism. If the speaker has good reason to expect the hearer to know the link

between ‘Smith’s murderer’ and Jones, then the reference is likely to be successful. Meanwhile, the person in question can be referred to as, apart from ‘Jones’ and ‘Smith’s murderer’, ‘Mary’s father’ or ‘Jane’s husband’, if he happens to have a daughter called Mary and his wife happens to be a Jane²⁰.

Indefinite NPs can be used attributively and referentially (cf. Ludlow & Neale 1991; Rouchota 1994b). For example, in [1], the entity that the author is talking about must fit the description of the noun phrase because of the definitional nature of the utterance:

[1] *A positive integer neither 1 nor composite* is called a prime. (Encyclopaedia Britannica (1957): ‘Arithmetic’)

So is the case with the underlined expressions in [2]:

[2a] A female who has been sexually abused by baby-sitters is likely to have particular views about leaving her own children with baby-sitters. (W2B-017-82)

[2b] Your sight can be tested only by a registered optician (optometrist) or an ophthalmic medical practitioner. (W2D-001-2)

Example [2b], for instance, is part of a regulation, which emphasises the importance of the attributes that the people test your sight should have. These examples meet the requirements of Donnellan’s definition of the attributive use: their representational referent is whatever or whoever fits the description.

[A N] NPs may also be used referentially. That is, they may be used to help the addressee to identify a particular entity. Following Donnellan’s account of definite descriptions, this is made possible by the addressee’s knowledge of the link between the expression and its referent. The communicator expects the addressee to have the

knowledge. In the TV series 'The House of Eliott' when Alexander saw that Evie bought the prints he had put out on sale without knowing that they were his, he approached her and said:

[3] Some prints I put out have been purchased by a very beautiful young lady.

Here it is not difficult for both Evie and the viewer to realise that 'a very beautiful young lady' is used to refer to Evie. The expression enables Evie and us to pick out the intended referent because we know that Evie has bought Alexander's prints - we know the historical link between Evie and the purchaser of Alexander's prints. Evie needn't be exactly beautiful to be referred to by the expression.

I will analyse the referential use of an indefinite description in [3] in the light of the revised presumption of relevance in Sperber and Wilson (1995,3.3). Its clause b is as follows:

[4] The ostensive stimulus is the most relevant one compatible with the communicator's abilities and preferences.

It is clear that Alexander has the ability to refer directly to the buyer of his prints by a second person pronoun, namely, 'you', as in [5]. Then it leaves us with only one alternative: that he prefers not to do so.

[5] You have purchased some prints I put out and you are a very beautiful young lady.

Why? Our knowledge about social life tells us that if he had said [5] to Evie, he would embarrass her and may ruin any future opportunity of getting close to her. In this case, the extra effort in inferring the historic link between 'Evie' and 'a very beautiful young lady' in [3] offsets the abruptness in [5]. Also, Evie may easily have derived further

contextual implications such as Alexander was polite and charming because he avoided being abrupt and avoided embarrassing people, which were also intended, though not as strongly, by Alexander.

In sum, in the attributive use the communicator is interested in drawing the addressee's attention to a mental representation fleshed out by the semantic content of the linguistic expression. In this use, the definitional information encoded in the referring expression is all that matters, which is the only thing that secures the success of reference. For example, if the reader of [1] picks out any number which doesn't meet the specification, then the act of referring fails. In the referential use the communicator expects the addressee to know a causal link between her expression and her intended referent and hopes that he would recover the referent via the expression, but not necessarily via the semantic content of the expression. For instance, even though Evie wasn't beautiful or she didn't deserve to be called a lady, she still could be the intended referent, because she was the person who had bought Alexander's prints and we can all recognize Alexander's intention of referring to her with the underlined expression.

4.1.5 factual vs. non-factual

In philosophy the notion of existence has been crucial to the arguments about the referring / non-referring distinction, notably in Russell's theory of definite description. The existential quantifier built into a referring expression is an indispensable part of his theory²¹. Though some philosophers have questioned the notion of existence²², it is often taken for granted that it is physical existence that is in question, as in the discussion of the invented examples in the philosophical literature, e.g. 'the (present) king of France'. When people are arguing about the truth value of 'The present king of France is wise', one of their major concerns is its existential implication or presupposition: 'There is a present king of France'. This implication is generally understood as relating to physical reality²³. Since such a criterion has been considered

so important by many scholars, we need a pair of notions to cater for referents of nominal expressions different in this aspect: factual vs. non-factual.

In communication with real-life information, the Russellian analysis is straightforward, as shown in [1], [2] and [3].

[1] Reagan's daughter posed nude for *a magazine*. (*The Times* 5/30/94)

Our reasoning about the reference assignment of the expressions 'Reagan's daughter' and 'a magazine' in [1] would be something like: The former US president Ronald Reagan has a daughter and so his daughter exists. If she posed nude for a magazine, there must have been a particular magazine she posed nude for. Therefore we can draw a particularised existential implication for the referent. The Russellian existential presupposition of the referent of a definite description can be envisaged as a particularised existential implication in factual discourse. A standard formal account of [1] is in [2], which is the equivalent of [3].

[2a] $\exists x [(\text{posed nude in}' (x)) (\text{reagan's daughter}') \& \text{magazine}' (x)]$

[2b] $\exists x [\text{magazine}' (x)]$

[2c] $\exists x [(\text{posed nude in}' (x)) (\text{reagan's daughter}')$

[3a] There exists a magazine that Reagan's daughter posed nude for

[3b] There exists a magazine

[3c] There exists something that Reagan's daughter posed nude for

Because this is an example from reality, the existential quantifier in the analysis is not difficult to verify. Even though the interpretation of [1] doesn't require this, the evidence is available: the physical counterpart of the referent of the expression 'a magazine', for example, is the July issue of Playboy magazine, 1994.

In the instances of factual communication in [4], though the addressee was expected neither to verify nor perceive the physical counterpart of a referent (cf. 4.1.6) on many occasions, the physical counterpart is assumed to have existed:

- [4a] A bloke rang up the other day from the Express and said uhm oh uhm I just want to confirm uh uh about you and Terry O'Neill and I said hang on a minute why are you bothering me about this (S1A-052-75)
- [4b] A financial adviser from Smith Jones Brown came to see me , and he has recently sent me his advice. (W1B-022-25)
- [4c] Appointed - An American, Carol Bellamy, *has won* the contest to head Unicef. (*International Herald Tribune* April 12, 1995)
- [4d] It's the middle of the night and all is quiet, even the cat is asleep and there is only the clock ticking its way to 1 A.M. (W1B-005 - social letter)

When the expression occurs in a factual discourse and a factual implication is drawn, then the information related to the referent is often most rigorously tested against the addressee's beliefs about the world. If, as a result, the related assumption in his memory is stronger, then he will ask himself whether the communicator believes it's true or whether she is trying to mislead him. For example, when A heard B say 'I visited the king of France today' and A's answer to the first question is 'Yes', then he will think that B is mistaken about a fact. If A's answer to the second question is 'Yes', then he will conclude that she is deliberately giving him some misinformation.

If a referent is not particularised in factual communication, then it is not an existing one, but only a potential one, as those of the underlined expressions in [5]:

- [5a] What is happening with your house situation? Is Ginny still looking for *a flat*? (W1B-002-83f)
- [5b] A is telling B an experience.

A: And she (the medium) said there's a lady standing at the side and her name is Alice

B: Do you know *an Alice*? (S1B-026-16ff)

[5c] so you want to find a wholesale place then (S1A-030-199)

The referent in [5a] is an instantiation of anything which is a flat and that in [5b], anything meeting the description of a wholesale place. The referent in [5b] is an instantiation of anyone who is called Alice. There are no physical counterparts of the representations of these referents.

In the studies of fictional discourse there have been debates on how one can refer to something fictitious (cf. Pollard 1994:1215). Given my arguments about the nature of referents in a theory of language understanding, nominal expressions in fiction certainly have representational referents, albeit often mental. Though we may not expect them to have physical referents, the process of interpreting NPs in fictional discourse is the same as that in factual discourse²⁴, as shown in [6]:

[6a] A receptionist sat behind a glass partition to the right. (W2F-004-29 - fiction)

[6b] She felt she wanted to down a stiff drink. (W2F-010-63 - fiction)

Philosophers like Keith Donnellan claimed that when in referential use we use the form 'The x is y', 'if nothing is the x then nothing has been said to be y' (Donnellan 1966; 1972:103). However, in language comprehension, as long as 'The x is y' has been communicated on a certain occasion, there is always something having been said about the referent of 'the x'. If there is nothing which fits the description 'the x', there is always the decoded mental representation of 'the x'.

A non-factual implication can serve as a background assumption for further inference. It helps to achieve relevance when the addressee actually allows more flexibility in his criterion of truth in inferencing with assumptions related to such an

implication. For example, he wouldn't waste time pondering on why a character in a sci-fi story started melting²⁵.

4.1.6 perceptible vs. non-perceptible

Not every factual referent of an expression is immediately perceptible, as shown by the examples in [1] and [4] in the last section. But immediately perceptible referents are factual, apart from some illusions or controversial cases. Sometimes we need to make use of the mental representation to find its perceptible counterpart. For example, when I entered the office one morning, a colleague of mine said to me, 'Professor Greenbaum wants to see you'. I recovered the representation of 'Professor Greenbaum' in my mind and then used some related assumptions to direct my search for its real-life counterpart. Such action is motivated by the purpose of the communication.

Along this line we can distinguish referents by the criterion whether the representation of a referent has an immediate perceptible counterpart or not. If it is perceptible and finding it is the purpose of the communication, then the addressee may also be able to vindicate his reference assignment with it. To classify reference along such a gradient may have practical implications. For example, in artificial intelligence, if the possibility of perceiving the referent is recognised, the sensory component of a robot will be activated to look for it; otherwise, the search in its general knowledge data base for relevant information will be the priority.

In [1] - [4], a normal hearer will be able to perceive the intended referent of the underlined expressions after he has assigned reference to the underlined expression and he may be able to add new perceptive information to the mental representation of each referent²⁶.

- [1] You and your friend were sitting in your garden and suddenly your friend noticed a dog wandering through your gate and said to you:
Look! There's a dog coming.
- [2] Mrs Pearce introduces the flower girl to Professor Higgins:
This is the young woman, sir. (Bernard Shaw's *Pygmalion*, Penguin Books)
- [3] At dinner table, wife says to husband:
Pass me the salt, dear.
- [4] (A is lifting the lid of a saucepan and saying to B)
Smell it!

When the intended referent is immediately perceptible, a successful reference assignment will lead the addressee to identify the referent with his sensory system. Each of the referents of the underlined expressions in [1] - [4] has a perceptible counterpart though the way that a referent is assigned to it is different. In [1] an indefinite expression is used to introduce something new and semantic decoding (cf. 3.2.4.1) is the major part of the process: the communicator doesn't expect the addressee to think of anything other than a specimen of what meets the description. [2] is an instance of textual reference (cf. 3.2.5.3). The definite expression 'the young woman' is used as co-referential with the indefinite NP 'a young woman', which Mrs Pearce used in an earlier announcement of Eliza's coming. By contrast, the use of a definite NP in [3] is homophoric (cf. 3.2.4.3), a most contextually accessible instance of the class denoted by the head noun - the table salt. The recovery of the referent of the pronoun 'it' in [4] is an example of interpretation with deictic (gestural) clues (cf. 3.2.4.2).

Sometimes the addressee is not required to perceive the physical counterpart, as in the case of [5a], or the representation doesn't have a perceptible counterpart, like the

ones shown in [5b] and [5c]: we are part of the universe so we can't see it from the outside and love is abstract.

[5a] Nine is I think an interesting document which uhm Professor Greenbaum initiated and which I hope everybody uh will have had a chance to digest (S1B-075-101)

[5b] Cosmogony is a branch of science studying evolutionary behaviour of the universe and inquiring into the origin of its various characteristic features. ('cosmogony', Encyclopedia Britannica 15th edn.)

[5c] He showed my children love something that their own father hadn't shown them (S1B-049-164)

Between the two extremes there are some intermediate cases, such as [6] - [8].

[6] A is entertaining B and after the meal, A says to B:
How about a piece of cake?

[7] Mind the gap (an underground announcement)

[8] Beware of the dog (a notice in front of the fence of a house)

In [6] the hearer expects that if he accepts the offer, then the referent of the underlined NP will soon materialise. In [7], if the announcement is made before the train comes, the gap doesn't exist. But the hearer can still establish a conceptual representation of the expression 'the gap' and when a train comes, he will then be able to identify the gap. In [8] the addressee is made to be aware of the possible danger in the surroundings even if the perceptible counterpart of the referent never appears.

In face-to-face communication, since the proposition expressed in a request is to be 'entertained as a true description of a world the speaker regards as both potential and

desirable' (Wilson & Sperber 1988:148), the referent of an expression in it is also potential in that the referent hasn't been individuated, as that of the underlined one in [9]:

[9] stop stamping on it and give up give me a box (S1A-079-233 - conversation between friends)

The addressee may have drawn a contextual implication that there were some boxes nearby and in such a situation, there may have been some perceptible counterparts for the referent. Here, the implication 'there are some boxes nearby' is the pragmatically enriched part of the proposition expressed in [9]²⁷. Since utterances are processed in a context part of which is formed by the assumptions evoked by the expressions in the utterance, other things being equal, some aspects of the referent of an expression can be affected by the meaning of other words in the utterance. For instance, if we replace 'give' with 'fetch', we can derive some contextual implication which eliminates the possibility of having a perceptible counterpart of the referent nearby, since 'fetch' encodes assumptions like 'the entity one wants to get is in another place'²⁸.

4.1.7 descriptive use

There are occasions when a description is said to be used descriptively²⁹. The major grammatical environments for this type of use are as follows.

[i]

characterising subject complement:

[1a] I tell you what I'll I'll buy you a Cherry B if you are *a good boy* (S1B-021-87)

[1b] Prisons should be *prisons* say style police (News Title, *The Observer* 29/8/93)

[1c] In summer time cricket is *the delight of everyone* (S2A-044-85)

[1d] You'd make *a good Christian* you know (S1A-068-222)

In [1a], [1b] and [1c] the verb is stative so the attribute is the current state of the referent of the subject (or a desired state in a conditional in [1a] and [1b]) while in [1d] the dynamic verb makes the attribute resultant.

[ii]

characterising object complement:

[2a] basically they call anything *a burger* that you slap into a roll (S1A-055-191)

[2b] . . . he worked for the company but which now had made him *a distributor*
(S1B-065-48)

The attribute in [2a] is current and that in [2b] resulting.

[iii] prepositional complement:

[3a] I'm not trained as a therapist (S1A-004-86)

[3b] The number keys can be used as a speaking calculator. (W2B-039-28)

[3c] He was not reacting except as a cop on duty reacts, no small-talk, no conversational offers. (W2F-009-77)

[3d] . . . I'd rather be fat as a pudding than thin as a rake like her (W2F-013-45)

[iv] apposition³⁰:

[4a] This is to confirm that Mr Sam Browne, an American student on a year study course at University College London, has been offered casual part time work in the Bloomsbury Theatre. (W1B-021-124)

[4b] He, a man of science, considering a curse! (W2F-016-63)

[4c] The people are really friendly , especially Jeanne, the lady that I work with.
(W1B-002-115)

[4d] Sixteen years before he had married Jessie, the pretty, musical, ambitious daughter of a Sheffield clergyman. (W2F-017-46)

[v] independent:

[5] The question is: who are the Hampstead giants of the moment? ‘Michael Foot,’ comes the confident reply. ‘Probably the kindest, gentlest man I have ever met. A man who sees good in everybody.’ (*The Observer* 10 Dec. 1995)

What mainly achieves relevance in this use is the contextual implications which can be derived from assumptions stored in the concepts such as SPEAKING, CALCULATOR or PUDDING in [3b] and [3d]. For example, from assumptions like [6a] and [6b], we can infer the function of the number keys on a particular equipment.

[6a] If a machine can speak, it can tell us something by sound.

[6b] A calculator is a machine from which we can get new results by putting in numbers we have got.

In interpreting metaphor, the addressee is expected to take a certain subset of contextual implications as being intended by the communicator³¹. For example, the assumptions that a pudding is made of flour or a rake has iron or wooden teeth would not be part of the interpretation of [3d]. But assumptions like rakes are skeletal or puddings are rounded and plump will be taken as being communicated.

In descriptive use, the nominal expression is taken as an abstract conceptual description because it is not used to refer to an instantiation of the entity that the head noun denotes. Neither can it normally be referred to textually. One exception is a cognate object, which is virtually descriptive but it is possible to refer to a cognate

object textually, such as the underlined one in [7a]: one could later refer to the underlined NP in [7a] with a pronoun like ‘it’ while not being able to do so with the one in [7b],

[7a] No one seemed put out that she wasn’t older and that she lived a celibate life herself. (W2F-010-113)

The descriptively used NP can express a characteristic property, necessary (e.g. [8a]) or contingent (e.g. [8b]) property of what it is used to describe.

[8a] A prime number is an integer $p (>1)$ such that p has no positive factors except 1 and p . (‘Number, theory of’, *Encyclopedia Britannica*, 15th edn.)

[8b] In summer time cricket is the delight of everyone (S2A-044-85)

Such differences affect our decision on whether the predicated referent (i.e. the referent of the underlined NPs in [8]) is generic or not (cf. 6.1.2).

4.1.8 functional use and sub-class interpretation

Barwise & Perry (1983:158f) had noted the ‘functional use’ of a definite description, which is concerned with its function or ‘value-free interpretation’ and not ‘its value at a particular location’, as the underlined NPs in [1]:

[1a] The temperature is increasing. (from the Partee puzzle)

[1b] The number of sleeping students was increasing. (Barwise & Perry’s example)

The expressions like ‘temperature’ and ‘number’ used in [1] are abstract names for a phenomenon. In the following examples, a singular expression of a more concrete nature is used to refer to a set of individuals.

- [2a] The President is elected every four years. (Higginbotham's example 1990:253)
- [2b] The King of Prussia was an old man and now is a young man. (Frege's example)³²
- [2c] I pointed out to my partner that nobody in my family had ever divorced and that I had a good track record in honouring my obligations, caring for *sick moggies* until the end. Would I treat a husband any worse than I treat my cat? (*The Guardian* 12/16/25)

In [1a], [1b], [2a] and [2b], a particular member of the set cannot be attributed the predicated property³³. In [2c], the expression 'my cat' is used to co-refer with 'moggies' and is thus understood as being used to refer to, instead of one individual cat, all the cats the writer has at different times had as pets.

The expression in question can also be indefinite, like the underlined one in [3]:

- [3] In a similar vein, David Lewis, of Ipswich, Qld, was impressed to read in *Cosmpolitan* that 'almost a third of single Aussie girls have had sex with a married man'.
- 'My God, who is this guy?' Lewis asks.
- (*The Australian Magazine* May 18-19, 1996)

In [3], it is obvious to a sensible person that the referent of 'a married man' is not one individual, either.

Sometimes a pronoun can be used in this way, as shown in [4]:

- [4] Joe Queen doesn't know how many Iraqi troops he buried alive on the front line . . . you are travelling at five, six, seven miles an hour [in a bulldozer] just

moving along the trench . . . You don't see him. You're up there in the half hatch and you know what you got to do. (*The Guardian Weekend* 12/16/95)

Here the pronoun 'him' is used to refer to a succession of individual Iraqi soldiers: at every instant there was only one of them.

In all of the examples in [1], [2] and [3], the referent of the underlined singular description is a set of individual members / instances. Sometimes the set referred to by a definite description is extensionally the same as the class denoted by the expression, as in the case of 'my cat' in [2c]. By contrast, when an indefinite singular description is used to refer to a set of individuals, the set can never be as big as the class denoted by the head noun, as shown by [3].

How can we account for the interpretation of such a use of singular noun phrases, then? Let's suppose that [5a] is a true description of a state of affairs in the real world. The proposition expressed in [5a] would be something like [5b]:

[5a] A soldier *has stood* in front of the parliament building ceremonially for the last 200 years. (adapted from an example in Rouchota 1994a:444)

[5b] There is an x such that x is a soldier and x has stood in front of the parliament building ceremonially for the last 200 years.

But this interpretation, [5b], is not relevant to us at all because from our general knowledge we know that it is false. If the addressee believes that the communicator of [5a] is benevolent, in such a situation, he should stop 'at the first interpretation that the speaker might have thought would be relevant enough to him' (Sperber 1994a:192). Since [5b] cannot be such an interpretation, he has to move on to the next possible interpretation via the context provoked by the information in [5a] and his understanding of such a situation based on his general knowledge. He may have access to assumptions like 'Soldiers rotate at their post' and 'A rotating post involves more than one soldier'.

Then the easiest implication to draw from such a context is that the referent of ‘a soldier’ in [5a] is a set of individuals. This is a ‘value-shifting’ implication. Such an interpretation contributes to the relevance of the whole utterance because one may get cognitive effects like ‘The parliament has not been a target of terrorists’ or ‘The country has been stable for a long time’.

Related to the value-shifting implication is the sub-class implication, which we draw for an indefinite NP whose referent is some specimens of a sub-class. For example, in [6a], the referent of the underlined expression is most likely ‘some specimens of a type of Italian shirt’ if we have good reason to believe that a shop imports more than one individual shirt at a time.

[6a] We are importing a new Italian shirt. (from Quirk et al. 1985:249)

[6b] Er I don’t expect to make a profit I get to try all the wines at Tesco’s as a result (S1B-078-60)³⁴

In [6b], the hearer would interpret the underlined expressions as referring to ‘different types of wine’ triggered by its pluralisation because ‘types’ or ‘portions’ are the notions most easily associated with the referent of noncount nouns like ‘wine’ or ‘coffee’ except that the notion of ‘portion’ is not applicable here. In 6.3 I will show how this sub-class implication is combined with either member or class generic implications in appropriate contexts to yield either sub-class member generics or sub-class class generics.

4.1.9 the philosophical and cognitive status of a referent and its reference assignment

In Sections 4.1.2 - 4.1.8, I have discussed various uses of definite and indefinite expressions, most of which have been noted in the literature. Do we need these

distinctions in a theory of utterance interpretation? What are their places in a unified account of the interpretation of English noun phrases?

First, let's see how we can analyse the following two examples with the notions discussed in 4.1.2 - 4.1.5:

[1a] (Mrs Pearce, Professor Higgins's housekeeper, mentions the flower girl to Higgins for the first time.)

A young woman asks to see you, sir. (Bernard Shaw's *Pygmalion*, Penguin Books)

[1b] Just before Christmas, the producer of *Going Places*, Irene Mall had asked me to make a documentary on 'warm-up men'. (W2B-001-95 - autobiography)

On the one hand, one may argue that there is a difference in specificity between the two referents of the underlined expressions in [1]. The one in [1a] is specific (cf. 4.1.3) in that the speaker was talking about a particular woman while the one in [1b] is non-specific since it would be the result of the action 'making', which had not been started yet. Also, from the point of view of physical verification (cf. 4.1.5), whether the physical counterpart meets the description does make a difference in the truth value of the proposition expressed by either [1a] or [1b]. For instance, if the woman whom Mrs Pearce is leading into the room turns out to be an old one, Professor Higgins will think that Mrs Pearce didn't tell him the truth. Nevertheless, neither of the above distinctions affects the initial processing of either [1a] or [1b]. In [1a], Professor Higgins has interpreted the NP 'a young woman' and got the result of the reference assignment of the expression, his mental representation of the referent. He can use it in identifying its physical counterpart, which happens after the interpretation of the utterance [1a]. In [1b] after the reader interpreted the NP 'a documentary', its potential existential implication may just stay as a background assumption for a while. If the autobiographer soon shifted the topic, the reader may never need it. The putative notion of specificity is

basically based on inference of the existential status of the referent in an intuitive way (cf. [7] in 4.1.3) and in general has little to do with the communicator's intention.

On the other hand, according to the criterion set by Donnellan (1966; 1978) for attributive use, both underlined expressions in [1] are used attributively because both of their referents are something the attribute of which 'being the so-and-so is all important' (Donnellan 1972:102). Using the conventional wording in this discussion, we can say that the referent of 'a young woman' in [1a] is 'some young woman or other'³⁵, so far as what Mrs Pearce wanted to communicate is concerned. But we don't have to know whether an expression is used attributively in order to do the reference assignment correctly because in the proposition expressed a description used attributively is realised as the result of the semantic decoding and nothing more. So the two propositions expressed in part of [1a] and [1b] will look like these³⁶:

[1a'] There is an x such that x is a young woman and x asks to see you.

[1b'] The writer will make an x such that x is a documentary on 'warm-up men'.

In my unified account, the attributive use amounts to necessarily having a discursively existential implication, and optionally having either a potential existential implication (as in [1b]) or a particularised existential implication (as in [1a]) on the one hand, and either a factual (as in [1b]) or non-factual implication (as in [1a]) on the other (cf. 4.2).

The notion of an attributively used description is often taken as a communicator-oriented one and it cuts across the notion of specificity, which is based on criteria on a different dimension. For example, Rouchota (1994a:447) regarded both of the underlined expressions in [2] as attributively used:

[2a] A drug addict spent the night here.

[2b] A secretary will be hired today.

In terms of specificity, the underlined description in [2a] is specific, as I have argued in Note 8, while the one in [2b] is open to both specific and non-specific interpretations because it is related to non-factual modality (cf. 4.1.3 for details). Their clash is inevitable because of the different backgrounds of the two notions. In my unified account of NP interpretations, ‘a drug addict’ has a particularised existential implication as a background assumption and ‘a secretary’ has both a potential existential implication and a particularised implication as background assumptions and other considerations are not of immediate concern for a theory of utterance interpretation.

Sometimes, the descriptive content of an indefinite expression is the focus to be particularly emphasised, as opposed to the case in [1a] and [1b].

[3a] Since I heard that from a doctor, I’m inclined to take it seriously.³⁷

[3b] Your sight can be tested only by a registered optician (optometrist) or an ophthalmic medical practitioner. (W2D-001-2 - regulation: *NHS sight tests and vouchers for glasses*)

One may draw a non-factual (if we take it to be a made-up example) but particularised implication from the underlined expression in [3a] and a potential but factual existential implication from that in [3b]. In processing an utterance like ‘A doctor was killed last night in the neighbourhood’, the implications one may draw from the expression ‘a doctor’ are most likely to be used as background assumptions. By contrast, in the first half of [3a] the communicator intends that the contextual implications drawn from the expression ‘a doctor’ will be the focus of the relevance of the utterance. She may indicate this by putting a stress on the expression. It is by inferring with assumptions related to the concept of DOCTOR, like those in [4]

[4a] Doctors are qualified professionals

[4b] Doctors have medical expertise

[4c] Doctors are trustworthy

...

that the addressees are expected to derive contextual implications like the one which has been made explicit in the second part of [3a]. In this way, this use of NPs can be accounted for in my unified system.

A particularised implication is also important in a statement like [3a] (if it is taken as factual) when the hearer wants to verify the referent of 'a doctor' to see if the statement is worth believing. He has to find this particular person to see if this person is actually a qualified doctor. On the other hand, there are occasions where the significance of the particularised implication, based on the inference in [7] of 4.1.3, diminishes, as in [5]:

[5] Bird watchers have had a Christmas bonus this year with a flurry of sightings of the rare Arctic redpoll - a small grey-and-white finch. (*The Independent* 26/12/95)

The inference is 'If some Arctic redpolls have been sighted, there must have been some particular Arctic redpolls'. As opposed to the case of [3a], where the qualification of a particular doctor affects the credibility of the statement, the particularised implication drawn from [5] doesn't have the same effect on the relevance of the statement made in [5]. Of course if none of these 'Arctic redpolls' were really Arctic redpolls, then this statement would be false. But unless such a situation happens, the particularised implication can be neglected.

I have argued in the previous sections that physical verification doesn't actually come into the initial processing of NPs. Therefore, it makes more sense to use the discourse existential quantifier I have proposed (cf. 4.1.2) in a general account of utterance interpretation. I illustrate this point further with [6], which has been quoted from Cann (1993:266).

[6] Jo wants to meet a unicorn

Cann was vague as to whether the indefinite NP in [6] is open to both specific and non-specific interpretations because of the philosophical hang-up: how can one refer to what doesn't exist? I propose to treat [6] in the same way as I did [1] in 4.1.5, albeit without a factual implication. That is, once the underlined expression is used to refer to an entity, its existence in the universe of discourse has been established. Since the underlined expression is in the scope of non-factual modality and the verb before the expression requires an affected object, the expression 'a unicorn' is compatible with both specific and non-specific interpretations according to the standard analysis:

[7a] context for specific interpretation:

Jo wants to meet *a unicorn*; he often copies *it* from his favourite picture book and hopes *it* will walk off the paper to be his friend one day.

[7b] context for non-specific interpretation:

- (i) Jo wants to meet *a unicorn* - *it* must have a twisted horn - but so far he hasn't found one.
- (ii) Jo wants to meet *a unicorn* - any unicorn will do - *it* has fascinated him ever since his childhood.

All of the interpretations in [7a] and [7b] are in the scope of a discourse existential quantifier, indicated here as \exists' , as is shown in [8] and [9]:

[8a] $\exists'x$ [(wants to meet' (x)) (jo') & unicorn' (x)]

[8b] $\exists'x$ [unicorn' (x)]

[8c] $\exists'x$ [(wants to meet' (x)) (jo')]

[9a] There exists a unicorn that Jo wants to meet in the universe of discourse

[9b] There exists a unicorn in the universe of discourse

[9c] There exists something that Jo wants to meet in the universe of discourse

When a nominal expression is used to refer to something, it has immediately established itself as existing in the universe of discourse and therefore can be textually referred to. At the same time, it will have evoked its representational referent in the addressee's mind. The above analysis simply states the establishment of a referring expression in the universe of discourse. This fact is equally compatible with further pragmatic work aiming at deriving more cognitive effects, e.g. the particularised interpretation or the potential one, and the factual or fictional status of the referent, etc.

Though philosophers have long argued over the truth conditions of a sentence like 'The present King of France is wise', the fictitious / factual distinction (cf. 4.1.5) in the referent of a noun phrase doesn't affect its initial interpretation as long as the addressee believes that the communicator intends him to process the expression with conventional default schemas. For example, with the above sentence, as long as the addressee has good reason to believe that the communicator intends him to process it with a schema about normal human beings, its interpretation is exactly the same as we do the sentence 'The present Queen of England is wise' [It is a fact that there is a Queen in the present-day UK, Elizabeth II.] because one assumption in this schema, 'People have intelligence and can be wise', is equally applicable to both referents of 'the present king of France' and 'the present Queen of England'. At this stage, the verification of the truth of the utterance is not required.

The communicator may pretend that the addressee can retrieve her intended referent homophorically by using a definite expression (cf. [5] in 3.2.4.3 and [7] in 3.2.3) which the addressee doesn't know. In such cases, expressions with factual or fictitious referents behave in the same way: either representational referent is a mental representation with only the information provided by the text, as shown by the following cases:

[10a] Rough seas had been slamming against the hull of Josh Hall's 60-foot sailboat for five straight days. (opening sentence of a news bulletin in *International Herald Tribune* 10/26/94)

[10b] Maybe it comes from living in San Francisco, city of clammy humors and foghorns that warn and warn - omen, o-o-men, o dolorous omen, o dolors of omens - and not enough sun, but Wittman Ah Sing considered suicide every day. (opening sentence of the novel *Tripmaster Monkey*, by Maxine Hong Kingston, London: Picador)

Under normal circumstances, we can hardly learn from the proper names in [10a] or [10b] anything more than the fact that they are people's names. So the process of their reference assignment is similar to what we do with an indefinite description. The difference between [10a] and [10b] is that [10a] is factual so there presumably was a physical referent which was verifiable and [10b] is fictional so there can only be a mentally representational referent.

Taking into consideration the distinction between whether an NP can or cannot be used to refer and the referring / non-referring interpretations of an indefinite NP described in Givón (1993) (cf. 4.1.2 & 4.1.3), we cannot help wondering what an analysis would be of examples [11a] and [11b]³⁸, based on such a view:

[11a] Jo wants to meet a unicorn

[11b] Janet is looking for a Marxist English Lord³⁹

According to what has been claimed in the traditional account of reference (e.g. as in Givón 1993), we may have to conclude that [11a] and [11b] are 'doubly non-referring'. Firstly, given that there are no such things as 'unicorn' or 'Marxist English lord', the expressions were said not to be able to refer (cf. Givón 1993:214). Secondly, both of the underlined expressions in [11a] and [11b] are under the scope of the irrealis operator and

therefore may again receive a non-referring interpretation. If the two conclusions are put together, these examples will become doubly non-referring. This shows what a theoretical confusion we may end up with in such a model.

4.2 a unified account of interpreting English noun phrases

Interpreting a noun phrase in an utterance can be regarded as constructing a conceptual representation intended by the communicator. This representation is part of the proposition expressed in the utterance (cf. 2.1.8). The task involves two basic phases.

The first phase is decoding, a process within the scope of linguistic semantics. Linguistic expressions have different forms. If they are heard, we first encounter their phonetic and phonological representations and if they are seen, we first encounter their orthographic representations. The decoding is to map these representations onto their corresponding conceptual representations, which are encoded in linguistic expressions. In this framework, concepts, or conceptual representations, are analyzed as having several types of information. A concept has an address so that a conceptual representation can be established around it, stored under it and retrieved via it. The lexical entry of a concept links an expression with the concept so that the addressee can decode the expression via a certain series of sounds or a certain graphic form to get to the concept. The result of decoding is the context-independent semantic content of a lexical item, which cannot directly be part of the proposition expressed by the utterance. It needs to be further processed in the second phase, which is inference.

Inference makes use of the information accessible to the addressee at the time of processing. The access to a concept via a linguistic expression leads him to certain assumptions stored in the encyclopedic entry of the concept. The addressee can use these assumptions and the related conceptual network triggered in his mind to perform a series of inferences in order to find the intended referent and derive contextual effects.

What assumptions he would use as premises and how far he should go with the inference process is constrained by the criterion of being consistent with the (second) principle of relevance. In the process of inference, the addressee relies heavily on contextual clues (in the discourse, in his memory or in the physical surroundings) to establish the intended representation. An intended referent may be perceived immediately (e.g. when talking about a pen in your hand), may be perceived sometime after its mental representation is established (e.g. when referring to a glass of wine your host is getting for you), or may stay only as a conceptual representation in the addressee's mind (e.g. a mythological beast).

In the following I give a unified account of interpreting indefinite and definite descriptions⁴⁰. The account is about what the communicator intends to convey and what she can legitimately convey⁴¹. The account is also about what the addressee is expected to do and how he reasonably does it in utterance understanding. The process starts with semantic decoding of an expression, the result of which, the assembled conceptual content, will be the starting point for developing a representation of the intended referent. The assumptions activated in the process are also available at different degrees of accessibility as part of the context for the on-line processing. Though the initial representation is to be developed according to the most accessible contextual clues, the addressee may change his mind if some other stronger assumption which is available contradicts it.

The examples are arranged along the following features (I have arranged the features in this order mainly for expository reasons):

- | | |
|----------|------------------------|
| α | descriptive |
| β | discoursally referring |
| I | factual |
| II | non-factual |

A	potentially existential
B	particularisedly existential
a	sub-class
b	member generic
c	class generic
d	value-shifting
e	perceptible
f	referential

An initial representation based on the decoding from an introductory noun phrase can be developed in several major ways:

α descriptive:

If there is no contextual clue from which one can infer that the expression is used to refer to an entity, then its use is descriptive (cf. 4.1.7):

- [a] The number keys can be used as a speaking calculator. (W2B-039-28)
- [b] if you are born in the Gorbals and there 's absolutely no chance of your having any money well then you grow up as a normal Gorbals-born person (S1A-075-74)

In this case, the definite article is always used to indicate esphora, the modification within the noun phrase.

- [c] In summer time cricket is the delight of everyone (S2A-044-85)
- [d] By almost all standard measures Haiti, the poorest country of the region, stands at the opposite pole. (W2A-019-63)

β discursively referring

A discursual existential implication for the referent can be inferred if there are some contextual clues which indicate that the expression is used to refer to an entity (cf. discussion of [7] in 4.1.9). The referent at this stage is an exemplification or some exemplifications of the entity or class that the head noun denotes⁴². Such an exemplification can be either a potential one or a particular one.

β.I discursively referring - factual

If the expression is in a factual discourse, a further implication of factuality for the referent is the easiest to draw (cf. 4.1.5), which can serve as background assumption for further inference. For example, in the case of [d] below, such an implication is related to the expectation of receiving a glass of wine in a reasonably short period of time. On the other hand, a non-factual implication will help us to process examples like the following:

[a] John's toothbrush is trying to kill him.

(cf. further in Chapter VII)

β.I.A discursively referring - factual - potentially existential

In addition, if there isn't information present for the addressee to draw a particularised existential implication (cf. β.I.B), a potential existential implication is the easiest to draw.

[a] A keyguard is available which may help prevent accidental key presses.
(W2B-039-20 - practical instruction: *Communication: Equipment for Disabled People*)

- [b] A driver can raise the car which is useful in conditions like these or engage sport mode which drags the car down on its haunches giving it a torque stance⁴³ through the bends (S2A-055-40 - *Top Gear*, BBC2 TV)
- [c] (A is entertaining B)
Would you like a glass of white wine? I've got a chilled bottle in the fridge.
- [d] More than 40 per cent of French people believe it is possible to love two people at the same time, according to Mme Abdesselam. And 65 per cent would rather remain in blissful ignorance if a spouse is having an affair. (*The Times* Nov. 1, 1995)
- [e] Your sight can be tested only by a registered optician (optometrist) or an ophthalmic medical practitioner.⁴⁴ (W2D-001-2 - regulation: *NHS sight tests and vouchers for glasses*)

The definite article in the noun phrase associated with this implication is often used to indicate that the referent is accessible either homophorically⁴⁵, like the NPs in [f], or via bridging inference, like those in [g] and [h]:

- [f] I confess that when first I made acquaintance with Charles Strickland I never for a moment discerned that there was in him anything out of the ordinary. Yet now few will be found to deny his greatness. I do not speak of that greatness which is achieved by the fortunate politician or the successful soldier; that is a quality which belongs to the place he occupies rather than to the man; and a change of circumstance reduces it to very discreet proportions. (opening of *The Moon and Sixpence* by Somerset Maugham 1919)
- [g] Men want to be in charge of contraception, they don't want to place all the responsibility on the woman. And because a man does not have the complication of a monthly cycle, he is even more suited to a hormonal contraceptive. (*The Sunday Times* 29/10/95)
- [h] As preventative maintenance, all fluid seals should be regularly inspected and replaced if necessary. Because the seals in the wheel and master cylinders are

designed to work with brake fluid as a lubricant , a small seepage past the seal into the protective boot is expected. (W2D-018-114f)

If there are some specific clues available, further implications can be drawn on top of the existing ones:

β.I.A.a discursively referring - factual - potentially existential - sub-class

The addressee may draw a sub-class implication for the referent from some specific contextual clues (cf. 4.1.8). The term ‘sub-class’ is used to refer to a referent which is a sub-set or some sub-sets of the class denoted by the NP: ‘a type of X’ or ‘some types of X’. A sub-class interpretation is not necessarily generic.

[a] We may import a new Italian shirt / some new German wines next year (on the non-specific interpretation; adapted from an example in Quirk et al. 1985:249)

β.I.A.b discursively referring - factual - potentially existential - member generic

If the communicator expects the addressee to infer that some property expressed in the utterance is attributed to all the instantiations of a class denoted by an expression, like [a], or to the typical or relevant instantiations of the class, like [b] and [c], then the addressee can draw a member generic implication for the referent of the expression (cf. more discussion in 6.1.2 and Chapter 7):

[a] . . . an isosceles triangle is to be defined as one that has two sides of equal length.
(*Elementary Geometry*, by John Roe, Oxford University Press 1993, p. 4)

[b] but in fact is a Rolls Royce a quality car (Longman Spoken Corpus - f_090301-s n=311)

[c] Danes are nice people aren't they (S1A--089-85)

β.I.A.c discoursally referring - factual - potentially existential - class generic

The addressee may draw a class generic implication if any of the clues specified in 6.2.2 is available to the interpretation of a plural description.

- [a] I would've thought very much so because we are an endangered species we men and we sportsmen (S1B-021-45)

β.I.A.ac discoursally referring - factual - potentially existential - sub-class class generic

The addressee may draw a sub-class class generic implication (cf. 6.3.2) for the referent, as in [a], if clues for both

- (a) a sub-class implication (cf. 4.1.8), and
(b) a class generic implication (cf. 6.2.2)

are available in the context for the interpretation of an indefinite NP. Unlike a singular definite common noun phrase (cf. β.I.B.c), a singular indefinite common noun phrase cannot have a class generic interpretation, but only a sub-class class generic one.

- [a] Martin Jenkins, a researcher with the world Conservation Monitoring Centre, said yesterday that pinpointing the next group of *species* which might be lost was an imprecise science . . . 'It may be that an animal (= a species of animal) not on our list has suddenly *disappeared* without anyone realising,' he said. (*The Times* Jan. 3, 96)
- [b] And who could *invent* a sloth, a slow-motion animal that lives its life hanging upside-down beneath the branches of trees and which has to come down to the ground to defecate? (W2B-021-62)
- [c] Several British species, including varieties probably genetically unique, *remain vulnerable*. Examples include the New Forest cicada of which about ten are left,

a species of ladybird spider called *Eresus niger* found at only one site, and the New Forest burnet moth found at a single site in Scotland. (*The Times* Jan. 3, 96)

In [c] the clue to a sub-class implication of the underlined expression is provided by the three species mentioned below and the clue to a class generic implication is ‘remain vulnerable’, which means ‘being threatened by extinction’: this property cannot be possessed by an individual member of a species.

β.I.B discursively referring - factual - particularisedly existential

The addressee may draw a particularised existential implication for the referent in question if such clues are available (cf. 4.1.3).

- [a] Appointed - An American, Carol Bellamy, *has won* the contest to head Unicef. (*International Herald Tribune* April 12, 1995)
- [b] Since I *heard that from* a doctor, I’m inclined to take it seriously. (when it is taken as an act of factual communication)⁴⁶
- [c] Over the past decades, a major challenge to a widely accepted view of the human mind *has developed* across several disciplines. (opening of ‘*Toward a topography of mind: an introduction to domain specificity*’, in Hirschfeld & Gelman 1994)
- [d] It’s the middle of the night and all is quiet, even the cat is asleep and there is only the clock ticking its way to 1 A.M. (W1B-005 - social letter)
- [e] When Britain and Ireland made the historic Downing Street Declaration on 15 December 1993, some optimists spoke of a ceasefire by Christmas. (*The Observer* 10 Dec. 1995)
- [f] yesterday the sun was just as it is in India (S1A-017-203)

[g] The purpose of this article is to initiate a discussion of the ‘parts of speech’ within the framework of generative grammar. (opening of chapter 7 *Natural language and universal grammar* by John Lyons CUP 1991)

β.I.B.a discoursally referring - factual - particularisedly existential - sub-class

[a] An ant has helped cause six years of delays to a Welsh road scheme. But now agreement has been reached on a way of conserving the social insect and saving the crumbling A470 north-south trunk route from further collapse. On the roadside at Comins Coch, near Machynlleth, lives Wales’ second largest colony of the red wood ant, *Formica rufa*. (*The Independent* 2/15/96)

The referent of ‘an ant’ in [a] is not one individual ant, but a type of ants.

β.I.B.ab discoursally referring - factual - particularisedly existential - sub-class - member generic

[a] Of the reptiles that dominated life on land during the Mesozoic era, about 250 to 66 million years ago, the dinosaurs (whose Greek-derived name means ‘monstrous lizards’) were the most *successful*. (‘dinosaur’, *Reader’s Digest Great Illustrated Dictionary*)

β.I.B.c discoursally referring - factual - particularisedly existential - class generic

The addressee may draw a class generic implication if any of the clues specified in 6.2.2 is available to the interpretation of a plural indefinite common noun phrase or a singular definite common noun phrase. In [c] the modal ‘may’ was used to express factual

possibility and that's why I take the referent of the underlined NP in [c] as belonging to this category rather than β .I.A.c.

- [a] Before pencils were *invented*, thin rods of silver, zinc or lead were used for drawing. (W2D-016-5)
- [b] Avocados *originated* in Mexico, . . . (*The Independent* 7/16/94)
- [c] Systematic biologists may *die out* faster than the species they are trying to list, label and fit into the evolutionary scheme of things. (*New Scientist* 8 Feb, 1992)
- [d] Shortly after Alexander Graham Bell *invented* the telephone people started to wonder if it was possible to send pictures over wires. (W2B-034-10)
- [e] *Invented* in the late 19th century, the bra proved to be ahead of its time and women clung to their corset until the first world war. (*The Times* March 9, 92)
- [f] The potato was probably *first cultivated* as a crop in the Peruvian and Bolivian Andes. ('Vegetables and Vegetable Farming', *Encyclopedia Britannica* 15th edn.)
- [g] The zebra is *the typical wild horse of Africa*. (*Woburn Wild Animal Kingdom*, Norwich: Jarrold & Sons 1986)
- [h] The shark, that mythic terror of the deep, has been *top predator of the seas for nearly 400 million years*. (*International Herald Tribune* Dec. 10, 92)
- [i] The wildebeest . . . *grazes in large herds and reaches a maximum weight of 600 pounds*. (*Woburn Wild Animal Kingdom*, Norwich: Jarrold & Sons 1986)
- [j] The harbour porpoise is *the smallest and by far the most common of the whales and dolphins* living in the waters around Britain. (*The Independent* 26/12/95)

β.I.B.ac discoursally referring - factual - particularisedly existential - sub-class -
class generic

The addressee may draw a sub-class class generic implication if any of the clues that I have specified in 6.2.2 and 6.3.2 is available to the interpretation of a singular indefinite common noun phrase, which cannot have a class generic interpretation.

- [a] Sue has *invented* a new hair-do which looks very nice when it works. (SEU-W-07-01-217 - social letter)
- [b] Lake Bala is the largest natural lake in Wales, nearly four miles long, and noted for a rare fish, *the gwyniad (white-fleshed)*, *a non-migratory species of salmon*, not found elsewhere. (SEU- W-11-03-13 - non-fiction)
- [c] The British centre monitoring the world's wildlife said yesterday that the animals were 'critically *endangered*' by pollution, poaching and the booming human population. Among the 20 are a small termite-eating marsupial called the numbat, the Mediterranean monk seal and a fish from a tributary of the Danube.
(*The Times* Jan. 3, 96)

The addressee may draw a sub-class class generic implication if any of the clues that I have specified in 6.2.2 and 6.3.2 is available to the interpretation of a plural indefinite description which can be quantified, e.g. 'birds' in [g] is the same as 'some (sub-classes of) birds'.

- [g] More relevant to the wider public is the enormous decline in birds that were once *commonplace*. Tree sparrows . . . have declined by 85 per cent, corn buntings by 76 per cent, partridge by 73 per cent and skylarks by more than half, all in the past 20 years. (*The Independent*, Sept. 5, 94)
- [h] Many birds have *increased in abundance* over the past few decades. (*The Independent*, Sept. 5, 94)

Examples of plural definites:

- [i] . . . the world's leading conservation charity said that in Cambodia, Laos and Vietnam one tiger was being killed by humans each week. At that rate the Indochinese subspecies will become *extinct* in those three countries around the turn of the century. (*The Independent* 14/9/95)
- [j] The forest monkeys of the Americas are *varied* and extraordinary. (W2B-021-25)
- [k] Developed during the second half of the 16th century from such earlier European instruments as the rebec, gigue, lyra, kit, and vielle, the violins gradually displaced the members of the earlier viol family. ('Violin', *Encyclopedia Americana* 1990 edn.)
- [l] At last there is a real understanding of race, and the ancient and disreputable idea that the peoples of the world *are divided into biologically distinct units* has gone for ever. (*The language of the genes* by S. Jones, HarperCollins, 1993, p. xi)

The addressee may draw a sub-class class generic implication if any of the clues that I have specified in 6.2.2 and 6.3.2 is available to the interpretation of a singular definite description which is restrictively modified⁴⁷. The form of 'this (that) N' is a good indication for such an interpretation⁴⁸.

- [m] At £13.99, the Wonderbra offers the best plunge and uplift value on the market. Sales of this underwired and padded cleavage bra, designed in 1968 and unchanged since, *have increased four-fold in the past six months*. (*The Times*, March 9, 92)
- [n] Several birds, the world's largest butterfly⁴⁹ and a giant earwig are also at risk of joining the Round Island boa snake, which disappeared from its Indian Ocean island in 1975; . . . (*The Times* Jan. 3, 96)

β.I.B.d discoursally referring - factual - particularisedly existential - value-shifting

- [a] The sex police patrolled the lift doors around the clock. A green-uniformed officer of he Public Security Bureau would stand in the lobby of the Jingao Hotel to ensure that no Chinese ladies were insulted by western men. (opening sentence of a feature in *The Sunday Times* 26/3/96)
- [b] I pointed out to my partner that nobody in my family had ever divorced and that I had a good track record in honouring my obligations, caring for *sick moggies* until the end. Would I treat a husband any worse than I treat my cat? (*The Guardian* 12/16/25)
- [c] The King of Prussia was an old man and now is a young man. (taken as a true description of a real state of affairs in history)

(cf. 4.1.8 for discussion).

β.I.B.e discoursally referring - factual - particularisedly existential - perceptible

There may be a perceptible counterpart of the referent (cf. 4.1.6), as illustrated by an example taken from a British Library Gallery talk. When the lecturer was showing the audience a Persian painting, she said of a man:

- [a] he also has a burning halo um one wouldn't automatically know from this picture that it was made in India (S2A-059-60)

Obviously, the audience could match their mental representation of the referent with a halo depicted in the picture in front of them though the presence of the perceptible counterpart of the referent is not a prerequisite for the interpretation of an NP⁵⁰.

- [b] (A was going to try the game of throwing hoops in a fun fair and there is a panda among the prizes to be won. B said to A)

Try and get the panda.

β.I.B.f discursively referring - factual - particularisedly existential - referential

If we know that the communicator expects the addressee to be aware of a historical link between an indefinite expression and a particular referent⁵¹, we can draw a referential implication about the referent. When the expression is indefinite, the communicator is using it for some special effects, as shown by my analysis of [3] of 4.1.4:

- [a] Some prints I put out have been purchased by a very beautiful young lady.
- [b] The Prime Minister yesterday challenged Peter Hain to produce evidence of alleged 'inside dealing' in Lloyd's ... (the opening sentence of a news bulletin, *The Guardian* 7/15/94)
- [c] The People's Republic of China has been pursuing the same end for years not without some valued help from this house (S2B-048-47)
- [d] The murderer of Smith is insane (if we take it as being uttered in a real situation and referentially used to refer to a certain Jones)

The above analyses show how an English noun phrase is interpreted via decoding and inference. The system has incorporated the various uses of NPs discussed in the literature and given them an explanatory pragmatic account born naturally out of the interaction between a general pragmatic principle, decoding and inferential processes. Different types of interpretation are pinned down by specific features and related to their respective implications.

4.3 summary

In Chapter IV I have examined all the uses of English noun phrases noted in the literature in the new light of a theory of utterance understanding. Based on the discussion, I have formulated a system of how a representation of the representational referent of noun phrases is established. The system makes use of four sets of features to capture the complexity of a referent and caters for all the uses previously discussed.

Chapter V

Traditional Views on Generics

The main purpose of this thesis is to give an adequate account of how generics work. As I have mentioned earlier, a noun phrase with generic interpretation can assume all types of forms. That's why generics can never be adequately explained without appealing to pragmatic inference. In Chapter II I have shown the importance of a pragmatic principle, the (second) principle of relevance, in deriving utterance meaning from sentence meaning and explained how inference works in this process. In Chapter III I have shown how a noun phrase can be processed according to its form and its relative position in discourse: whether it is an introductory one or a co-referential one and if a co-referential one how it is related to its antecedent. Since the generic interpretation of a noun phrase is one of its various uses, it is best observed against the background of the whole spectrum of these uses. I have, in Chapter IV, discussed different interpretations of a noun phrase in different contexts and specified the clues leading to each interpretation. Before zooming in on generics proper, I will present a review of different opinions on this issue in order to show the contributions made by many other scholars to this field and their limitations.

5.1 early accounts

5.1.1 Robert Lowth

Early English grammarians adopted the framework of Latin grammar. Since there are no similar categories in Latin to the English article, the treatment of articles in the literature was somewhat neglected before 1800 (cf. Michael 1970, Secs. 11). In *A Short Introduction to English Grammar* (1762), Robert Lowth made one of the earliest comments on English generics:

A substantive without any article to limit it is taken in its widest sense: thus *man* means all mankind; as

‘The proper study of mankind is man’ POPE

where *mankind* and *man* may change places without making any alteration in the sense. (quoted in Michael 1970:361)

The above quote may have represented the early English grammarians’ view on this topic. At that time, a singular noun with zero article like ‘man’ was regarded as a typical example of generic reference¹ In fact, the generic use of such a syntactic form is very limited² According to Lowth, it was the lack of any article that was the reason to assume the expression *man* ‘is taken its widest sense’³ and then a generic interpretation was automatically arrived at. The mention of the general use of ‘man’ in Lowth’s grammar book marked the beginning of treating genericness as a syntactic phenomenon in English studies.

5.1.2 Henry Sweet

More than a century later, Sweet (1891-98) used the example ‘Man is mortal’ to illustrate the ‘generalizing’ use of the expression *man* and also the example ‘this man’ to illustrate its ‘specializing’ use. Sweet also touched on the use of the ‘zero plural’⁴ construction and he contrasted zero plurals with the ‘*the* + plural’ construction:

Without the article such a plural as ‘birds’ expresses the idea of ‘birds in general’, while ‘the birds’ implies ‘the birds around us or near us,’ as in ‘the birds are singing’ / ‘the stars are bright to-night’ compared with ‘birds do not sing in the winter’ / ‘stars shine by night’. (ibid. Part II. p. 57)

Sweet expanded earlier grammarians' observation of the generic use of nouns like *man* to zero plurals in general⁵ and noticed the contrast between different uses of determiners (i.e. zero vs. definite determiners *this* and *the*). Though Sweet noticed that the use of a definite determiner in a noun phrase made the difference between expressing something in general or something 'around us or near us', systematic studies of the English generics did not emerge until the early years of the twentieth century.

5.2 Hendrik Poutsma's Account

5.2.1 the inclusion of *the X* forms in 'the generalizing use'

Poutsma (1914-29) added *the X* forms of noun phrases to Sweet's category of their 'generalizing use'. He took it for granted that in [1] the denoting power of the definite article in 'the steam-gauge' would tell us 'that the conception we have formed is generalized' (cf. *ibid.*, Part II, Secs. I, pp. 518-9):

[1] The steam-gauge is an instrument for indicating the pressure of steam in a boiler.

5.2.2 zero noncount noun construction

Poutsma also first recorded examples of the zero noncount NP, both concrete and abstract, 'when spoken of in a generalizing way'⁶:

[2] Besides its commonest use as the working substance in engines, steam is also largely employed for heating.

[3] Fame and reward are powerful incentives, but they bear no comparison to affection. (cf. *ibid.*, 597)

5.2.3 limited generalization

Poutsma drew our attention to the phenomenon that ‘A specialized conception may in its turn be generalized’ (ibid., p. 519) and pointed out that ‘Generalization is not incompatible with some limitation as to time, place or other circumstances, ...’ (ibid., p. 388), as in

[4] The African elephant is taller than the Indian [one].

This view was echoed in Quirk et al. (1972:153), where a term ‘limited generic reference’ was introduced but was not discussed in Quirk et al. (1985).

5.2.4 the Xs form

Sweet (1891-98:57) noted only the use of *the Xs* forms in its specializing use, as in cases like ‘the stars are bright to-night’ while Poutsma paid attention to another group of data with the same form but a different interpretation:

Before plural nouns when denoting a class of persons, animals or things in a generalizing way, the definite article is mostly used. (ibid., p. 594)

Since Poutsma’s examples used to support this claim are not homogeneous, a closer look will reveal the reason why this view was refuted by most later grammarians⁷.

The first sub-group is associated with a formal, literary style:

[5] And Jesus said unto them, The foxes have holes, and the birds of the air have nests; ... (Matthews, King James’ version of Bible)

[6] While man is very little higher than the beasts, he is also very little lower than the angels.

On the other hand, the contemporary version of the particular use of the phrase ‘the ladies’ in Poutsma’s second sub-group would be ‘women’, in the form of zero plural:

[7] The fact is, that the cigar is a rival to the ladies.

[8] If only the ladies could all have their own way in this world, and never be thwarted, then were the Millennium near at hand.

His third sub-group consists of expressions like ‘the conservatives’, ‘the nationalists’, ‘the extremists’ and ‘the Moderates’. All of these have an adjective origin and a closer relation to the usage of ‘**the** + nationality name / nominal adjective head’ construction, which is commonly used to refer to a group of people (cf. 5.4). On the whole, Poutsma’s data is not sufficient to justify his claim.

5.2.5 summary

Poutsma first recorded the use of *the N* NPs and zero noncount nouns as generic expressions. He also expanded the notion of ‘generalization’ by allowing a ‘limited’ one. Poutsma’s idea of including plural definites as generic expressions is out of favour now because they are regarded as exceptions.

5.3 Otto Jespersen’s Account

Jespersen’s *A Modern English Grammar on Historical Principles* (1909-49) is the first major English grammar which used the term ‘generic’ to describe the phenomenon

discussed in this thesis and it contains a taxonomy of the various syntactic features Jespersen thought were essential in generics.

5.3.1 a taxonomy of generics

Jespersen categorized a group of linguistic data under the name ‘generic’ (or ‘generalising’ sometimes) and described the common property of this group as ‘An assertion about a whole species or class - equally applicable to each member of the class’⁸ (ibid., Part II, Secs. 5.4).

Jespersen’s taxonomy of English generics goes like this:

I. zero article + singular count noun:

[1] Man is mortal.

II. *a/an* + singular count noun:

[2] A cat is not as vigilant as a dog.

III. *the* + singular count noun:

[3] The dog is vigilant.

IV. zero article + plural count noun:

[4] Dogs are vigilant.

V. *the* + plural⁹:

[5] The English are fond of outdoor sports.

(ibid. Appendix 5.4)

This taxonomy has had a far-reaching influence on many succeeding English grammar books, e.g. Quirk et al. (1985:265) and Huddleston (1988:91). In this thesis I intend to modify and greatly enrich this taxonomy on the basis of an in-depth study of the English generics.

5.3.2 NPs with zero article (i): singular nouns

This construction is illustrated by the example in Jespersen's type I. The inclusion is a legacy from the early literature and because of its insignificance the construction has been given only a footnote treatment in Quirk et al. 1985 (cf. 5.1.1 and Note 1).

Differently from Poutsma's view (cf. 5.2), Jespersen considered the 'zero + noncount noun' construction only as a subset of his type I:

'Mass-words - material or immaterial - are similarly used in the sg [= singular] without any article' (ibid., Part II. 1st Vol. Secs. 5.412)

Jespersen further distinguished two sub-types (cf. Part VII. Secs. 12.64-65):

[a]

Corresponding to Christophersen's (1939) term 'parti-generic sense', 'an indefinite (undefined) quantity (part) of the "thing-meant"' is being denoted, as in

[1a] Solitude had unmanned me already. (quoted from E. Butler's *Erewhon*)

[1b] Sailing is a thing that wants knowledge and practice too. (J. Jerome's *Three Men in a Boat*)

[b]

Corresponding to Christophersen's (1939) term 'toto-generic sense', 'the whole genus' is being denoted. 'Statements with mass-words in this sense have a general character, hence they are particularly frequent in scientific, proverbial, and other abstract styles' (ibid., p. 439).

[2a] Charcoal is a black, brittle, light inodorous substance.

[2b] If thou doest not well, sinne lieth at the doore. (quoted from *Gen. The Authorized Version of the Bible*)

Jespersen's examples do not illustrate his points properly. Firstly, the basis for the division is blurred by his examples. [1b], Jespersen's example for 'parti-generic', can be a statement made of all the instantiations of sailing and thus be 'toto-generic' while the 'sinne' in [2b] may be 'an indefinite (undefined) quantity (part) of the "thing-meant"' and therefore be 'parti-generic'.

Secondly, the word 'solitude' in [1a] was used to refer to only part of the whole set of its instantiations, and is therefore as nongeneric as the word 'water' used in

[3] During the last flood, water came into our house.

(See Chapter VII for my discussion on the generic-nongeneric gradient.)

5.3.3 NPs with zero article (ii): zero plurals

Following Sweet (1891-98) (cf. 5.1.2), Jespersen called his type IV, the use of zero plural in [4a] and [4b], ‘generalizing plurals’ (cf. *ibid.*, Part II, Secs. 5.441):

[4a] Owls cannot see well in the daytime.

[4b] What was it in women that made men love them? (quoted from A. Barrie’s ‘Tommy and Grizel’)

Jespersen claimed that one should not take the zero plural construction ‘to mean “denoting the genus” in a strict sense such as the sg [singular - Ni] with the def. article’ (*ibid.*, Part VII, p. 442)¹⁰. I will show in Chapter VI that it is not the syntactic nature of an NP, such as a zero plural or a single definite, that determines whether the NP is used to denote the genus as a whole or not.

5.3.4 a heterogeneous group of ‘quasi-generics’

Jespersen considered another group of examples as being used in a ‘general (quasi-generic)’ sense (cf. *ibid.* Part VII. p. 494). The noun phrases concerned are in the forms of ‘zero plural’ and ‘*the* plural’:

[5a] But the lesson which men receive as individuals they do not learn as nations. (from J. Ruskin’s ‘On Painting’)

[5b] A man should have one woman to prevent him from thinking too much about women in general. (from B. Shaw’s ‘Too True to be Good’)

[5c] The women will wear Shaw to a frazzle. (from Caldwell G 12)

[5d] I’m hell with the women. (from *The Thin Man* by D. Hammett)

Jespersen did not define the term ‘general (quasi-generic)’, nor clarify the difference between ‘general’ and ‘generic’ and this group of data is not homogeneous. On the one hand, [5a] is not different from [2a], which was regarded by Jespersen as typically generic, in that a generalisation has been made of the subject of either of the statements. [2a] says that instances of charcoal will have the property of being ‘black, brittle, light and inodorous’ and [5a] says that ‘men’ in general don’t learn as nations the lesson which they receive as individuals. On the other hand, in [5b], [5c] and [5d], the entity which has been generalized about is not the referent of the subject of the statement. That is to say, a generalization has been made, not of the referents of these underlined expressions, but of the relation between two entities. In [5b], it is between ‘any man’ and ‘women’; in [5c], between ‘Shaw’ and ‘women’; and in [5d], between ‘the presumed writer’ and ‘women’¹¹. It is clear that if Jespersen wanted to call ‘charcoal’ in [2a] generic, then ‘men’ in [5a] belongs to the same category. As for the question of whether we should exclude examples like [5b], [5c] and [5d] from the category of generics, see my discussion on the gradient of generics (cf. 6.1.2.4 and Chapter VII).

5.3.5 the indefinite article

In relation to the English generics, Jespersen recorded two types of meaning that an indefinite NP can have (cf. *ibid.*, Part VII, Secs. 12.54-56):

- [a] ‘[T]he sb vaguely refers to a member of a class especially indicating the typical qualities of the person or thing in question ...’ (*ibid.*, p. 423)
- [b] The third type is ‘often called the generic use of the indefinite article, ...’ (*ibid.*, p.424)

As can be expected, he felt that ‘it seems impossible to draw a fixed line between [a] and [b]’ (*ibid.*, Part VII. p. 424).

Jespersen gave examples [6a] and [6b] to illustrate Type [a]:

[6a] The very thought of going in a boat made him sick.

[6b] You think that there ought to be no such differences in habitation: that nobody should live in a palace, and nobody under a heap of turf? (from J. Ruskin's *Readings in Fors Clavigera*)

With Type [b], Jespersen departed from his contemporaries' practice of calling it 'generic use' of the indefinite article. Instead, he called it 'all-representative use' in that such an indefinite NP 'refers to all members (or any member) of the class or species it denotes, but only as a representative of the members. It does not denote the class or species itself' (ibid., p. 424). His examples of this type include:

[7a] A dog growls when it's angry.

[7b] I hate a fool.

Of all the statements made in [6] and [7], only in [7a] is a generalization made about the referent of the underlined expression, which is the subject. A generalization is made about the relation, in [6a], between 'boats' and 'him', in [6b], between 'people (the referent of 'nobody')' and 'palaces' and 'heaps of turf', and in [7b], between 'the presumed speaker' and 'fools'. By this criterion, [7a] belongs to one group and [6a], [6b] and [7b] belong to another. Then why is there an intuition that [6a] and [6b] in some sense group together and so do [7a] and [7b]? The intuition is based on a different criterion: whether it is acceptable to modify the underlined words with 'all':

[8a] *The very thought of going in all boats made him sick.

[8b] *You think that there ought to be no such differences in habitation: that nobody should live in all palaces, and nobody under all heaps of turf?

[9a] All dogs growl when they're angry.

[9b] I hate all fools.

My acceptability test is based on the fact that it is far more difficult for one to envisage the situations described in [8a] and [8b] than those described in [9a] and [9b], given that one's imagination is constrained by one's knowledge of the world. The acceptability of these statements has something to do with our mental scripts about these two kinds of situations. As we know, at one given point of time, one can go into only one particular boat, live in one particular palace, and be under one particular 'heap of turf'. On the other hand, one can easily imagine that every vocal dog growls when it's angry and one can hate every fool in the world at the same time. That's why it seems to Jespersen and to our intuition that in [7a] and [7b] an indefinite NP 'refers to all members (or any member) of the class or species it denotes' while in [6a] and [6b] an indefinite NP 'vaguely refers to a member of a class'. Syntactically, all the underlined expressions in [6] and [7] are NPs in the form of *a N*. This form alone is compatible with both the two kinds of interpretation Jespersen mentioned. It is the pragmatic development of these expressions during utterance comprehension which gives rise to their difference from their linguistically encoded meaning (cf. 6.1.1).

5.3.6 the definite article

Jespersen claimed that 'The commonest way of expressing a generic sense is by means of ... the sg with the definite article'¹², and this is perhaps in a strict sense the only way' (ibid., Part VII. Secs. 14.31). He claimed that an expression like 'the ballad', when used generically, 'stands as a (typical) representative of the whole class' (ibid., Part II. p. 133). Jespersen gave the earliest psychological explanation of generics and the generic use of *the*:

... it seems sufficient to state that in the speaker's or writer's mind there is a more less [sic] vague image of one member of the species in question and this is somehow taken as representing the whole species. As the species is presupposed

to be known to the speaker or writer, we must have the definite article when using the singular to denote it. (ibid., Part VII. p. 492)

His examples include the following two:

[10a] The policeman is a permanent public defiance of Nature. (C. Dickinson's *A Modern Symposium*)

[10b] Their business is to hunt the stag and the fox.

According to the criteria for generics set by Jespersen with the noncount noun (example [2a] above), [10a] is qualified because a generalisation has been made about the subject of the statement. However, in [10b] a generalization has been made about the relation between 'their business' and 'stags' and 'foxes'. So in terms of the propositions expressed in the statement (cf. Chapter II and VI), [10b] is much closer to [5d] or [6a], both of which Jespersen was reluctant to call 'generic', than it is to [10a]. Jespersen's approach, which focuses on form rather than on contents cannot predict the correct grouping of these examples, since generic reference is more an issue of interpretation than of pure syntax.

5.3.7 two theoretical issues

Jespersen's account of generics in general, and of the NPs used in generic expressions in particular, concerns two major issues: (i) what does a generic expression represent? (ii) how do we explain the function of the definite article in a generic expression?

For Jespersen, the difference between the typical *the N* form generic and the *a N* form generic is that the former not only 'stands as a (typical) representative of the whole class' but also represents the whole class, while the latter 'does not denote the class or species itself' though it stands 'as a representative of the members'. In more recent

literature, both types are accepted as generics and at the same time the limitation of *a N* forms has been noted (e.g. Greenbaum & Quirk 1990:85).

In answering the second question, Jespersen claimed that the use of the definite article indicates that the speaker's knowledge of the species is presupposed, implying that forms like *a N* and zero plurals do not have the same presupposition. In Chapter III I show that the hearer may follow different routes in reference assignment with different NP forms. However, the nature of the referent, the result of reference assignment, is not fundamentally affected by the form used to represent it. For example, in the following extract, we can see that both the forms 'the subject' and 'subjects' are used to refer to the same class of entities:

[11] One of the indications that the subject is a clearly identifiable constituent of a sentence is, as we have seen, a specific question . . .

Subjects, objects, and adverbials will be referred to as elements of sentence structure. (The opening of Sec. 2.3, p. 13, *A Student's Grammar of the English Language*, Greenbaum & Quirk 1990)

Here it is mainly for stylistic variation that the authors have changed from a *the N* form to a zero plural. The two forms are interchangeable on both occasions, provided that other corresponding alterations are made in the text. Jespersen's account of the use of the definite article in generics, being a simple expansion of its use in referring to definite sets of individuals, cannot explain this phenomenon.

5.3.8 the Ns form

It was Jespersen who first challenged the idea that the 'the + plural' construction has a generic use:

A substantive in the pl with the definite article cannot any longer be used in a generic sense, though it is found in Bacon, who says the philosophers and the physicians, where now we should say philosophers and physicians. (ibid. Part II, Secs. 5.45)

This claim has been accepted by many later grammarians (cf. Huddleston 1984:255; Quirk et al. 1985:283; but see Christophersen p. 146).

5.3.9 summary

In the history of English reference grammars, Jespersen first introduced the term 'generic' to categorize a particular group of data. His taxonomy, though leaving much room for improvement, has influenced generations of grammarians. Jespersen's syntactic approach to the problem lacks explanatory power.

5.4 Paul Christophersen's Account

Christophersen (1939) attempted a unified account of the use of the articles and, similar to Jespersen's view, he regarded their generic uses as a simple extension of their nongeneric uses.

5.4.1 a psychological explanation of *the N* generics

Christophersen posited that the use of *the* centred on the idea of 'uniqueness'. First, the two uses of the definite article, 'the + uniques'¹³ and 'the + count nouns other than uniques' could be united under the same notion that 'the centre of attention must necessarily be so narrow as to comprise only one individual'. Second, both the individual use of *the* and the generic use of *the* refer to something unique. When 'the

cat' refers to one's own cat, it is a unique individual; when 'the cat' refers to the cat species, 'the class-name, too, becomes a unique' (ibid., p. 31).

Christophersen suggested a Russellean psychological explanation for the generic use of *the*:

Probably, there is a vague image in the mind accompanied by a knowledge that no one dog is represented (See B. Russell, *The Analysis of Mind* Ch. XI). The species is thought of as a unit appearing in the shape of one of its members. This is not a representative use in the sense meant by Berkeley and Hume; for a moment it is almost as if there is no longer a class of individuals but only one dog, which is in itself the whole species. (Christophersen 1939:31)

In fact, this is an attempt to describe the conceptualization of a class of entities in the world rather than the use of the form *the N* in language. The linguistic forms used and the proposition expressed in a sentence are two different things and different forms can be used for the same referent. So Christophersen's attempt to tie one particular form, *the N*, to one particular way of referring, i.e. generic reference, is bound to fail.

5.4.2 differences between *the N* form and *a N* forms

In his unified framework for the articles, Christophersen saw a bigger difference between the generic use of *the* and the generic use of *a* than that between the individual use and the generic use of *a*. He recognized the generic use of *a* as a representative use because of the nature of the image it would evoke in the mind. In contrast to the image conjured by a generic expression with *the*, this image is 'a single individual, accompanied by a certain knowledge that what is said about this individual would have been equally true if we had chosen another member of the same class instead' (p. 33).

Christophersen used [1] to illustrate the difference between what he called an ‘aggregating generic’ *the*-form and a ‘singularizing’ *a*-form:

[1] The motor-car has become popular during the last quarter of a century.

He claimed that the idea is that ‘the motor-car’ in this context has to be understood en bloc and an *a*-form cannot convey such a message. What Christophersen claimed in this case is true, but such a case is not the only occasion where the *the*-form is used. *The*-forms are also used in numerous cases where an *a*-form can be a substitute. On the other hand, this quality of ‘aggregating generic’ is not possessed only by the *the*-form; zero plurals, like ‘motor cars’, can also appear in the same position. Furthermore, the *a*-form can do more than just ‘singularizing’, as in cases of its sub-class interpretation when ‘a rare fish’ is used to mean ‘a sub-class of fish which are rare’ (cf. 6.3). Again, it is not a wise approach to try to identify a particular form with a particular interpretation.

Christophersen observed that ‘When giving admonitions and advice, one is much more inclined to use the *a*-form [his example is quoted here as [2]]:

[2] A boy who tells a lie should be strictly punished.’ (p. 130)

It may be a stylistic preference at a certain historic period because there are more and more bare plurals are used on similar occasions, as shown by my examples in 6.1.2.2. However, such syntactic differences will always be overruled by pragmatic considerations¹⁴.

Christophersen regarded the underlined expressions in example [3] as a type of generic and commented that *a* is used more frequently in comparisons than *the*¹⁵.

[3] Something comes at me like a Jack-in-the-box and up I goes like a sky-rocket.
(L. Carroll’s ‘*Alice’s Adventures in Wonderland*’)

Here I can report that in contemporary British English the indefinite article is almost exclusively used for introducing the imagery element in a simile. No definite article has been used in the similes in the one-million-word ICE-GB, of which 10 cases are in the form of *as a N*, 1 case in the form of *as N*, 78 cases in the form of *like a N*, and 23 cases in the form of *like N*.

Christophersen first described some stylistic variation attached to the generic use of *the* and *a*:

‘The *a*-form is the more colloquial, the *the*-form the more formal. The latter expresses a philosophical, abstract attitude towards things; the former is direct and matter-of-fact.’ (ibid., 130)

This observation of *the N* form is reflected in Quirk et al. (1985:282) and is also confirmed in a corpus-based English grammar, *COBUILD English Grammar* (1990)¹⁶.

5.4.3 Summary

Christophersen aimed at a unified framework of the articles, in which he accentuated the idiosyncrasy of each article in generic use, though he didn’t show much interest in the zero article. His psychological explanation of the generic use of *the* confused a linguistic form with what it is used to refer to. His description of frequency and stylistic variation of the use of *the* and *a* extended the territory in the study of generics.

5.5 Neil Smith's Account

5.5.1 introducing the pragmatic parameter

Smith (1975) was among the first who pointed out that whether or not an NP is interpreted as generic depends on:

- (i) the English article system;
- (ii) other parameters relating to each particular article, either syntactic or semantic or pragmatic. (cf. p. 28)

Indeed, how successful an account of English generics is depends on how one defines and elaborates these syntactic, semantic and, especially, pragmatic parameters.

5.5.2 Smith's generic dichotomy

In his two 'generic paradigms', Smith illustrated two types of generic at the subject-position - 'class-qua-class' generic and 'individuated' generic (cf. p. 28-9), in comparison with cases involving explicit quantifiers like 'any' and 'all':

[1a] the squid lives on seaweed

[1b] squids live on seaweed

[1c] a squid lives on seaweed

[1d] any squid lives on seaweed

[1e] all squids lives on seaweed

[2a] the dodo is extinct

[2b] dodos are extinct

[2c] *a dodo is extinct

- [2d] *any dodo is extinct
 [2e] all dodos are extinct

Smith claimed

In [1] the expression ‘lives on seaweed’ is predicated of each arbitrary member of the class of squids, whereas in [2] the expression ‘is extinct’ is predicated of the class qua class. (p. 29)¹⁷

Two points Smith made from the above paradigms are worth discussing here. First, Smith wanted to show that [*a* N] and [*any* N] NPs cannot be used with the ‘class-qua-class’ generic. Admittedly, it is more difficult to imagine that an [*a* N] NP subject and a ‘class-qua-class’ predicate form a statement. However, an [*a* N] NP can receive a sub-class generic interpretation (cf. 6.3). Such an interpretation is exactly the same type of interpretation of the expression ‘all dodos’ specified by Smith in [2e]¹⁸. It is inconsistent to accept [2e] because it can be interpreted as sub-class generic while rejecting [2c], which can also be interpreted in the same way in an appropriate context.

Second, Smith claimed that in the ‘individuated’ generic paradigm, [1a-c] are different from [1d-e] in that ‘a single exception to [1a-c] would not falsify them, whereas a single exception to [1d-e] would’ (p. 29; cf. also Katz 1972:178; Lawler 1973a:329) because of the difference between the determiners used in these statements. If we are talking about the propositions expressed in [1a] - [1e] as opposed to the linguistic form used to express these propositions¹⁹, then this claim is too strong for contingent individuated generic propositions, i.e. member generics (cf. 6.1). Though Smith realised that ‘a “generic quantifier” must be distinguished from the universal quantifier on both syntactic and semantic grounds’ (p. 30), he failed to specify the difference between the two, which can only be shown in a pragmatic account of generics taking account of world knowledge as the basis of inference (cf. 6.1.1).

5.5.3 some constraints on generics

Smith brought to our attention a sub-class of verbs such as ‘disperse’ and symmetric predicates of the type ‘kiss’, either of which ‘disallows *the* as well as *a* whether the NP concerned is generic or specific’ because they both ‘require a plural or group subject’ (p. 36). These types of predicate are to be differentiated from ‘class predicates’ such as ‘increasing in numbers’ and ‘dying out’. Class predicates can take [*a* N] NPs with a sub-class interpretation (cf. 6.3) as well as [*the* N] NPs and zero plurals.

Smith pointed out certain requirements on a verb and its object regarding generic meaning. For example, verbs of the ‘decimate’ type (p. 33) and the ‘develop’ type (p. 46) take only [*the* N] NP as object:

[3a] pollutants are decimating the squid g [= generic]

[3b] *pollutants are decimating squids

[3c] *pollutants are decimating a squid²⁰

[4a] Peacock developed the novel g

[4b] *Peacock developed novels

Smith also discussed a series of cases concerning the generic interpretation of NPs with different articles at the object position. He found an inconsistency in interpreting the pair [5] and [6] (‘g’ means a generic reading is allowed and ‘-g’ means a generic interpretation is not possible):

[5a] Euclid described the parabola g

[5b] Euclid described a parabola -g

[5c] Euclid described parabolas -g²¹

- [6a] Euclid defined the parabola as (being) the intersection of a cone and a plane parallel to its side g
- [6b] Euclid defined a parabola as ... g

I account for the constraints on reference assignment under such circumstances in 6.1.2.4).

5.5.4 summary

Smith's work has summarised studies of generics mainly done in the framework of transformational-generative grammar, and convincingly proved that '... no standard-theory treatment of generics can be adequate' (p.44). Thus his work led others to seek new possibilities in generic studies.

5.6 Noel Burton-Roberts' Account

5.6.1 the indefinite article

Burton-Roberts (1976: 1977) [hereafter B-R (1976; 1977)] proposed that 'generic sentences' were 'sentences having an NP determined by the generic indefinite article as subject'(1977:155). For example, '... A physicist is a scientist is a generic sentence, since a generic occurs as a subject' (1976:435). A 'generic sentence' has an underlying structure of 'to be NP is to VP (where VP can contain a copula)' (1976:435), as shown in [1].

- [1a] A whale is a mammal
- [1b] To be a whale is to be a mammal (cf. 1976:430)

There is a general problem for attempts to set up a ‘generic indefinite article’ as a different semantic entity from the rest of its uses. Distinguishing it from the other uses of the indefinite article involves the pragmatic procedures of disambiguation and reference assignment and giving it a separate name doesn’t help relieve the pragmatic work. That is, the pragmatic procedures needed to decide when an indefinite article is a generic one or when an [*a* N] NP receives a generic interpretation are the same. B-R’s attempt to equate [1a] with [1b] also confuses two different things: one is the contribution that a sentence makes to the proposition it is used to express, and the other is the proposition itself (cf. 2.1.8.4). Though it is reasonable to say that the proposition expressed in [1a] implies that expressed in [1b] because it is so defined in modern zoology, it will be over-stretched to equate the proposition expressed in ‘A beaver builds dams’, which is an inductive observation and a generic statement, with the one expressed in ‘to be a beaver is to build dams’ because there are certainly biological beavers which don’t build dams.

5.6.2 zero plurals, *the* N forms and *a* N forms

B-R also proposed that *a* N NPs in a ‘generic sentence’ stand for ‘the concept constituted by the attributes represented in whale’, ‘as opposed to an OBJECT’ (1976:429). In other words, B-R implied that *a* N NPs can ONLY be used to make statements like ‘A whale is a mammal’, which state the definitional properties of the subject as a concept. Therefore, such statements are not about real objects in the world and philosophically do not have referential presuppositions. By contrast, B-R argued that, of ‘the three types of sentence which have been variously described as making generic statements’ (1977:187), ‘Ns [=nouns] determined by Gen *the* had the meaning *the class* . . .’ (1977:188) and zero plurals ‘do not make generic statements but generalisations, inductive generalisations over a specific range of non-specific but objective phenomena’ (ibid.). Both zero plural and *the* N types ‘have referential presuppositions’, i.e. they are about real objects in the world.

The following are two counter-examples of Burton-Roberts' above claims. In [2a], the underlined NP is certainly not about a class because the price of one Wonderbra is specified though its form is *the N* instead of being *a N*. On the other hand, in spite of the fact that a zero plural is used as the subject, [2b] cannot be about real entities in the world, nor an inductive generalisation: it is about a concept in the popular myth because the embedded statement 'Nice girls don't get raped' implies that if a girl gets raped then she cannot be nice. The statement is not about attributing some property to some existing nice girls.

[2a] At £13.99, the Wonderbra offers the best plunge and uplift value on the market.
(p.5, Life & Time, The Times, March 9, 92)

[2b] The great myth is that nice girls don't get raped; that a woman asks for it and secretly wants it. It's not just in the heads of rapists, it's in the minds of family, friends and husbands.... ('The reality of rape', Daily Express p.26, Feb. 21, 1991)

5.6.3 Burton-Roberts' 'generic paradigms in English'

Against the background that 'genericity' is often 'explained in terms of lack of specificity' (cf. Quirk et al. 1985:265; Huddleston 1984: 255), B-R (1989a) emphasised his points that 'NPs can be both specific and generic (in one sense of "generic")' and that 'in all senses of the term "genericity", genericity and specificity are independent variables and are quite distinct' (p. 2). While still attributing 'class-generic' to *the N* NPs, B-R now attached both 'class-generic'²² and 'property-generic to *a N* NPs (p. 7). Based on these claims, B-R drew up a 'class-generic paradigm' on three parameters: definiteness, plurality, and specificness. B-R's examples in his paradigm consisted of the following:

- [3] (def = definite; spe = specific; sing = singular; pl = plural; + = positive; - = negative)
- a)
- i *The bear* that Max mentioned was systematically ill-treated and almost wiped out in sixteenth-century England. (+def, +spe, sing)
- ii *The dodo* ate figs and is now extinct²³.
- b) *The (two) lions* that John is gathering statistics on are both on the point of extinction. (+def, +spe, pl)
- c) As part of his course, John wants to study a gorilla that's extinct and a lion that's becoming rare or vice-versa, though he expects *the gorilla* to prove the more interesting. (+def, -spe, sing)
- d) John is thinking of studying at least three whales threatened with extinction. He'll decide which at the meeting next week. Ideally, though, *the whales* should each be most numerous in the same part of the world. (+def, -spe, pl)
- e) Kim was discussing *a whale* that is threatened with extinction. (-def, +spe, sing)
- f) Max is comparing the evolution of a couple of *mammals* that became extinct 2 million years ago owing to the fact each had an uneven number of legs. (-def, +spe, pl)
- g) Ursula clearly needs to find and study *a deer* that abounds in East Africa but is rare in the West or vice versa. (-def, -spe, sing)
- h) Kim needs to find and compare the evolution of *two mammals* that became extinct in the same millennium. (-def, -spe, pl) (cf. B-R 1989a:14)

B-R used an encompassing term 'generic paradigms in English' for the above scheme, but what B-R actually did was only the following:

- (i) to use a class-predicate (e.g. 'extinct' or 'abound') in each example to induce a generic context;
- (ii) to set up the parameter of definiteness along the lines of whether an expression is introduced by a definite article in its *cataphoric* use, as in (a.i) and (b), and in its *anaphoric* use, as in (c) and (d), or by an indefinite article; thus to contrast (a.i), (b), (c), and (d) with (e), (f), (g) and (h);
- (iii) to set up the parameter of specificness on the basis of whether certain verbs which act as irrealis operators²⁴ (cf. Givón 1993:218f) like 'want' or factual verbs like 'mentioned' are used; these verbs contribute to the context in a way that affects the interpretation of their object NPs. Thus we have (a.i), (b), (e), and (f) vs. (c), (d), (g), and (h).

In B-R's paradigm (1989a:13), class-generics overlap with specificness because *a N NP* can receive both a sub-class generic interpretation and a specific interpretation at the same time. The sub-class generic interpretation of *a N NP* is induced by a pragmatic process which I will describe in 4.1.8 and 6.3. The specificness in B-R's examples is created by making the NPs the object or part of the object of some factual verbs²⁵. For instance, in (a.i) the NP 'the bear' is the object of the factual verb 'mentioned', as well as being the subject of the class predicate 'was ... wiped out'. In (b) the NP 'the (two) lions' is part of the object of the factual verb 'gathering'²⁶ and the subject of the class predicate 'are both on the point of extinction'. Something on the similar lines can be said of (e) and (f)²⁷.

B-R meant to prove with his paradigm that generic reference overlaps with specific reference rather than being a kind of non-specificness. In trying to do so, B-R expanded the putative notion of specific reference²⁸. The specific reference illustrated in B-R's paradigm covers only particular *sub-sets* of a class rather than a particular *member* or a set of particular *members* of a class. It is this kind of specificness and sub-class

generics which are overlapping in B-R's paradigm. As a result, though we may acknowledge B-R's proposal of a kind of specificity, the paradigm has little to do with the bulk of the generic data. Furthermore, in B-R's paradigm, the specific and non-specific distinction manifested in noun-headed non-definite NPs²⁹ depends on whether they are, as the object, under the scope of an irrealis operator (cf. Givón 1993:217). Hence, the paradigm has little to do with generics in other positions, e.g. those occurring as the subject.

If we take a closer look at B-R's examples for his paradigm, we find that all the definite articles used (except the one in a.i) indicate textual reference (cf.3.2.5) as opposed to reference outside the text, which is typical in generic reference assignment. In (a.i) and (b), the definite articles in the phrases 'the bear' and 'the (two) lions' are cataphoric. In (c) and (d), there are obvious direct anaphoric references, with 'a gorilla' and 'three whales' as the antecedents of the definite NPs 'the gorilla' and 'the whales' respectively.

In short, though B-R's paradigm may have its own merits³⁰, the practical issues involved in this paradigm have more to do with cataphoric and anaphoric, or definite and specific references than with generic reference, and it doesn't deserve the name of 'generic paradigm in English'.

5.6.4 summary

Burton-Roberts' account tries to correlate certain article forms with certain notions of meaning, such as 'property' or 'analyticity', which is bound to cause confusion because it mistakes a sentence for the proposition that the sentence is used to express in a certain context. His paradigm fails to prove his point that genericness and specificity in general overlap though it clarifies a special type of specificity.

5.7 Gerhard Heyer's account

5.7.1 types of generic reference

Within the framework of formal semantics, Heyer (1985) concentrated on *the N* NPs in subject position interpreted as generics (cf. pp. 33, 37) and regarded the generic use of *the N* NPs as 'description-expressions in which the definite article was used to refer non-individually' (p. 40). Heyer further developed his ideas in Heyer (1987; 1988; 1991). However, my analysis here is mainly based on Heyer (1985) since it established the foundation of his theory on generics [Reference page numbers are all to Heyer 1985 unless stated otherwise].

Heyer addressed two questions: '1. what determines whether a description is to be interpreted as a definite or generic description, and 2. what - if at all - does a generic description refer to?' (p. 37). The following are Heyer's examples (p. 33):

- [1a] The lion is a beast of prey.
- [1b] The Scotsman drinks whisky.
- [1c] The lion is a species,
- [1d] The musk-rat was imported into Europe in 1906.

Heyer introduced a test to distinguish two different types of the generic use of the definite article. In one type, the definite article can be replaced by the expression 'every (typical)' and, in the other, the definite article can be replaced by the expression 'the kind' (cf. p. 41f):

- [2a] The lion is a beast of prey
- [2b] Every lion is a beast of prey
- [2c] *The kind lion is a beast of prey

- [3a] The Scotsman drinks whisky
 [3b] Every typical Scotsman drinks whisky
 [3c] *The kind Scotsman drinks whisky
- [4a] The lion is a species
 [4b] *Every lion is a species
 [4c] The kind lion is a species
- [5a] The musk-rat was imported into Europe in 1906
 [5b] *Every musk-rat was imported into Europe in 1906
 [5c] The kind musk-rat was imported into Europe in 1906

This division is further supported by a substitution test for the indefinite article (cf. p. 42f):

- [6a] The lion is a beast of prey
 [6b] A lion is a beast of prey
- [7a] The Scotsman drinks whisky
 [7b] A Scotsman drinks whisky
- [8a] The lion is a species
 [8b] ?A lion is a species
- [9a] The musk-rat was imported into Europe in 1906
 [9b] ?A musk-rat was imported into Europe in 1906³¹

Taking into consideration their distinctive behaviours as revealed by the two tests, Heyer established his dichotomy of definite generic expressions: ‘personal generic’ (e.g. [1a] and [1b]) and ‘absolute generic’ (e.g. [1c] and [1d]). By ‘personal

generic reference', Heyer meant the reference to 'representatives of a kind' and by 'absolute generic reference', he meant the reference to 'class-qua-class' (p. 35).

Heyer then further divided his examples according to the criterion of whether they are necessary or contingent statements (cf. p. 44):

[1a'] The lion is a beast of prey (necessary personal)

[1b'] The Scotsman drinks whisky (contingent personal)

[1c'] The lion is a species (necessary absolute)

[1d'] The musk-rat was imported into Europe in 1906 (contingent absolute)

In the following sections I will discuss the limitations of this taxonomy and argue that [1a'] is not an example of a necessary personal statement about lions.

5.7.2 some confusions in Heyer's taxonomy

Heyer's aim was to establish 'a unified analysis of generic descriptions' (1988:186). In order to do this, he made a basic claim that 'a [definite] description refers individually, if it denotes an object, while it refers generically, if it denotes a generic individual' (p. 60) and generic individuals are 'basically natural and nominal kinds' (1988:186). Heyer thought that if he defined generic reference as the reference to a 'generic individual', then he would be able to lay the foundation for a unified account of definite descriptions.

In fact, Heyer's basic claim adds nothing new to the study of generics except for a different name, 'generic individual', for the referents of generic expressions.

According to Heyer, a generic individual can have two types of property depending on the type of predicate it is related to (cf. *ibid.*). The first type of property consists of those 'which are kind-level properties like 'is a species', or event predicates

like ‘was imported into Europe in 1906’, etc.’ (cf. p. 61). Heyer called this type ‘absolute’:

a context for generic descriptions is *absolute*, if it only allows reference to the generic individual, without also referring to its representatives . . . (p. 60)

The second type of property involves those which are ‘distributional properties’ like ‘being a beast of prey’ and ‘drinking whisky’ (cf. p. 61). Heyer called the second type ‘personal’:

a context for generic description is *personal*, if it only allows reference to individuals as representatives of a generic individual (p. 69).

Heyer further divided distributional properties into ‘either essential properties, necessarily applying to all representatives, or characteristic properties, necessarily applying just to all typical representatives of a natural kind’ (p. 61).

In reality, the two types may merge. Consider [2a] and [2b]:

- [2a] Resembling an ordinary bear, *the polar bear* is a rare species. (‘Wild Life’, a *Reader’s Digest* publication, 1992)
- [2b] Truly an oceanic species, favouring temperate seas, *the great white shark* spends much of its time leading a solitary offshore existence. (‘Wild Life’, a *Reader’s Digest* publication, 1992)

It will be awkward to apply Heyer’s definitions to such examples because the expressions ‘the polar bear’ in [2a] and ‘the great white shark’ in [2b] involve a mixture of both ‘absolute’ and ‘personal’ contexts. In a framework in which sentences are taken as having truth values, expressions with such a ‘double identity’ will prove to be problematic. But this is not a problem for a relevance-based account. In such an

account, a linguistic expression acts only as a clue leading to a concept in the hearer's belief system (cf. 2.2.3 and 2.2.4). So two distinctive conceptual images will be built on the basis of the same expression 'the polar bear' in [10a]. One is for the 'individual polar bear', which can resemble an ordinary bear. The other is for the more abstract concept of the 'bear as a class', which does not resemble anything concrete and which can be called 'a species'.

Similarly, the same expression 'the great white shark' in [10b] can be used twice as input for the development of two separate propositions. One proposition is based on the 'great white shark as a class', which can be said to be 'an oceanic species'. The other is based on the 'individual great white shark', which is not a species and which as an individual may have the distributional properties of 'favouring temperate seas' and of leading 'a solitary offshore existence'.

Heyer's notions of the two subsets of distributional properties - 'essential' and 'characteristic' properties - are also problematic. First, Heyer's example for essential property, [1a], states actually a contingent property. An essential property is usually defined with the help of the concept of necessity (cf. Forbes 1994:2767³²). The property of being a beast of prey, i.e. 'killing and feeding on the flesh of other animals' (Shorter Oxford Dictionary 1993), for lions is as contingent as the property of 'barking' for dogs and the property of 'flying' for birds. Therefore by definition it cannot be an essential property of the lion (cf. also Putnam and Fodor ...).

Second, Heyer's notion of 'characteristic property' is related to typicality and is therefore by nature contingent. Since Heyer's model is a formal one and anything contingent is not easy for a formal model to cope with, Heyer had to use the concept of necessity for his definition of 'characteristic property' as well as for his definition of 'essential property'. By doing this, Heyer virtually confused the distinction between characteristic property and essential property. Furthermore, the characteristic properties of a natural kind are by no means 'metaphysically necessary', as was claimed by Heyer

(p. 62) because they don't belong to either of the two fundamental types of metaphysical necessity identified in Kripke (1980): that of origin and of identity³³.

Third, Heyer was self-contradictory concerning the notion of nominal kinds because he claimed that nominal kinds had characteristic properties, which are the same as 'defined properties' (p. 62). For a nominal kind, any defined property is shared by each and every member in the set. There may be some cognitive prototypical effects shown by different members of a nominal kind, as shown in the experiments conducted by E. Rosch (1978), but in such cases characteristic properties are not equal to defined properties. For example, in Rosch's experiment equilateral triangles were considered more typical triangles than scalene triangles. In this case, the typical representatives of the nominal kind 'triangle' were equilateral triangles and they possess the characteristic property of 'having the sides of equal length'. Obviously, this property is not the defined property of triangles.

Fourth, neither of the two subsets of distributional property can cover examples like [3]:

[3] *The whale shark can weigh 20 tons.* (Reader's Digest Family Guide to Nature 1984:198)

The property stated in [3] of the whale shark is neither essential nor typical though such examples were regarded as generic by Heyer (cf. 1985:44).

5.7.3 Summary

Heyer presented a formal analysis of generic descriptions but his treatment of 'a natural kind as a generic individual' (p. 70) is not satisfactory in explaining the heterogeneous nature of the data - the superficially unified notion cannot integrate two different

ontological levels: the class-qua-class and its individual members. Also, Heyer's distinction of further properties of generics has conceptual and logical flaws. It leaves some generic types uncovered and describes some properties which are logically unsound - such as the necessary characteristic properties in a natural kind and the defined characteristic properties in a nominal kind.

5.8 Renaat Declerck's Account

5.8.1 a pragmatic approach

Declerck (1991a) presented the first pragmatic treatment of generics, as was called for by both C. S. Smith (1964) and N. V. Smith (1975)³⁴. After Smith (1975), Declerck further clarified one major point in the study of generics:

... genericity is not an inherent semantic feature of NPs. If an NP is interpreted generically, it is by virtue of the fact that it appears in an utterance that yields a generic interpretation. (p. 81)

He devised a set of pragmatic principles based on Grice's maxims, attempting to answer the question: 'why is it that certain utterances are interpreted as generic?'. He hoped that the application of these principles would help to exclude or identify a generic interpretation.

5.8.2 Gricean principles and restrictions

5.8.2.1 principle of restrictions

Declerck's 'principle of restrictions' includes two types: NP-inherent restrictions and contextual restrictions.

By NP-inherent restrictions Declerck meant 'that the NP itself may exclude the possibility of a generic interpretation, either because of its form (singular or plural, the choice of determiner) or because of its semantic and pragmatic meaning' (p. 82). These restrictions are really assumptions about the form and conceptual content of certain NPs.

Declerck listed three NPs, 'the sun', 'my bike', and 'a group of beavers' (cf. p. 82), as expressions unable to receive a generic interpretation because of their semantic nature. As I have discussed in Chapter 1, in language comprehension the same form can be developed into different propositional contents. Sure enough, the NP 'the sun' is capable of receiving a generic interpretation in [1]:

[1] The planet is any celestial body revolving around a star and the sun is any self-luminous celestial body surrounded by its planets

The NP 'my bike', in addition to its singular reference use, can also receive a value-shifting implication (cf. 4.2). It means the NP can be used to make a generalisation about several entities, as in [2]:

[2] I have never been lucky with my bike: two were stolen and the present one is out of order within a month of purchase³⁵

In a relevance-based framework, such problems as whether a generic interpretation is possible for an NP is a natural step in reference assignment (cf. Ch. VI).

Declerck's contextual restrictions 'on the possibility of interpreting an NP as generic' stated that they 'follow from the semantics and pragmatics of the rest of the sentence and from its context' (p. 82). As a matter of fact, this claim, if we know how it works, will make all of Declerck's other principles redundant. Indeed, what else do we need to know in utterance interpretation? The two types of restrictions discussed so far are significant in utterance understanding but Declerck failed to show us how they would actually work step by step.

5.8.2.2 maximal-set principle

As an extension of Grice's (1975:45) maxim of quantity, Declerck's maximal-set principle was supposed to work like this: 'when the speaker uses a description referring to a set, the hearer has a right to assume that the intended set is the largest possible set of entities satisfying the description and the NP-inherent and Contextual Restrictions' (p. 83). When explaining this maxim, Declerck introduced the term 'generic set'. Consider his examples in [3] and [4] and his explanation about them:

[3] I like roses

[4] I grow roses

In the case of *I like roses* the reference of the noun phrase *roses* is restricted neither by the form of the NP itself, nor by the context, nor by pragmatic factors.

The hearer will therefore conclude that the reference is here to the largest set of entities satisfying the description *roses*, that is, the generic set of roses. (p. 83)

Declerck further identified 'generic set' with 'the denotation of the description' (p. 80). Obviously, the term 'generic set' defined in this way, i.e. in its literal sense, doesn't tell us anything new. Related to this, Declerck singled out zero plurals and claimed that they 'can denote either the generic set or any subset of this that comprises at least two members' (p. 98)³⁶. In fact, this is not the unique feature of zero plurals: in

Chapter IV I have shown that singular NPs, definite as well as indefinite, can do the same, i.e. in their generic use, sub-class use and functional use. According to my criteria for member generics, the referent of the NP 'roses' in [3] is still non-specific though it is universally quantified in Declerck's interpretation (cf. 6.1.2.4 and Chapter VII).

5.8.2.3 inclusiveness principle

Declerck's inclusiveness principle claimed that 'a statement about a set as a whole ... will be interpreted as a statement about all the members of the set' (p. 84). As Wilson & Sperber (1988) pointed out, this statement cannot be used to describe what is going on in most cases of daily communication. On the contrary, 'all interpretations start loosely' (ibid., p. 144). An utterance should be interpreted as yielding ENOUGH effects to make the utterance optimally relevant, which will often be less than 'all' (see 6.1.1 for more explanation). Similar arguments apply to the maximal-set principle discussed in the last section.

Declerck also made it clear that 'there will be no inclusive understanding if the [referent] set is not well-defined'. By a well-defined set, Declerck meant either a set referred to by definite NPs (p. 98) or a 'generic set' (p. 84). This point is very confusing. First, definite NPs and generic sets are notions based on different grounds: the former is a syntactic form and the latter is an interpretation. Second, as mentioned in the last section, Declerck claimed in the same article that zero plurals can denote the generic set. Also, none of Declerck's examples illustrates how this principle helps to yield a generic interpretation of an expression³⁷ and neither is it clear what the difference is between this principle and the previous one³⁸.

5.8.2.4 relevant-members restriction

Declerck's relevant-members restriction is as follows: 'a statement about a set applies only to those members of the set to which it is relevant, i.e. to which it CAN be applied

in a **SUITABLE** way (i.e. in a way that is consonant with our pragmatic knowledge of the world)' (p. 84). Basically, this is a more precise way of stating the previously-mentioned contextual restrictions because to make sure that the referent 'is consonant with our pragmatic knowledge of the world' is exactly what we will expect contextual restrictions to do. What else can be called contextual restrictions? On the other hand, one may well ask if the hearer can use this restriction to narrow down the interpretation to, according to the definition, the relevant members, why does he need any other principles or restrictions? Declerck used example [5] to show how the relevant-members restriction works.

[5] **Mangoes are delicious**

Declerck said that a child who 'knows nothing about mangoes whatsoever' will interpret it as 'All mangoes are delicious' (p. 85). 'When he has learnt enough about the world to know that not every fruit of a particular kind shares all the typical characteristics of the kind', 'the child will have learned that in a generic sentence the inclusiveness understanding concerns the generic set minus the members that form an exception with respect to the specific characteristic expressed in the sentence' (p. 85).

Declerck's explanation of [5] amounts to an instance of rational reasoning with context. So his relevant-members restriction either yields the same result as his contextual restrictions do or can be subsumed by some more general pragmatic principle governing the general reasoning process.

5.8.3 the explanatory power of Declerck's principles

5.8.3.1 illusory paradox

Declerck claimed that the combination of his inclusiveness principle and relevant members principle would explain 'the paradox that

[6] *Beavers build dams*

is naturally interpreted as

[7] *All beavers build dams*

but is not truth-functionally equivalent to the latter sentence' (p. 86).

It must be pointed out that the so-called paradox is Declerck's illusion. This is partly because he confused the English word 'all' with the logical universal quantifier ALL. If we take [7] as the proposition expressed in [6], then the symbol 'all' in it should represent the universal quantifier. In that case, [7] is an incorrect interpretation of [6] because a zero plural like 'beavers' is not automatically interpreted as 'ALL BEAVERS',³⁹ and in [6] our knowledge of the world contradicts such an interpretation. So we don't naturally interpret [6] as the proposition [7]. A sentence in the syntactic form of [6] may be interpreted as a proposition in the form of [7], as shown in [8]:

[8a] Even numbers are divisible by two

[8b] All even numbers are divisible by two

But this is because of our knowledge of the number system, not because of the syntactic forms [8a] and [8b] take.

In fact, the expression ‘all’ itself is not necessarily interpreted as the universal quantifier, as shown in the following example:

- [9] Gervase Markham, in *Country Pursuits* (1615), describes the standard technique for training a wild hawk in order to make her ‘meek and loving to the man’:

All hawks [my emphasis] generally are manned after one manner, that is to say, by watching and keeping them from sleep, by a continual carrying of them upon your fist, and by a most familiar stroking and playing with them, ... (p. 104, ‘The Taming of the Shrew’. Oxford University Press 1990)

Here the correct interpretation of the expression ‘all hawks’ is obviously not the maximal set of the hawk class. If we distinguish linguistic expressions from the concepts they represent, there is no paradox here.

5.8.3.2 terminology confusion

Declerck claimed that his analysis could account for the alleged ‘timelessness’ of sentences like example [6] quoted above because his analysis took ‘beaver’ to ‘refer to the largest possible set of beavers’, ‘which includes not only the beavers in the present actual world but also those living in the past and in the future’ (p. 86). Also, Declerck claimed that his analysis explained why such a sentence makes a ‘nomic’ statement (ibid.) In order to evaluate the claims, we’d better clarify the terminological confusion first.

(i) To say that a proposition is timeless means to say that for the proposition, ‘the question of time reference (whether deictic or non-deictic) simply does not arise: the situation or state-of-affairs which it describes is outside time altogether. Obvious examples of timeless propositions are the so-called eternal truths of mathematics and

theology' (Lyons 1977:680; cf. also Strawson 1952:151). Declerck was contradicting himself by putting the concepts of 'timeless', 'past', 'present' and 'future' together (p. 86). What Declerck actually described was an 'omitemporal' proposition, 'one that says that something has been, is and always will be so' (Lyons 1977:680).

(ii) A proposition made by [6] is apparently not timeless, but time-bound. Taking a glance at a chart of the history of evolution, one may easily realise how time-restricted such a statement is. Even if we need not concern ourselves with the philosophical issue of the difference between a 'timeless' and an 'omitemporal' proposition, examples like [6] can never make a nomic statement because the expression 'nomic' is used as the opposite to 'contingent' or 'accidental' (cf. OED 1990). Since [6] is contingent⁴⁰, it cannot be nomic.

Declerck's reasoning runs like this: if *dam-building* 'is attributed to beavers in all possible worlds, then it must necessarily be an essential characteristic of the species. A statement asserting such a characteristic is a nomic statement' (p. 86). According to Declerck, *dam-building* is attributed to beavers in all possible worlds because of the workings of his maximal-set principle on the condition that the set is 'not limited by the contextual restrictions' (ibid.). Then if we let the inclusiveness principle and the relevant-members restriction join in, a set of 'normal' beavers in all possible worlds will be neatly picked out. Now we have a problem here. Since Declerck didn't define what 'an essential characteristic' meant, we have only two alternatives. It can be either a necessary or a typical condition for some entity. The 'necessary-condition' interpretation, which might be Declerck's choice since Heyer (1985:44) also used the term 'essential' in this way, will imply that those animals in the maximal set of beavers which did not, do not or will not build dams are not beavers. The falsity of this prediction is blatantly obvious. On the other hand, if we take the 'typical-condition' interpretation, then it will predict that it is not a nomic statement because it is contingent and cannot be qualified as a law.

Declerck may have meant that [6] could be used to make a gnomonic statement, something different from a nomic statement, since he restated his position elsewhere, actually contradicting himself:

What we are concerned with is therefore not a strict rule (law) but a strong tendency. (p. 87)

In the linguistic literature such a statement is called ‘gnomic’⁴¹ and is said to describe ‘tendencies, generalities and assumed regularities’ (Lyons 1977:681).

5.8.4 *a N* expressions

Declerck’s account of the generic interpretation of an *a N* expression goes like this (p. 92f):

- (i) ‘The fact that an indefinite NP is chosen means that the referent is not uniquely identifiable to the hearer’;
- (ii) This means ‘that the referent is a member of a set consisting of more than one member’ and at the same time ‘a sentence like A beaver builds dams basically makes a statement about one single beaver’;
- (iii) If the possibility that the referent is one member (either specific or non-specific) of the set is excluded, there is nothing to prevent it from being ‘applicable to any one member of the set’;
- (iv) ‘Here the idea of “any beaver” is at the core of the generic interpretation itself: the generic interpretation arises precisely because the way the sentence is interpreted is something like “Take any one (relevant) beaver and you will see that it builds dams”’;
- (v) This analysis ‘explains why the construction with a beaver differs from the construction with beavers in that it suggests more strongly that the property expressed by the predicate is a necessary (essential) property of the genus’ (p. 95).

Steps (i-v) show Declerck's idea of the different route in interpreting *a N* expressions that the hearer takes from interpreting *the N* and *zero Ns* expressions. However, the jump Declerck makes from 'one single beaver' in (iii) to 'any beaver' in (iv) is not licensed in any way. The 'any' interpretation has to be the result of pragmatic inference⁴² based on the hearer's judgement made of the whole proposition: whether the attributed property is a necessary condition of the entity which the subject represents or not. The hearer's encyclopedic knowledge makes him realise that it is not wise to impose an 'any' interpretation on, say, example [10a], if we acknowledge there is a difference between the truth-conditions of [10a] and [10b].

[10a] A dog likes to eat far more meat than a human being. (COBUILD English Grammar:55)

[10b] Any dog likes to eat far more meat than a human being

Since (10a) is a synthetic statement, in which a contingent property is predicated of dogs, Declerck's claim in step (v) is questionable.

Declerck claimed that his analysis of *a N* expressions could account for the oddity of the famous example from Lawler (1973):

[11] A madrigal is popular

Declerck's explanation of the 'unacceptability' of [11] is that 'being popular is a property which can be attributed to a set as a whole ... but which is not necessarily shared by each member of that set separately'. In fact, being popular can be naturally shared by members of a set, as shown by the acceptability of the following statements:

[12a] A media celebrity is popular

[12b] A hero is popular

The general problem with examples like [11] is that suitable contexts in which these utterances would have adequate contextual effects, i.e. be relevant, are not readily available. Being popular is not part of our mental scheme of madrigals. By contrast, statements in the same form as those in [12] are acceptable because our mental schemes of heroes and media celebrities contain the predicated property, being popular, as their prominent feature.

5.8.5 summary

Declerck's pragmatic account is inspiring in that it tries for the first time to bring pragmatic principles systematically into generic studies. However, due to the vagueness and redundancy in Grice's theory, on which Declerck based his account, his attempt is insufficiently constrained to use as a workable theory.

5.9 summary of the chapter

In this chapter I have reviewed the major linguistic literature on generics. Scholars working in philosophy and artificial intelligence are also interested in generics and I have discussed their views, including the most important collection of works on the topic so far, *The Generic Book* (Carlson & Pelletier 1995), throughout the thesis. The review shows a development in this area from an early general grammatical approach to a more precise semantic approach and then to a pragmatic approach, which started to introduce inference into the discussion. Against this background, I have adopted a view based on relevance theoretic framework: the mechanism of the interpretation of generics involves mainly the inference guided by a general pragmatic principle and the goal of gaining cognitive effects at justifiable cost is the main reason why people use generic expressions. In the following chapter, Chapter VI, I will discuss this view in detail and give a coherent classification of various kinds of generic reference.

Chapter VI

Types of Generic Reference

6.0 types of generics

As has been discussed in Chapter V, the term 'generic' has been used in the linguistic literature for the following major types of interpretation of noun phrases:

1. member generics:

[1] men don't like bony things (S1A-065-86)

2. class generics:

[2] Shortly after Alexander Graham Bell invented the telephone people started to wonder if it was possible to send pictures over wires. (W2B-034-10)

3. sub-class generics:

[3a] Some sharks, including the great white, the mako and the thresher, are warm-blooded. (*International Herald Tribune* Dec. 10, 92)

[3b] Sue has invented a new hair-do which looks v. nice when it works. (SEU-W-07-01-217)

4. pronoun generics:

[4] At ground level the most you can expect to see are the herons and their cousins, which haunt every patch of water they can find. Sometimes one also comes across kingfishers, which can be tiny and brightly coloured or fairly large birds,

larger than one expects a kingfisher has any right to be. (W2B-021-87&88 - 'The Mighty Rainforest')

The initial process of interpreting generic expressions varies according to their noun phrase type (cf. 3.2.4). With indefinite NPs it starts mainly with decoding, as in [1], [3a] and [3b], and with definite NPs, it starts with homophora, a direct appeal to the addressee's knowledge of the world, as in [2]. Sometimes, bridging inference is also exploited, as in [5]:

[5] But scientists believe **the porpoise**, *phocoena phocoena*, is also vulnerable to long-lasting, toxic pollutants which flow down rivers into the sea, get into the small fish it preys upon and then accumulate in the porpoise's body fat. It may also be frightened away from busy areas by the noise and movements of ships and boats.

The males grow up to 1.7 m long. The females are sexually mature at only 14-months-old and they give birth to single calves. (*The Independent* 12/26/95)

Both 'the males' and 'the females' receive generic interpretation and their referents 'male porpoises' and 'female porpoises' are established by bridging inference via the trigger 'the porpoise'.

The following sections are devoted to detailed discussions of different types of generics.

6.1 generalising statements and member generics¹

A generalising statement is one in which a generalisation is made about the referent of an expression in it. Such a statement may be 'loose' in the sense that the generic expression is not overtly quantified, as in 'Birds fly' and when it is pragmatically enriched, its intended quantification is not the full set denoted by the head noun.

Loose use of language can be illustrated by examples such as ‘France is hexagonal’: the decoded meaning of ‘hexagonal’ here is considered loosely used because it is not the property that the shape of France strictly has.

Generalising statements, such as ‘Birds fly’, ‘Fish are cold-blooded’ or ‘Snow is white’ are extensively exploited by our belief system for the reason of cognitive economy. We can derive enough cognitive effects from them for our daily purposes with less processing effort than we do their more precise versions. For example, in the situation described in [1a], the addressee needs only a short generalising statement about proper nouns like [1b] in order to process [1a]. As a result, he can understand a rule of Scrabble that the speaker of [1a] is trying to explain:

- [1a] Disraeli’s a proper noun you can’t have that . . . look it’s a general rule of all word games . . . you don’t use proper nouns (S1A-085-302)
- [1b] A proper noun is the name of a person, place etc.

Suppose both interlocutors know that ‘Disraeli’ is a personal name. If the addressee processes ‘proper noun’ in the context of [1b], then he will know [1a] tells him that he cannot use words like ‘Disraeli’ in playing Scrabble. As a result, he will share a certain belief, i.e. the rule spelled out in [1a], with his opponent and he can fulfill this cognitive goal: to be able to play the game of Scrabble with his opponent. By contrast, a student required to write an essay on, say, ‘the proper noun / proper name difference’ will need to read dozens of pages of literature on this subject before he can fulfill his cognitive goal, i.e. creating an intelligent essay on proper nouns and names.

In member generics, some property is attributed to a potential member of the class denoted by the expression as its characteristic property. Member generics can be presented explicitly (see 6.1.2.5) as well as implicitly and are to be treated in terms of different kinds of quantification². The quantification which is the key to the interpretation of any instance of member generics is sometimes called ‘generic quantifier’, and it is infamously difficult to capture in formal semantics (cf. Lewis 1975;

Lyons 1977:196; Krifka 1994). When we interpret a generalizing assertion about members of a certain class, we may allow some exceptions to the assertion while we still hold that assertion to be true or acceptable (cf. my clarification of the notion of truth in utterance interpretation in 2.2.2.1. The so-called ‘generic quantifier’ can be understood as the universal quantifier minus the number of the exceptions we allow a given assertion to have to remain true. They can be quite varied if we compare ‘Birds fly’ with ‘Mammals give birth to the young live’. While we hold both as true, in the former case we believe that not all but most birds fly and, in the latter case we believe that only less than half of the mammal class, namely the productive females of most types of mammals (but not all of them), can possess the property predicated.

According to whether the expression has an explicit quantifier or not, member generics can be divided into implicit and explicit member generics,. The scope of quantification of a nominal expression can be explicitly expressed by various forms of quantifier (cf. 6.1.2.5). Examples of quantifiers within the NP are ‘All prime numbers are positive integers’, or ‘Most birds fly’. Quantifiers can be realised as adverbials, ‘Fish characteristically have gills’, or part of the verb phrase, ‘Flies tend to like lamps’. Member generics can also be quantified by modals ‘may’ and ‘can’.

The words from closed classes such as articles, pronouns and numerals used at the beginning of a noun phrase are divided into two major groups: determiners and quantifiers. A determiner determines the identity of the referent of the NP in which the determiner is embedded, ‘tell[ing] us which member of which subset of a set of entities is being referred to’ (Lyons 1977:454f). By contrast, a quantifier tells us ‘the size of the set of individuals’ or ‘the amount of substance that is being referred to’ by the NP in which the quantifier is embedded. In member generics, the difference between the two is neutralised³. The role of the articles, for example, is related to both the identity and the size of the set being referred to within a class. The so-called ‘generic quantifier’ in instances of member generics is related to, but is to be differentiated from, the universal quantifier because there is a gradient of quantification with regard to the actual interpretation of the referent⁴. There are two aspects of this quantification: one is the

number of exceptions we allow it to have for it still to be held true and the other is the members of a class which are taken to have the property being predicated. However, the interpretation of a generalising utterance in a real situation doesn't have to be concerned with such precise numbers as long as the addressee can see how the communicator may have expected her utterance to achieve relevance.

6.1.1 the interpretation of member generics in generalising statements

Paul Grice proposed the Cooperative Principle and a set of maxims (cf. 1989:26ff), to explain the interpretation of tropes like metaphor in terms of the 'flouting' of the first maxim of Quality (cf. *ibid.*, p.34):

His maxims of Quality are as follows:

Supermaxim: 'Try to make your contribution one that is true'

Specific maxims:

- '1. Do not say what you believe to be false
2. Do not say that for which you lack adequate evidence' (*ibid.*, p. 27)

On the assumption that communication is a rational behaviour, Grice stated that the above maxims entitled the hearer to expect the speaker's 'contribution to be genuine and not spurious' (*ibid.*, p. 28). However, the speaker 'may flout a maxim; that is, he may blatantly fail to fulfill it' in order to 'give rise to a conversational implicature' (*ibid.*, p. 30). The hearer is supposed to recover the speaker's meaning on such an occasion by trying to reconcile the utterance with the supposition that the speaker is still sticking to the Cooperative Principle⁵. For example, on hearing the utterance 'You are the cream in my coffee' the hearer is encouraged to suppose that with this flatly false statement 'the speaker is attributing to his audience some feature or features in respect of which the audience resembles (more or less fancifully) the mentioned substance', such as 'You are my pride and joy' (*ibid.*, p. 34). In this

account, the flouting of the maxim serves as a trigger for the intended implicature, which is the communicated meaning of a metaphor.

Sperber and Wilson (1985-86; 1995), Wilson and Sperber (1992) and Wilson (1995) challenged the Gricean account. According to Sperber and Wilson, 'there is no discontinuity between loose uses and the most characteristic cases of poetic metaphor' because 'in both instances, the proposition expressed departs from full literalness' (1985-86 / 1991:547) but the Gricean account of metaphor cannot be extended to deal with loose talk. Sperber and Wilson proposed a relevance-theoretic account which is more explanatory because it naturally covers both metaphor and loose talk.

If Sperber and Wilson are right, their account can also shed light onto the interpretation of generalising utterances, where the proposition expressed may also depart from full literalness, as shown by the example in [1]:

[1] Dugongs only produce one calf every three to six years and do not breed until they are 10 to 15 years old. (W2B-029 extra corpus material)

In a literal sense, this statement cannot be taken as true. If we pick up a sterile member from those which can be referred to by the expression 'dugongs', it won't 'produce one calf every three to six years'. And there are many of them in the class of dugongs. Even if we pick up a fertile one, it is possible that it won't 'produce one calf every three to six years'. However, nobody will accuse the writer of [1] of telling a lie.

Like standard cases of loose talk, the interpretation of such generalising utterances proves to be a problem for Grice. On the one hand, the communicator of [1] is saying something as literally false as 'loose talk'⁶ and [1] should be understood differently from a literal statement like 'I parked my car in the garage'. On the other hand, since people intuitively perceive such statements as either true or false⁷ (the one made in [1] will be presumably taken as true) and the speaker of [1] is not seen as

'blatantly failing to fulfill' Grice's first maxim of Quality, [1] cannot be explained by Grice's conversational implicature used to explain metaphor, which results from the flouting of a maxim. Therefore, the interpretation of such generalising utterances is different from that of either a literal statement or a metaphor.

In the relevance-theoretic framework, '... every utterance is a more or less faithful interpretation of a thought the speaker wants to communicate' (Sperber & Wilson 1995, 3.3). The interpretation of generalising utterances is a good example of this claim in that though generalising utterances are often treated as a class, i.e. member generics, they vary from a faithful to a much less faithful interpretation of the thought that the communicator intends to convey. Sperber and Wilson also recognise two kinds of language use: descriptive use and interpretive use. 'An utterance is descriptively used when the thought interpreted is itself entertained as a true description of a state of affairs' (ibid., 2.3). Generalising utterances are a type of descriptive use of language: a declarative generalising utterance typically expresses a belief about the world⁸.

With one utterance, the communicator may be able to convey a particular set of propositions, which are the analytical or contextual implications of the proposition expressed by the utterance. On the one hand, the communicator expects the addressee to be able to choose this set of propositions correctly from the processing of her utterance so as to achieve optimal relevance. On the other hand, she will try to organise the utterance in the way that she believes is the most economical to process⁹.

Let me illustrate this point with part of the example in [1].

[1] Dugongs only produce one calf every three to six years.

When we process the indefinite expression 'dugongs', we start by decoding it, gaining access to the assumptions, if any, stored in the concept DUGONGS. They may include such assumptions as 'Dugongs are animals' and 'Dugongs live in the sea', etc.

Assuming a Russellian semantics of indefinite descriptions adapted to plural descriptions¹⁰, the underlined plural noun phrase can be interpreted as a part of the proposition expressed by the utterance:

[1'] There are *xs* such that *xs* are dugongs and *xs* only produce calves every three to six years.

Aiming at the subset of implications the communicator intends to convey, the addressee assumes that this subset will have enough cognitive effects to make the utterance worth his attention and the form of the utterance is the one which requires least processing effort the communicator could think of. For instance, the background implication¹¹ 'Dugongs are animals' may trigger assumptions like [2a], [2c] and [2e] as the context for the addressee to entertain [1'] in. As a result, combining [1'] with [2a], he will have contextual implication [2b]. Furthermore, if he entertains [2b] in [2c] or [2d] in [2e], he will have contextual implications [2d] or [2f] respectively:

[2a] If it takes an animal three to six years to produces its young, the birth rate of the animal is very low.

[2b] the birthrate of dugongs is very low.

[2c] Animals with a low birth rate are likely to be an endangered species.

[2d] Dugongs are likely to be an endangered species.

[2e] Endangered species should be protected.

[2f] Dugongs should be protected.

These implications may well be useful to the addressee in one way or another, fulfilling the cognitive goal he sets out when he starts reading this *BBC Wildlife* article: 'Earth, air, fire, water, oil and war'.

Some implications of a generalising utterance can be misleading or unacceptable but a competent addressee has intelligent strategies to tell them apart. For example, the addressee of [3a] would be misled by [3a] only if he were to take [3b] as true¹², which is an analytic implication of [3a]:

[3a] Danes are nice people aren't they (S1A-089-85)

[3b] $\forall x (\text{Dane}(x) \rightarrow \text{Nice}(x))$
(If x is a Dane, x is nice)

However, a competent addressee will not take [3b] as what the speaker of [3a] intended to mean. The addressee evaluates his interpretations by asking himself two questions: Could the communicator have expected me to arrive at this? Would she have seen it as relevant enough to me? (cf. Sperber 1994:192)¹³. Obviously no rational addressee would think that the speaker of [3a] was expecting him to take [3b] as an implication intended to be communicated with [3a]. This is because [3b] contradicts a conclusion derived from some background assumptions that the addressee is very likely to hold as true, such as [4a] and [4b]:

[4a] Every race has criminals and they are not nice people.

[4b] Danes form a race.

From both [4a] and [4b], one can infer [5].

[5] Some Danes are not nice.

This conclusion contradicts [3b]. If there is no reason for the addressee to think that [3b] is stronger than [5], then [3b] will be rejected. As a result, the addressee has no reason to believe that his communicator expects him to derive [3b] from [3a].

The above is an illustration of a competent addressee's strategy. In the view of relevance theorists, 'all interpretations start loosely; some may then be tightened to the point of literalness. By the criterion of consistency with the principle of relevance, an utterance will be understood as loose or metaphorical unless nothing less than a fully literal interpretation will do' (Wilson & Sperber 1988:144). For example, none of the contextual effects that one may derive from interpreting [1], i.e. [2b], [2d] and [2f], needs to resort to a tightened literal implication, [1']. Thinking that each and every dugong possesses the predicated property doesn't increase the overall relevance - resulting in no cognitive gains but only a waste of effort - and no competent addressee will indulge in such an activity¹⁴.

There are cases where a loose interpretation won't do. For example, if we are required to do [6a] and to use [6b], a generalising statement, as the basis for our reasoning in solving the arithmetic problem in [6a], we will have to choose the analytic implication of the proposition expressed by [6b], [6c], as the one the writer of [6b] intends to communicate.

[6a] For each of these numbers say whether it is prime or not prime:

a. 2910 b. 1375 c. 247 d. 283¹⁵

(*GCSE Revise Maths to Further Level* Macmillan 1993, p. 17)

[6b] A prime number is an integer $p (>1)$ such that p has no positive factors except 1 and p . ('Number, theory of', *Encyclopedia Britannica*, 15th edn.)

First we decode the indefinite expression 'a prime number' in [6b] and gain access to the information stored under PRIME and NUMBER (or alternatively under the concept PRIME NUMBER if we regard the two words as a compound). The proposition expressed by [6b] is something like [6c]:

[6c] For all / any x which is a prime number, x is an integer $p (>1)$ such that p has no positive factors except 1 and p .

The reason for taking [6c] as what the writer of [6b] essentially wants to communicate is that she expected us to share with her some basic beliefs such as those in [7]¹⁶, which have become easily accessible because [7a] may be an assumption stored under NUMBER or PRIME NUMBER and [7b] may be triggered by [7a]:

[7a] The definition of a (prime) number is part of a formalised axiomatic system - the number theory.

[7b] A formalised axiomatic system should be completely consistent and free from contradiction.

[7a] and [7b] entail that a definition like 'prime number' doesn't allow exceptions. This contextual implication can bring us benefits. For example, if we know that a certain number, 283, is a prime and in the process of proving this we have (mistakenly) found a factor of it in addition to 1 and 283, we will be confident that there must be some miscalculation on our part and we should go through it again. In this way we can answer 'Yes' to the first evaluating question. As for the second question: 'Would she have seen it as relevant enough to me?', the answer is also positive. With [6c], which we have derived from [6b], we can correctly fulfill the task set in [6a] so the processing of [6b] is well worth our effort. On the other hand, we can see that the writer of [6b] has tried her best to be concise and accurate. Thus both clauses (a) and (b) of the presumption of optimal relevance are satisfied (cf. Note 9).

The communicator is constrained by her abilities and preferences in constructing utterances and people may make mistakes in communication. When the communicator makes mistakes, a competent addressee can still infer her intention by anticipating a result that she might have aimed at. Let me take the following dictionary definitions of 'prime number' to illustrate this point:

[8a] A prime number is 'an integer that cannot be factorized into other integers but is only divisible by itself or 1, such as 2, 3, 7, and 11'. (*Collins English Dictionary* 3rd edn. 1991)

[8b] A prime number is 'divisible only by itself and unity (e.g. 2, 3, 5, 7, 11)' (*The Concise Oxford Dictionary* 8th edn. 1990)

If we are asked to identify whether the number '-2' is a prime and we want to use [8a] and [8b] as the basis of our reasoning, we cannot deduce an answer from either because they don't specify that negatives cannot be prime numbers. The cognitive effects we have got from processing [8a] or [8b] on such an occasion are small because they are bad definitions. However, we can still appreciate the writer's intention to achieve a concise and correct definition in [8a] or [8b], just as we would understand a footballer's intention to score even when the ball he kicked didn't go into the net. Therefore, the presumption of relevance can still be satisfied.

In either non-literal, e.g. [1], and literal, e.g. [6b], cases, the truth of the proposition being communicated depends on whether it correctly describes the states of affairs it is intended to represent. In literal cases, the addressee regards the proposition expressed in the utterance as fully identical to the communicator's thought. In the non-literal cases, the addressee takes a subset of implications of the proposition expressed in the utterance as the communicated implications of the communicator's thought.

According to Kempson (cf. 1986:214f), the semantics of the definite description is different from that of an indefinite one in that the definite article signals the easy accessibility of the constructed concept. This difference does not affect the thought that the communicator wants to convey in a generalising utterance. Look at [9]:

[9] The wild turkey looks quite like an old Norfolk turkey - generally brown, or even black, with brilliant reflections of bronze or metallic green, and the same bare head and neck adorned with red wattles that is familiar to us in farmyard birds. (*The Times* 12/24/94)

When we process the definite expression ‘the wild turkey’, we gain access to the corresponding concepts WILD TURKEY by decoding it. The definite article in the expression indicates that the intended referent is easily accessible in some way. Since it occurs in the first sentence of a new section of an article and there is no potential textual antecedent in the co-text and the predicate describes a property generally shared by individual wild turkeys, the most plausible hypothesis is that the expression is used to refer to potential members of the class denoted by the head noun. The proposition expressed by [9] will look like [9’]:

[9’] There is an x such that x is a wild turkey, and x looks quite like an old Norfolk turkey - generally brown, . . .

Similarly, a generalising utterance containing an indefinite NP with a noncount noun as its head, [10], may have the proposition expressed like [10’]:

[10] Tap water also contains varying amounts of rust, grit and silt. (W2D-012-22)

[10’] There is x such that x is tap water and x contains varying amounts of rust, grit and silt.

6.1.2 types of member generics

6.1.2.1 universal quantification

One extreme of the gradient of the generic quantification equals universal quantification when the number of exceptions allowed for the proposition to remain true is zero¹⁷. The referent of an expression has a universal quantification when each and every member of the class referred to is intended to possess the predicated property. A universally quantified referent may be expressed by all of the four canonical forms of noun phrase.

- [1a] . . . an isosceles triangle is to be defined as one that has two sides of equal length. (*Elementary Geometry*, by John Roe, Oxford University Press 1993, p. 4)
- [1b] A guest arrives at a restaurant completely unaware of any dress code. Then, at the entrance, he is enlightened: ‘Sorry Sir, gentlemen are required to wear ties in our restaurant.’ (*The Economist* Feb. 6, 93)
- [1c] The income tax or ‘financial’ year runs from 1 July to 30 June. (*Living in Australia: a guide for new settlers* 1988:117)
- [1d] Rape within marriage became an offence last year. (*Evening Standard* 2/13/92)

The environments in which universal quantification can occur are related to various notions of necessity but what counts as ‘necessity’ is controversial (cf. Blackburn 1994:257f; Lyons 1995:119ff; Honderich ed. 1995:474f; 609f). For a theory of utterance interpretation what is important is whether a rational communicator expects her addressee to understand in this way. I take the referent of the underlined NP in [1a] as universally quantified because if it were not so intended, then the writer is either deliberately misleading or ignorant of mathematics. Second to entities in a formalised axiomatic system, legal demands or authoritatively declared rules are also expected to contain entities with universal quantification, such as [1b], [1c] and [1d].

A statement can acquire prescriptive force from the communicator’s intention¹⁸ and hence universal quantification is imposed on it, as those shown in [2]:

- [2a] The definition of an adventuress cannot just be someone who chases plutocrats. No, an adventuress must take risks, cross boundaries, show tastes, have a will to power, possess a daring capacity for pleasure. She will never let anything stand in her way, and realises that if life is not an adventure, it is nothing at all. (*The Sunday Times* 13/8/95)
- [2b] As Montesquieu remarked, aristocratically: ‘A really intelligent man feels what other men only know.’ (*The Independent* 25/10/95)
- [2c] The great myth is that nice girls don’t get raped; that a woman asks for it and secretly wants it. It’s not just in the heads of rapists, it’s in the minds of family,

- friends and husbands.... ('The reality of rape', *Daily Express*, Feb. 21, 1991 p.26)
- [2d] We pedants have never objected to split infinitives. (*The Independent Weekend* 10 Feb., 1996)
- [2e] William Blake recommended that one should never seek to tell one's love, and his point was not that it was a tactical mistake to do so, but that it could not be done. Thoreau was categorical: "the friend never declares his love". (*Times Literary Supplement* May 3, 91)
- [2f] If the hard ecu inflated at a rate lower than that of any European currency, or, better still, if it did not inflate at all, only the foolish would prefer to be paid or to save in pounds or francs or even German marks. (W2E-001-34)
- [2g] The veiled warning came from Lord Wakeham, chairman of the Press Complaints Commission . . . he explained: 'Where a member of the Royal Family seeks to put a matter into the public domain - through a public interview - that too becomes a matter of national interest . . .'. (*News of the World* 11/19/95)

In [2c] the myth is self-defined because the property predicated is intended as a necessary condition for the referent of the subject NP, implying that if a girl had got raped, then she couldn't have been regarded as a 'nice girl' because she must have done something wrong in the first place. In [2e] 'the friend' is defined in such a way that if he declares his love then he is not qualified to be what he is supposed to be - 'it could not be done'. Things along the same lines can be said about [2a], [2b] and [2f].

Part of [2g], [2g'], can be analysed as a case of universal quantification as in [2h]:

- [2g'] A member of the Royal Family seeks to put a matter into the public domain . . . that too becomes a matter of national interest.

[2h] For all/any x who is a member of the Royal Family, if x seeks to put a matter into the public domain then that becomes a matter of national interest.

The difference between the examples in [2] and [1] is only that the credibility of those in [1] is backed by either a well-formed system or the legal system, while in the case of those in [2], it is the personal belief or personal appeal to social convention.

The following example also illustrates how a universal quantification is imposed by the communicator's intention:

[3] It was the period during which public interest in what seemed to be a new and confident Conservative philosophy was growing, and I would often ask our leader her advice on how best to reply. I recall a letter from a recently bereaved gentleman inquiring bluntly whether she believed in the life hereafter. Her reply was oddly indirect: 'Christians believe in the immortality of the human soul, and I am a Christian.' (*The Times* 10/18/93)

Indirect as Lady Thatcher's reply is, her intention for its reader to draw the syllogistic conclusion is obvious. In order for the conclusion to be valid, the underlined expression in the major premise has to be universally quantified, as shown in [4]:

[4a] Christians believe in the immortality of the human soul.

[4b] I am a Christian.

[4c] Therefore, I believe in the immortality of the human soul.

Theoretically, universal quantification of a member generic referent can be intended by the speaker on any occasion but its acceptability is based on the normative force provided by some systems such as those in mathematics, law or social convention.

With definitional referents like 'prime numbers' or 'isosceles triangles' their universal quantification is guaranteed by the well-formed systems in the number theory or Euclidean geometry. That is, [1a] should be interpreted as 'Every member (or all

members) of the set referred to be the NP 'an isosceles triangle' belongs to the set referred to be the NP 'a triangle that has two sides of equal length'. If we use this interpretation as the major premise, we have the following syllogism:

- [5] All and only isosceles triangles are triangles with two sides of equal length.
x is a triangle with two sides of equal length.
therefore, x is an isosceles triangle

It can be simplified as:

- [6] All and only As are Bs
C is a B
Therefore, C is an A.

Outside the well-formed systems, the categorization of an instance can be independent. An entity in the physical world has to be categorised as a member of a certain class before it can be affected by the universal quantification over the members of that class. For example, an act of sexual intercourse between a married couple can be either an incident of 'rape within marriage' or a conjugal routine. Before an event has been judged as an instance of rape within marriage, the universal quantification in a legal statement like 'Rape within marriage is a criminal offense' has no effect on it. The referent of the topic of a taxonomic statement is also fundamentally extensional, like the following¹⁹:

- [7a] The green-fleshed Ogen, for instance, is technically *a cantaloup*. (*The Independent* 13/8/94)
[7b] But the wild turkey is *a trim, athletic bird*. (*The Times* 12/24/94)
[7c] I have never thought of the avocado as *a particularly suggestive fruit*, but the Aztecs did: our word avocado derives from their 'ahuacatl', which meant 'testicle tree'. (*The Independent* 16/7/94)

[7d] A count noun like **boy**, for example, is, on its own, only *a lexical item*. (Quirk et al. 1972:137)

The process of inference based on [7a] as the major premise is the following:

[8] The green-fleshed Ogen is technically *a cantaloup*.
x is an Ogen.
Therefore, x is technically *a cantaloup*.

That is, once we decide that something is an Ogen, then it is entailed to be a cantaloup in the current botanical system. By contrast, the referents of the underlined expressions in [2] are all definitional.

To confuse definitional referents and referents with real-world existential presuppositions may render a deductive inference invalid. For example, if we take the referent of the underlined expression in [4a] above as one with a real-world existential presupposition, then our world knowledge tells us that the referent in such an inductive generalisation cannot be universally quantified. We know that an infant can be baptized to be a Christian without his / her own endorsement. Therefore, there cannot be a necessary link between the referent of the subject and the predicated property. That is, a Christian baptized in her infancy may grow up not believing in Christian ideals. If the major premise is not universally quantified, then the deduction is invalid, like the one in [10]:

[9] Some As are B.
C is A.
Therefore, C is B.

On the other hand, if we take the referent of the underlined NP in [4a] as definitional, we still know that being a Christian can be an accidental property for a person in that s/he can become one through baptism before s/he has established a fully-

fledged belief system. So s/he cannot be held to be responsible for a belief that the Christian theologians advocate. Therefore, one can be a baptised Christian without believing in certain Christian doctrines. The process of modus ponens in [4] is also invalid because the law of identity cannot take two different entities: ‘a Christian’ in [4b] can be a real-life entity and ‘Christians’ in [4a] are definitional.

A related issue is that a member generic interpretation can be intended by the speaker despite the fact that what it describes is controversial, as shown in [10]:

[10] One advantage [of living separately from one’s partner] is that we don’t yell at each other for not doing the dishes or row about things that irritate most couples, like not having enough money. (*The Independent* 9 Feb. 1996)

The statement ‘most couples are irritated by things like not having enough money’ may be controversial but it is not controversial that the above member generic statement has been intended by the speaker.

6.1.2.2 non-universal quantification

Generic quantification, apart from the universal one, varies greatly, from the near-universal quantification to the ‘few-members’ quantification. An example of the latter is given in Chesterman (1991:38), quoted here as [1].

[1] Finns always do well in ski-jumping competitions.

The expression ‘Finns’ in [1] cannot be preceded by unstressed ‘some’ without changing its meaning and therefore it is not a plural reference²⁰. It is categorised as member generic because the statement made in [1] is a generalisation and the predicated property can be possessed by individual members. However, the scope of the generic

quantification in [1] is extremely small: the referent consists of ‘perhaps only two or three individuals’ (ibid.).

Instances of non-universally quantified member generics are often taken as the generics proper²¹. Almost all forms of noun phrase may be used to express member generics.

i. indefinite count noun NPs:

In [2], we can see the syntactic contrast of an indefinite singular and an indefinite plural expression, which makes no difference in the proposition expressed. For example, we can use ‘people’ to replace ‘a person’ in [2a], or use the construction of the underlined NPs of [2c] in [2d] and vice versa, without changing the meaning of the utterances.

[2a] In private, a person says all sorts of things, slurs friends, uses coarse language, acts silly, tells dirty jokes, repeats himself, makes a companion laugh by shocking him with outrageous talk, floats heretical ideas he’d never admit in public, and so forth . . . (Milan Kundera, *New York Review of Books*, September 95)

[2b] For centuries, because of the ships, journeys were longer and more tragic than they are today. A voyage covered its distance in a natural span of time. (*The Lover* by Marguerite Duras, Glasgow: Collins Publishing Group 1984, p. 115)

[2c] There is evidence too that more sperm is produced not by a man who hasn’t had sex for a week because his wife has flu, but by a man whose wife has been away from home for a week. (14/8/94 *The Sunday Times*)

[2d] The popular belief that children without brothers or sisters grow up to be lonely, spoilt and maladjusted is a myth, a book published today says (*The Only Child*, by Ann Laybourn, HMSO 1994)

ii. singular definite NPs:

The substitution of 'a wild turkey' or 'wild turkeys' for 'the wild turkey' in [3] doesn't affect the proposition expressed, either:

- [3] The wild turkey looks quite like an old Norfolk turkey - generally brown, or even black, with brilliant reflections of bronze or metallic green, and the same bare head and neck adorned with red wattles that is familiar to us in farmyard birds.²²
(*The Times* 12/24/94)

iii. noncount noun NPs:

In [4] the underlined expression is a noncount noun, which is used in a generalising utterance to refer to instantiations of the material denoted by the head noun.

- [4] Leaf mould is less acid than peat and contains slightly more potassium and nitrogen, but otherwise serves a similar purpose. (W2D-011-17)

iv. nationality adjectives and nouns:

There is a contrast in [5] between a nationality adjective and a nationality noun, both of which can occur in generalising utterances.

- [5a] Neither the theory nor the practice of communism is indigenous to China. The Chinese are individualists, and their unit of community is the family. (*One's Company: a journey to China made by the author in 1933*, by Peter Fleming, Penguin Books 1956, p. 153)

- [5b] The Romans had little power as individuals, ... (*The Independent* Sept. 5, 94)

When a nationality noun is used the definite article is optional:

[6a] But the Danes are the easiest to get to know (S1A-089-91)

[6b] Danes are nice people aren't they (S1A--089-85)

[7] is an example of the variation 'plural pronoun + plural NP':

[7] We Danes are very good bookkeepers, ... (*International Herald Tribune* Sept. 1, 94)

v. bare singular count noun NPs:

[8] is an example of bare singular count noun, which is restricted to a few lexical items or syntactic environments (notably, contrastive constructions):

[8] 'Man displays his status through clothes,' says Morris. (*Daily Mirror*, Sept. 8, 94)

vi. possessive NPs:

Possessive NPs can also be used to refer generically:

[9a] George Cave ... was raised by Mr Cave in Dovercourt, near Harwich, Essex, in 1923 ... His apple is crisp, juicy, fine-textured and smells faintly of strawberries. (*The Independent* 27/8/94)

[9b] Our 18th-century predecessors had a passion for shopping, treating it as a pleasurable pastime, fashionable and fun: 'The shops are really very entertaining,' remarks a character in one of Fanny Burney's novels, obviously deep into lifestyle shopping. (*The Times* 2/27/93)

vii. proper names:

Proper nouns which can be used to refer generically belong to several groups, including nouns for brand names, names of goods named after the people who first produced them, names of the maker, and nicknames of animals. On such occasions, we infer from the context that members of a class of entities sharing that name are being referred to, instead of one particular entity, as those shown in [10]²³.

[10a] but in fact is a Rolls Royce *a quality car* (Longman Spoken Corpus - f_090301-s n=311)

[10b] George Cave, which *is usually at its best in mid-August*, was raised by Mr Cave in Dovercourt, near Harwich, Essex, in 1923. (27/8/94 *The Independent*)

[10c] The Nissan Micra²⁴ *was rated best buy in the supermini class with the Toyota Starlet, Daihatsu Charade, Peugeot 306 and Rover 100 worth considering. Best buy in the small family car sector was the Rover 200.* (*The Daily Telegraph* June 2, 95)

The above examples all make a generalizing statement about members of different classes of things. Obviously, the generic quantifier of the referent of 'the wild turkey' in [3] is quite different from 'we Danes' in [7] - while most wild turkeys have the predicated property, only a very small proportion of the Danes are bookkeepers by profession (then perhaps much more are being referred to figuratively). The key to the interpretation of non-universal member generics is not the precise calculation of how many exceptions are allowed for it to remain true. As I have argued in 6.1.1, the addressee's pursuit of optimal relevance will lead him to derive enough cognitive effects to make his processing of such an utterance worthwhile.

6.1.2.3 plural member generics²⁵

Member generics have a special sub-group, in which what is general and typical is related to more than one member of the class in question and, therefore, the expression has to be plural, as shown in [1]:

- [1a] If you wanted something truly outre, how about ‘Pigeons’? Tower Hamlets does an evening class in pigeons (they mate for life, by the way). (*The Sunday Times* 24/9/95)
- [1b] I think the reason actors *divorce* so easily is really very ordinary. (*The Sunday Times* 8 Oct., 95)
- [1c] Why should lions live by egalitarian rules when most other social creatures do not? Dr. Packer suggests that lions are simply too deadly and well-armed to manage otherwise. (*International Herald Tribune* 4/20/95)
- [1d] The kidneys are the body’s purification unit - a filtering system that cleanses the bloodstream of waste products. (GID: ‘kidney’)

In [1d], for example, the plural form is naturally used because usually a pair of kidneys in a body forms a filtering system.

When a noncount NP is used in such a context, the effect of a collective predicate disappears, as in [2a], as opposed to the case in [2b].

- [2a] Water put into wine or the like, does immediately *disperse* itself all over them. (OED (2nd edn.): 1665 Hooke Microgr. 16)
- [2b] elephants *disperse* when shot at (borrowed from Smith 1975)

6.1.2.4 member generics in the complement position:

In the literature on generics, two types of expressions in the complement (verbal or prepositional) position²⁶ have been compared. Those of Type I in [1] are regarded as ‘generic’ or ‘kind-denoting’, as opposed to those of Type II in [2], which are not:

[1a] Betty hates actresses. (from Declerck 1991a)

[1b] John hates cigarettes. (from Krifka et al. 1995, 3.2)

[2a] Jenny personally knows actresses. (from Declerck 1991a)

[2b] Mary smokes cigarettes. (from Krifka et al. 1995, 3.2)

Declerck’s explanation of this contrast is that as regards the referent of the underlined NP in [2a], ‘all we know is that it is a pragmatically restricted set’. As for the referent of the underlined NP in [1a], “‘all actresses’” is suggested here because the Maximal-Set Principle leads us to interpret “‘actresses’” as referring to the generic set without there being anything in the context to cancel this interpretation’. Krifka et al. (1995, 3.2) gave two tests to distinguish the two groups. One is that sentences of Type I ‘can be put into the passive without changing their truth conditions’²⁷ while those of Type II cannot.

In fact, the first test can also be analysed in terms of universal quantification:

[1a’] is acceptable while [2a’] is hardly believable.

[1a’] Betty hates all *x*s / any *x* who is an actress.

[2a’] Jenny personally knows all *x*s / any *x* who is an actress.

The other is that the object NP in [1b] ‘cannot be replaced by subordinate kinds *salva implicazione*’ while the one in [2b] can.

The second test is taken from Lawler (cf. 1972:9 and his Note 13), where he reported that psychologists noted the following puzzle as early as 1963: while the entailment sounds valid in [3a] it is blocked in [3b].

[3a] The Gwamba-Mamba eat *salmon* \Rightarrow The Gwamba-Mamba eat *fish*

[3b] The Gwamba-Mamba like *salmon* $X\Rightarrow$ The Gwamba-Mamba like *fish*

[' $X\Rightarrow$ ' indicates that the entailment is blocked]

Researchers have suggested various answers to this problem. Laca (1990:26f) held that the lexical content is a contextual factor²⁸ but 'the information structure of the statement plays at least an equally important role'. In fact, the puzzle can be accounted for in terms of the representational referent of the expressions in question.

In order to crack the puzzle we have to examine the nature of the representational referent for the italicised expression in [3a] and [3b] carefully. If we are consistent with the same representational referent in these utterances, the puzzle vanishes. That is, the puzzle is a cognitive illusion because if we keep to one and the same possible referent of 'salmon', then either both inferences in [3a] and [3b] are blocked or neither is blocked. For example, if we regard the referent of 'salmon' as 'one sub-class of fish' and the referent of 'fish' as 'all sub-classes of fish', then both the inference in [3a] and in [3b] are blocked.

[3a'] The Gwamba-Mamba eat one sub-class of fish, *salmon* $X\Rightarrow$ The Gwamba-Mamba eat all kinds of fish.

[3b'] The Gwamba-Mamba like one sub-class of fish, *salmon* $X\Rightarrow$ The Gwamba-Mamba like all kinds of fish.

In the same way, if we take the referent of 'fish' in both cases as 'one particular sub-class of fish', then neither of the two inferences in [3a] and [3b] is blocked:

[3a''] The Gwamba-Mamba eat one sub-class of fish, *salmon* \Rightarrow The Gwamba-Mamba eat one particular sub-class of fish.

[3b''] The Gwamba-Mamba like one sub-class of fish, *salmon* \Rightarrow The Gwamba-Mamba like one particular sub-class of fish.

So logically speaking, there is no puzzle: 'The Gwamba-Mamba like *salmon*' doesn't necessarily mean 'The Gwamba-Mamba like fish other than salmon', nor does 'The Gwamba-Mamba eat *salmon*' necessarily mean 'The Gwamba-Mamba eat fish other than salmon'. The reason why the inference is blocked in [3b] equally applies to [3a].

But still, how do we account for Lawler's assertion that 'it seems to be the case that 'fish' in (69) [3a here] means only 'some fish' (or 'some kind of fish', etc.), while in (70) [3b here] means 'all fish' (or 'all kinds of fish')' (Lawler 1972:9)? It is still part of the cognitive illusion²⁹. Because we process expressions in the context partly formed by the conceptual content of other expressions in the same utterance, the difference brought about by the different assumptions associated with 'eat' and 'like' respectively caused the different ways in which we assign reference to their object 'salmon'. For example, with the verb 'eat', one of the easiest assumptions to retrieve is 'The agent eats instances of the referent of the object, e.g. pieces of salmon'. And one of the most accessible assumptions about the relation between SALMON and FISH is 'Salmon is a kind of fish', from which it is not difficult to derive 'Instances of salmon are also instances of fish'. The presence of all these contextual implications explains why it is so easy for people to accept the inference in [3a].

In fact, 'Instances of salmon are instances of fish' is a loose version of 'Instances of salmon are instances of a particular kind of fish'. When a loose interpretation, as the one involved in [3a], does not make a difference in our achieving our cognitive goal, it is preferred because of its less processing cost and will be tolerated. So we can easily accept [3a] in a neutral context. When we are pushed to think that the inference is being blocked in [3b], we have to spend more processing

effort on ‘The Gwamba-Mamba like fish’. Then driven by our pursuit of optimal relevance, we try to derive more effects from it. Thus, we tighten it to the more accurate interpretation. Such an interpretation is then, as shown above, equally compatible to the interpretation of ‘The Gwamba-Mamba eat fish’ in terms of the exact referent of ‘fish’. When the more accurate version makes a difference, the loose one will not be tolerated. For example, in a restaurant where different fish are marked as different dishes at different prices, when you have ordered turbot, the waiter cannot use the argument in [3a] to persuade you to accept mackerel as a replacement without compensation.

Declerck’s argument for the two types of verbs clashes with Krifka et al.’s more formal approach. According to Declerck’s argument, verbs like ‘protect’ or ‘treat’ should be grouped with ‘eat’ or ‘grow’. But the following examples show that they behave like ‘hate’ in the entailment test:

- [4a] Nearly all of the governments of countries with tiger populations have passed laws to protect tigers or outlaw hunting. (*The Independent* 14/9/95)
- [4b] Now I treat women like sex objects I just get pleasure out of them (S1A-072-204)

We certainly cannot replace ‘tigers’ with ‘animals’ in [4a] nor can we substitute ‘humans’ for ‘women’ in [4b] without changing the truth conditions of these two utterances.

The following two examples will also prove to be difficult for Declerck’s account. There is no clear criterion for us to decide whether the referent of ‘chromosomes’ in [5a] is ‘a pragmatically restricted set’ or not. Nor can we apply either Declerck’s or Krifka et al.’s test to negative cases like [5b] and [5c].

- [5a] In the Cytogenetics Section, researchers study *chromosomes*, which are located in the nucleus of every cell of a plant (and of other living things). (W2B-030-107 - *Views of Kew*)
- [5b] we don't use *ammonites* (S1B-006-59)
- [5c] I do not read *books* (S1B-046-43)

Based on the above discussion, I argue that there is no principled difference between the alleged two groups of verbs. The actual quantification of the referent depends on the context and purpose of the utterance. For example, the referent of the underlined expression in [4a] is legally universally quantified if we acknowledge the authority of the law. On the other hand, if we thought [5c] was only a whimsical comment, then we didn't have to worry too much about the quantification of the referent of the NP 'books'.

Such expressions are relatively low on the scale of being member generic because, though they may be universally quantified, the universally quantified expression and the predicated property, e.g. 'cigarettes' and 'Mary smokes cigarettes', doesn't have a relation as strong as the one perceived between, say, 'tigers' and 'are dangerous animals'.

6.1.2.5 member generics with overt quantifiers

In addition to member generics with implicit quantification, which have been dealt with in the previous sections, member generics with explicit forms of quantification will be discussed in this section.

Overt quantifiers vary in their forms. First, determiners such as 'all', 'most' and 'no'³⁰ can be used to quantify the noun phrase. Second, adverbials like 'typically' and 'characteristically' can be used to quantify the verb phrase. Third, auxiliaries like 'tend to' and modals like 'may' and 'can' are used to express tendency or generalization.

6.1.2.5.a quantification of noun phrases

Amount words at and near both ends of the scale of amount can be used in member generics, expressing absolute and inclusive or loosely generalizing meaning. Compared with other member generic expressions, those with amount words are usually used to convey more precise quantification the speaker intends to make, or to emphasise the speaker's point in cases of expressions with 'all' or 'no'³¹. For example,

- [1a] We believe that all people have a right to an adult education service which is free from discrimination on the grounds of age culture disability employment status gender HIV status language material status race religion sexuality or social class (S2B-044-94)
- [1b] The whole purpose of a clinical trial is to advance knowledge and therefore it is important that all randomised clinical trials should be published irrespective of their results (S2A-033-28)
- [1c] Indeed, isolation is a condition endured by many, if not all humans. (W1A-010-7)
- [1d] Firstly there is generalization where for example because a dog, one dog, bit you once, one is afraid of all dogs. (W1A-017-100)
- [1e] All cheese begins as milk - mostly cows' milk, although it can be the milk of ewes or goats - and it was being eaten about 3000 B.C. in the ancient civilisation of Sumer, Mesopotamia. ('cheese', Reader's Digest Great Illustrated Dictionary)
- [1f] In general, each plant species has a certain number of chromosomes (although there are exceptions), and these, in turn, have a characteristic appearance in terms of shape, size, position of constrictions and light and dark bands (seen after staining). (W2B-030-110)
- [1g] In the Cytogenetics Section, researchers study chromosomes, which are located in the nucleus of every cell of a plant (and of other living things). (W2B-030-107)

- [1h] Every woman will know what I mean, and no man. I say that I loathe the phoniness and self-regard of an attractive, successful woman, and the man to whom I say it looks puzzled. Then light breaks, and he smiles, ‘Oh, I understand. You’re jealous.’ (*The Sunday Times* 19/11/95)
- [1i] Not every woman is marriageable: some are ruled out by incest restrictions; others by virtue of religion, social class, ethnicity and (above all) by age, since almost universally the bride is expected to be younger than her husband. (*The Cambridge Encyclopedia: ‘marriage’*)
- [1j] The rule of thumb for any Westerner in Moscow was that any Russian who talks doesn’t know, and any Russian who knows doesn’t talk. (*The Wire*, by N. Gowing, London: Hutchison, 1988)
- [1k] Most libraries will expect an application form to be completed. (W2D-006-122)
- [1l] A child who has had one febrile fit is at risk of having another whenever his temperature starts to rise rapidly but most children grow out of their susceptibility by the age of three. (W2B-023-82)
- [1m] If the wind increases still further it is time to reduce the pressure by easing out the mainsheet, and if it is so strong that you have to do this continually it is time to reef, though few dinghies sail well reefed down. (SEU-W-10-02-99)
- [1n] No animals must ever kill any other animal. (*Animal Farm* by George Orwell, London: Penguin)

It is worth noticing that explicit generics include quantifiers with negative meaning such as ‘few’ in [1m]. Such examples belong to member generics because they are generalisations over the members of the class in question, not just about any random sub-set of the members. When people judge the truth of such statements, they have to consider the rest of the cases in the class. In [1m], the property of ‘sailing well reefed down’ is attributed to only a small number of members of the class of dinghies, but the rest of the dinghy class will also be considered in terms of the property being mentioned.

Pragmatic inference can considerably narrow down the meaning of these explicit universal quantifiers. This happens often to ‘each’ and ‘every’ and sometimes to ‘all’, as shown in [2]:

- [2a] All hawks generally are manned after one manner, that is to say, by watching and keeping them from sleep, by a continual carrying of them upon your fist, and by a most familiar stroking and playing with them, with the wing of a dead fowl or such like, and by often gazing and looking of them in the face, with a loving and gentle countenance, and so making them acquainted with the man. (*Country Pursuits* by G. Markham, 1615, from ‘The Taming of the Shrew’, OUP 1990)
- [2b] There are different types of machine-milking systems in use in different parts of the world , but in general they all involve the worker driving the cow into a milking parlour where it is confined in a stall , while he cleans the teats , usually by wiping with a cloth , and attaches the cluster of teatcups to the cow ‘s udder. Each teatcup is attached to a length of flexible hose through which vacuum is applied to the teatcup to hold it on the udder and to extract the milk. (W2A-033-12)
- [2c] (b) Every student is allocated a tutor , who will advise in the selection of courses and act throughout the session as supervisor. (W2D-007-70)

Our beliefs would prevent us from assigning ‘all the members of the class of hawks’ to ‘all hawks’ in [2a] because we know there are many hawks which were and are not manned, as opposed to the reference assignment of ‘the right of all people’ in [1a], in which the speaker intends to mean ‘everybody and anybody’ without exception. So the interpretation of ‘all hawks’ in [2a] is ‘all the hawks which are manned’, which is a small sub-set of the class of hawks. In [2b], the referent of ‘each teatcup’ is restricted to the universe of discourse - the teatcups in the milking system being currently discussed. And in [2c] ‘every student’ means ‘every student in the university in which this regulation is applied’.

The quantifier of a noun can also be an adjective like ‘average’ or ‘typical’, as shown in [3] (cf. the class generic counterparts in Type I, 6.2.2):

- [3a] The average actor or actress spends more than half his or her life waddling around the kitchen in a shellsuit, depressed, incommunicative, half-alive and waiting for The Call. (*The Sunday Times* 22/10/95)
- [3b] First of all uhm as a result of the small size of these cells and the average cell is generally thought to be probably somewhere between ten and twenty microns in diameter . . . (S2A-051-36)
- [3c] Is the typical Frenchwoman really best compared to a doormat on heat? (*Evening Standard* 10/28/91)
- [3d] A typical Eldorado weighed about 4600lb (2086kg). (W2B-037-67)

6.1.2.5.b adverbials

Some adverbs and propositional phrases can also be interpreted as quantifying the proposition expressed by the utterance in which they appear. The function of such adverbials is to make the speaker’s intended generalisation more forceful (e.g. [1h]) or tentative (e.g. [1a-g]), depending on the two types of adverbials used. A variety of these expressions are shown in [1]:

- [1a] So, then, the use of the indicative form of a verb *characteristically* involves the introduction of a term in such a way as to show that what it is introduced into is a proposition. (SEU-W-09-01-134)
- [1b] Peat is a type of humus - soil scientists call it *mor* humus as opposed to *mull* humus - which is *normally* produced when vegetable matter decays. (W2D-011-10)
- [1c] the Romans were not *normally* interested in this quicker death as that Christ underwent (S2B-028-52)
- [1d] Public transport is *generally* safe. (W2D-009-3)

- [1e] we have studies by psychologists about how jurors make up their mind suggesting that jurors *typically* decide by constructing or testing or testing the alternative the plausibility of alternative stories (S2A-044-63)
- [1f] *In general* an organic field spends two to four years as grass being grazed by livestock. (W2B-027-71)
- [1g] A country like the United Kingdom where every person will eat *on average* 1 1/2 - 3 times as much, consume 40 times the amount of fossil fuel and industrial products, and use 100 times as many cars, items of household equipment and paper as a person born in one of the less developed countries of the world can ill afford to point the finger of accusation at such countries on the grounds that their population growth is too high. (W2B-018-71)
- [1h] people *always* need something more than just the material comforts of life (S2B-027-157)

6.1.2.5.c quantifier as part of the verb phrase

Quantifiers can be embedded in the verb phrase in the form of auxiliaries such as ‘tend to’ or modals like ‘can’ and ‘may’. These auxiliaries and modals can be used as a hedge to soften the speaker’s commitment to the certainty of the statement she is making³², as opposed to categorical assertions³³.

The function of the catenative ‘tend to’ (cf. Quirk et al. 1985:146) is similar to adverbials like ‘characteristically’ and ‘typically’, as shown in [1]:

- [1a] Feeder flights, however, *tend to* use small aircraft, and small aircraft are more vulnerable to exotic increases in landing charges at Heathrow. (W2E-008-28)
- [1b] Organic farmers *tend to* choose cereal varieties with long straw and sow them at seed rates slightly higher than normal. (W2B-027-105)
- [1c] ... adult Argentines *tend to* die of the diseases of an affluent society like the United States or Europe. (W2A-019-59)

- [1d] ‘Those plants that are most attractive *tend to* mate with other very attractive orchids,’ said Dr. L. Anders Nilsson of the University of Uppsala, Sweden ... ‘I read about one investigation that concluded that wealthy American women *tended to* marry wealthy American men. Well, you see the same syndrome in orchids.’ (*International Herald Tribune* 24-25, December 92)

Both ‘can’ and ‘may’ can be used to express ‘root possibility’ (cf. Coates 1995:147) or ‘theoretical possibility’ (cf. Leech & Svartvik 1994:145f)³⁴, which is the possibility associated with a tentative generic statement. *Can* appears in both informal, as in [2a] - [2b], and formal, as in [2c] - [2e], texts.

- [2a] Rat bites *can* be very poisonous. (SEU-W.16-1.294 - prose fiction)
- [2b] I am a very strong swimmer but even the most confident swimmers *can* drown can’t they my dear? (W1B-006-21 - private correspondence)³⁵
- [2c] Do bear in mind that unit values, and their income, *can* fall as well as rise. (W1B-022-90 - business correspondence)
- [2d] Within the Upper Dinantian sequence of mid-Wales, and elsewhere in the UK, it is not uncommon to find cycles missing in proximal areas or unrecognizable in more distal areas. Problems of stratigraphic correlation *can* result. (W2A-023-93f - Printed: learned: natural sciences)
- [2e] Drowning of a rimmed shelf *can* lead to the formation of a distally-steepened ramp. (W2A-023-52 - Printed: learned: natural sciences)

Coates claimed that in expressing ‘permission’ and ‘possibility’, ‘can’ and ‘may’ ‘are not in free variation but that MAY is restricted to expressing these meanings in formal texts’ (1983:107). A contrast of relatively formal [3a] vs. relatively informal [3b] and [3c] has been found in ICE-GB:

- [3a] Domestic hot water *may* be supplied in two ways, directly or indirectly. (W2D-012-85 - Printed: skills/hobbies)

- [3b] Damage from closed head injuries *can* be incurred in a variety of ways. (W1A-004-14 - students' examination essay)
- [3c] Statistical data *can* be portrayed in many different ways - as just lists of figures, or diagrams or if a spatial element is involved as a map. (W1A-006-39 - students' examination essay)

Though the *may* expressing theoretical possibility appears in formal texts, as shown in [4], it is also found in less formal texts written for a popular audience, as shown in [5]:

- [4a] Vehicle Licence Stamps in units of 5 *may* be bought at any post office and used in payment or part payment for a vehicle licence. (W2D-010-85 - Printed: administrative/regulatory)
- [4b] Licences *may* be bought for 6 or 12 calendar months, or, if the vehicle is being registered for the first time in Great Britain it is now also possible to license it for part of the month in which it is first registered, plus 6 or 12 months. (ICE-GB-W2D-010-77 - Printed: administrative/regulatory)
- [4c] Think about the impact your clothes *may* have on others. (W2D-009-65 - Printed: administrative/regulatory)
- [5a] Raw manure will adversely affect plants in a number of ways: first, there will be a lot of free nitrogen which *may* burn the roots of seedlings, and cause carrots or parsnips to fork. (W2D-011-78 - Printed: skills/hobbies, 'How does your garden grow?')
- [5b] Be careful not to swing at the volley if you use two hands. The hands must be close together on the grip. Beginners *may* get more strength on the backhand volley with two hands. (W2D-013-80 - Printed: skills/hobbies, 'Know about Tennis')
- [5c] Set plays come as a by-product of positive play which puts pressure on opponents. For example, a corner *may* result from a deflected shot at goal, or a

free kick from a beaten defender 's despairing challenge. (W2D-015-8&9 - Printed: skills/hobbies, 'The Winning Formula')

- [5d] A good fresh maggot will have a black feed spot visible through the skin. Maggots without this *may* be quite old. (W2D-017-67 - Printed: skills/hobbies, 'An Introduction to River Fishing')

Evidence from ICE-GB shows that though the *may* expressing theoretical possibility doesn't appear in very informal English, for example, daily conversations, it is often used in neutral style (cf. Quirk et al. 1985:25ff) as well as in formal contexts.

The semi-auxiliary 'be likely to' (cf. Quirk et al. 1985:143) should also be included in this category because it can be interpreted as a quantifier, as shown in [6]:

- [6] An adult who has been abused , in whatever way, is *likely* to let that experience influence his or her own parenting practices, and the way in which the practices of other people are viewed. A female who has been sexually abused by babysitters is *likely* to have particular views about leaving her own children with babysitters. She might refuse to allow it , and never trust anyone with her children. (W2B-017-81ff)

6.2 class generics

6.2.1 characteristics of class generics

The central cases of class generics are about a class of entities as a whole. I also regard cases with collective or average properties across members of a class as class generic. Referents of class generic expressions are mental representations with class-level properties, which may or may not have real-world counterparts. Similar to singular reference³⁶, class generics do not involve quantification of the relevant members of a class and this feature separates them distinctively from member

generics, though for historical reasons they are both labelled as generic. In short, class generics include neither properties which can be possessed by an individual member of a class nor generalisations across members of a class.

6.2.2 clues triggering the class generic interpretation

The clues which may be used to trigger a class generic interpretation are usually grouped into two main types: co-textual and lexical³⁷. In fact, the so-called lexical clues all lead to a sub-class interpretation, which I therefore deal with in 6.3. Co-textual clues are information linguistically expressed in the discourse, such as information expressed in the predicate of the sentence ‘The panda is an endangered species’. Contextual clues can be drawn from many parts of an utterance or neighbouring utterances. The clues can be grouped into several basic categories³⁸ relating to the description³⁹ of a class:

Type A: the creation of a class

Type B: the extinction of a class

Type C: the existence of a class

Type D: the taxonomic status of a class

Type E: the development of a class

Type F: the variations within a class

Type G: the epitome of a class

Type H: the distribution of a class

Type I: the mean property across members of a class

Type J: the collective attribute of the members of a class

Type K: the concept of a class

Type L: the concerned sector of a class

Type A: the creation of a class:

The most prototypical of the clues for creation is the word ‘invent’ and its derivatives:

- [1a] Shortly after Alexander Graham Bell *invented* the telephone people started to wonder if it was possible to send pictures over wires. (W2B-034-10)
- [1b] The potato was probably *first cultivated* as a crop in the Peruvian and Bolivian Andes. ('Vegetables and Vegetable Farming', *Encyclopedia Britannica* 15th edn.)
- [1c] Before pencils were *invented*, thin rods of silver, zinc or lead were used for drawing. (W2D-016-5)
- [1d] Avocados *originated* in Mexico, ... (*The Independent* 7/16/94)
- [1e] The idea that Man *was created* - rather than *evolved* - is now open to scientific test: and although creationism is still supported by millions the test proves it wrong. (*The language of the genes*, by S. Jones, HarperCollins, 1993, p. xi)
- [1f] it might be something that would interest some and not others such as you know the *invention* of injection moulding (S2A-040-22)
- [1g] George Cave, which is usually at its best in mid-August, was *raised* by Mr Cave in Dovercourt, near Harwich, Essex, in 1923. (*The Independent* 27/8/94)

The referring expression in this environment can be a singular definite ([1a] and [1b]), a plural indefinite ([1c] and [1d]), a bare singular ([1e]), a noncount noun ([1f]) and a proper noun ([1g]).

Type B: the extinction of a class:

The adjective 'extinct' and the verb 'die out' and their derivatives typically provide such clues:

- [2a] The blue whale, the largest creature on Earth, has been hunted to near *extinction*, in the Southern Hemisphere. (*The Times*, 5/25/94)
- [2b] Systematic biologists may *die out* faster than the species they are trying to list, label and fit into the evolutionary scheme of things. (*New Scientists* 8 Feb, 1992)

- [2c] uh to give you some idea of the age of uh the fossils that I look at the dinosaurs *died out* at the top of the Cretaceous here sixty-five million years ago which is in fact a hundred and eighty million years after the little beasties that I look at *died out* (S2A-046-12)
- [2d] sadly Old Hushwing is *no longer part of the great meadows of our countryside* (S2B-031-80)
- [2e] The whole animal Creation has been *decimated again and again*. (Lyell: *Principle of Geology*, II. iii. xlii. 466, *OED*)

The nominals which can occur in this environment include singular definite ([2a] and [2e]), plural indefinite ([2b]), plural definite (the first underlined NP in [2c]), noncount definite ([2e]), proper noun ([2d]), and esphora (the second underlined NP in [2c]). Noncount NPs may also be used in this category⁴⁰.

Type C: the existence of a class

Existence or the perception of existence is another primary aspect of a class, which can be expressed typically by the italicised words in the following examples:

- [3a] Cars *exist* to be driven, and cameras to take pictures, and if they don't fulfill these functions there's no point in them. (COBUILD on CD-ROM - magazine)
- [3b] Their existence confirmed that *there were* specific lymphocytes that would recognise cancer antigens on human cancers - the very thing many immunologists had said did not exist. (COBUILD on CD-ROM - newspaper)
- [3c] It's interesting that our legislation nowhere in legislation will you find a political party mentioned *They don't exist* As far as legislation is concerned *they don't exist* (S1B-011-49 ff)
- [3d] Nerve cells do not *exist* in isolation but are grouped together in bundles lying in a connective tissue stroma to form peripheral nerves. (W2A-026-10)⁴¹

- [3e] Collared doves have spread west across Europe to colonise most of Britain. They were *unknown* here only a few decades ago. (*The Independent*, Sept. 5, 94)
- [3f] Yellow-faced Parrotlets were *unknown* in aviculture until 1976, when a few became available in Britain and elsewhere in Europe. (COBUILD on CD-ROM - magazine)
- [3g] The St. Helen giant earwig: discovered in 1789, was last seen in 1967. (*The Times* Jan. 3, 96)

Type D: the taxonomic status of a class⁴²

Indications in the co-text of the taxonomic status and such like of the referent can also provoke a class generic interpretation of a referring expression. Singular definites ([4a] - [4e]), plural indefinites ([4f] - [4I]) and a bare singular ([4j]) can be found in such environment. Nationality nouns and adjectives ([4k]) and proper nouns ([4l]) are also common⁴³:

- [4a] The great white shark - the ultimate marine predator and knife-toothed subject of movies and nightmares alike - may be one of the most threatened *as a species*. (*International Herald Tribune* Dec. 10, 92)
- [4b] Take the mountain and the brown hare, two closely related *mammals*. Mountain hares, which often turn white in winter, don't usually inhabit the lowlands, where the brown hare thrives.
- In parts of Scotland, though, their ranges overlap. Nevertheless, wild hybrids between the two occur only rarely. So the two *species* obviously remain faithful to their own kind. (*The Independent* July 4, 94)
- [4e] The two *types* of oyster eaten in France are the plates or flat oyster - of which the prized belons of Brittany are the best known and most expensive - and the crinkle-shelled, elongated creuses . . . (*The Times* 4/15/94)

- [4f] The zebra is *the typical wild horse of Africa*. (*Woburn Wild Animal Kingdom*, Norwich: Jarrold & Sons 1986)
- [4f] Women are not a vanishing *tribe* whose obscure interests must be brought to the attention of the world with an annual promotion. (*The Times* March 10, 92)
- [4g] ‘. . . Pharmacists are a highly trained, very useful *bunch* of people,’ says Professor David Marsland, of the department of health studies at the West London Institute
. . . (*The Times* Dec. 2, 91)
- [4h] Broadly speaking, melons *fall into three categories*: cantaloup, musk-melons (netted or nutmeg melons) and winter melons. (*The Independent* 13/8/94)
- [4i] Squids are *cephalopods*, close cousins of octopuses and cuttlefish and distant relations of clams and oysters. (*International Herald Tribune* Sept. 1, 94)
- [4j] Publishers’ catalogues, designed to seduce booksellers and to scare competitors, are *a minor art form*. (*The Daily Telegraph* 12/30/95)
- [4k] Having spent five programmes trying to show how close man is to *other animals*, Desmond Morris wraps up his series *The Human Animal* ... by emphasising the differences. (*The Times* 8/27/94)
- [4l] There were *Celts* of course in the British Isles the ancient Britons and the ancient Irish (S2A-022-11)

[5a] and [5b] are examples of the extension of this kind of clues in that vitamins and soldiers are considered as one unit respectively.

- [5a] Vitamins are *a multi-million pound industry*, but no one knows how useful they are. (*The Independent* 14 July 1995)
- [5b] Clausewitz’s greatest lesson for my profession was that the soldier, for all his patriotism, valour and skill, *forms just one leg of a triad*. Without the government and the people, the enterprise cannot stand. (from *A Soldier’s Way*, by General Colin Powell, Hutchinson)

Type E: the development of a class:

The word 'evolve' and such like can provide clues to the development of a class:

- [6a] The plight of the South China tiger, native to that country, is more desperate still. . . This is the subspecies thought to be most similar to the ancestral tiger, which *evolved in China about a million years ago and spread through Asia*. (The Independent 14/9/95)
- [6b] if the hard ecu *evolved* into much greater use that would be a decision for future parliaments and future generations (S1B-053-60)
- [6c] The shark, that mythic terror of the deep, has been *top predator of the seas for nearly 400 million years*. (*International Herald Tribune* Dec. 10, 92)
- [6d] But what of the *progress* of the nude elsewhere? As a subject for painting it is in decline, with the clammy flesh of Lucian Freud and the gargantuan self-portraits of Jenny Saville its best, if depressing, examples. (*The Sunday Times* 22/10/95)
- [6e] The amount of research that has gone into this book is prodigious and there is no doubting its value as a work of reference on British prime ministers. Yet it would be a shame if its serious purpose were to undermine its true merit - as political entertainment. Prime ministers, unlike MPs, *have not yet been around 300 years*. (*The Sunday Times* 27/8/95)⁴⁴
- [6f] Americans *are becoming more sophisticated about art*, and big museums *are evolving into a blend of playground, cafe and fair*, making the experience easy and comfortable. (*International Herald Tribune* Aug. 14, 1995)
- [6g] We've seen our great piles of bricks built up while the homeless *grow* (S2B-036-95)

[6a] - [6d] are examples of singular definites, [6e] and [6f], those of plural indefinites and [6g], that of a nominal adjective.

Type F: the variations within a class:

A class of things can be realised by a range of specimens. If the whole range of variations is related to a referring expression, then the expression is taken to represent a class:

- [7a] Squids *range in length* from less than an inch to the 70 or so feet of the giant, and perhaps longer. (*International Herald Tribune* Sept. 1, 94)
- [7b] The wildebeest is an antelope and despite its clumsy appearance is one of the swiftest animals on the African veld. *It grazes in large herds and reaches a maximum weight of 600 pounds.* (*Woburn Wild Animal Kingdom*, Norwich: Jarrold & Sons 1986)
- [7c] The whale shark *grows to 40 feet long or more and can weigh 20 tons* and it not only the largest of sharks but the largest of all fish. (*Reader's Digest Family Guide to Nature*, London, 1984, p. 198)⁴⁵
- [7d] Like boxers, tenors *come in all shapes and sizes* and their voices are categorized as lyric, dramatic and heroic. (*The Sunday Times* 27/8/95)
- [7e] Though very poorly known, and often used as a symbol of humanity's ignorance of the deep, the giant squid already holds a number of records. It is believed to be the largest of all the world's creatures that have no backbones, growing up to lengths of 60 or 70 feet. Its huge eyes are the largest in the animal kingdom, sometimes the size of dinner plates. (*International Herald Tribune* 2/15/96)

Type G: the epitome of a class⁴⁶

In this category, some specimens of a class are taken as the epitome of the class: often singular definites are most commonly used on such an occasion.

- [8a] After many years of *exhibiting* the African elephant at Woburn a change of policy has now introduced the Asian elephant. (*Woburn Wild Animal Kingdom*, Norwich: Jarrold & Sons 1986)
- [8b] The enormous lammergeier, half eagle, half vulture, has been seen again in the national park after being locally extinct for a century, and golden eagles are widespread. - (COBUILD on CD-ROM - newspaper)
- [8c] It was the British who sent the turkey back to America as a table bird, on the ships of the early settlers. (*The Times* 12/24/93)
- [8d] Another Australian icon, the flight emu, is to *hit* America's dinner tables, a hop behind the kangaroo, after clearance for consumption by the US Food and Drugs Administration. (*The Times* 4/30/94)
- [8e] The common dolphin *Delphinus delphis* and the finless porpoise *Neophocaena phocaenoides* also *occur* in the Gulf, but in very much smaller numbers. (W2B-029)
- [8f] Even the giant squid, the largest and most legendary of the race, reaching lengths of 70 feet (20 meters), *is being tracked* more closely than in the past. (*International Herald Tribune* Sept. 1, 94)
- [8g] The flightless takahe, one of the ten most endangered bird species in the world, *will be released* at three sites on Tiritiri Matangi. (*The Times* 4/30/94)

In contrast, the underlined NPs in [9a] and [9b] can be preceded by 'some' without changing its meaning, so they are regarded as referring to a specific sub-set of the class concerned and thus not class generic.

- [9a] Fans were bought back as souvenirs from the Grand Tour, painted with scenes of Venetian canals or the Swiss Alps. (*The Observer* July 11, 94)
- [9b] The battle of the gamebirds began 25 years ago when breeders imported chukar partridges from Cyprus via a farm in Italy, crossed them with red-legged partridges, to which they are closely related, and released the hybrids to boost the number available for shooting. (*The Times* 4/20/94)

On the other hand, though the underlined NPs in [10] are plural, the present tense of the verbs 'are returning' and 'nest' helps us to reach a generic rather than specific interpretation of the underlined expressions because the behaviour of a class of birds is being described.

[10] Gannets are returning to the cliffs and rocky islets where they nest. (*The Times*, Feb. 25 1995)

Type H: the distribution of a class:

The distribution of members of a class is not a property of an individual and therefore I include this category in class generics:

- [11a] The baiji may number just a few dozen. ('The creatures unlikely to survive another year of attrition', *The Times* Jan. 3, 96)
- [11b] Straw-burning fires were *widespread* over the cereal-growing areas of England (W2A-029-33)
- [11c] Bottoms are *everywhere* these days. Getting on to buses, surging out of taxis, swinging round supermarkets. Love them or hate them, there is no escaping them. (*The Independent* 30/5/92)
- [11d] Corncrakes are *in decline* all over Europe and are close to extinction in Britain. (*The Times* 10/29/95)
- [11e] The reef rim provides protection for a central lagoon, 6-18 m deep, where patch reefs are *numerous*. (W2A-023-12)
- [11f] The tiger is the largest and strongest of the big cats and is *widely distributed in Asia from Persia to China and from India and the East Indies to Siberia and Manchuria*. (*Woburn Wild Animal Kingdom*, Norwich: Jarrold & Sons 1986)
- [11g] FEW SERVICES are as *widespread* as the public library. (COBUILD on CD-ROM - newspaper)

- [11h] Susan Mayor can be credited with bringing back the *popularity* of the fan almost single-handedly. (*The Observer*, July 11,93)
- [11i] fox I suppose would take a sitting hen but I mean they're so *scarce* compared with the abundant red grouse around that they're far more likely to find those (SEU-S-10-08-178)

Another group of data of this category may be able to take singular indefinites as subjects, as shown in [12b]:

- [12a] Modern drowned platforms are *common* in the Pacific and Indian Oceans, where atolls and isolated platforms have sunk below the photic zone, largely as a result of thermal subsidence following a cessation of volcanicity. (W2A-023-55)
- [12b] An aura is *common*, in which the patient may experience upper abdominal discomfort, nausea, giddiness, hallucinations of various types (hearing, smelling, tasting or seeing things that aren't there) or the 'déjà vu' phenomenon. (W2B-023-60)
- [12c] THE Government's plans to extend its rent-to-mortgage scheme to council tenants will have an adverse effect on rural areas where housing opportunities are already *scarce*, it is claimed today. (W2C-015-25)
- [12d] What a magnificent bird the Peregrine is, and how sad that it is so *scarce*. (COBUILD on CD-ROM - book)
- [12e] Although crime on the railways is *rare*, British Rail knows from its research that many of its customers are sometimes apprehensive, particularly when travelling late in the evening. (W2D-009-134)
- [12f] While some but as yet pretty few women are at last achieving promotion to senior rank senior black officers are *rare* indeed (S2B-037-62)
- [12g] portraits of collectors of works of art weren't *rare* in the Renaissance (SEU-W-01-04-117)
- [12h] Princesses of Wales are actually pretty rare creatures, partly because there have been relatively few Princes of Wales. . . . Most of the few Princes of Wales

either died or came to the throne before marriage was deemed appropriate.
(The Independent 24/11/95)

The class generics of this type are often linked with the plural member generics (cf. 6.1.2.3) because both are said to require ‘plural predicates’ (cf. Declerck 1991:86; 99). However, in the class generic category no quantification of the relevant members of a class is involved. That is, no generalisations are made across members of a class. The difference can be shown by the contrast in the following pair:

[13a] Herrings *move in shoals*

[13b] Straw-burning fires were *widespread* over the cereal-growing areas of England
(W2A-029-33)

Both [13a] and [13b] have so-called ‘plural predicates’. However, in [13a] a generalisation has been made about herrings’ behaviour though it is not necessary that every herring conforms to it. Therefore I classify it as belonging to member generics. By contrast, in [13b] a collective property is attributed to the phenomenon of ‘straw-burning fire’ somewhere; the property can only be established when the number of the instances is above a threshold and cannot be possessed by a single member. Therefore, I classify it as belonging to class generics. The syntactic characteristic of this type is that bare plurals are required as the referring expressions because they match the semantic nature of this type of co-textual clues. For the same reason the bare plural subjects cannot be preceded by the unstressed ‘some’, thus the unacceptability of

[11c’] Some bottoms are everywhere these days . . .

Type I: the mean property across the members of a class⁴⁷

The property noted in this type is the mean calculated across the members of a whole class. Similar to the cases involving predicates like ‘being common’, singular indefinites can also be used in this environment without yielding a sub-class generic interpretation, as shown by [14d]:

- [14a] The average family size in Mexico has fallen from 7.1 children per woman in 1967-69 to 6.2 per woman in 1973-78 to 4 children per woman in 1988. (W2B-018-23)
- [14b] Her clients pay her up to \$750 for sex; the average Russian earns \$30 per month. (*COBUILD on CD-ROM* - magazine)
- [14c] The average Briton has £28,599 in savings and will have more than £43,000 stashed away by the year 2000. (*Evening Standard* 27/12/95)
- [14d] An average London journey of six miles costs \$1.40 (W2C-020-115).
- [14e] The eland is *the largest and heaviest member of the antelope family* and frequents grassy plains in large herds. (*Woburn Wild Animal Kingdom*, Norwich: Jarrold & Sons 1986)
- [14f] There are two species of rhino, the black rhino and the white rhino. The white rhino is *much larger and heavier than its black relative*, and is the second largest land mammal in the world . . . (*Woburn Wild Animal Kingdom*, Norwich: Jarrold & Sons 1986)
- [14g] It has always been agreed that the heavy Calvados drinkers of Normandy, or the distillery workers in Scotland, have *an increased chance* of developing cancer of the oesophagus (gullet); . . . (2/18/93 *The Times*)

The class mean property is different from the member generic property like the ones illustrated in 6.1.2.5.a, which are about characteristics that individual members of the class tend to have. The class mean property can be unrealistic for an individual member, such as ‘6.2 children’ for a family. Or individually many members of a class

don't have the predicated property, e.g. there are many young white rhinos which are smaller than many adult black rhinos.

Type J: the collective attribute of the members of a class⁴⁸

Examples belonging to this category are:

- [15a] The black rhino alone has *slumped from 1000,000 in 1960 to fewer than 2,500 today.* (*The Observer* 1 Oct. 1995)
- [15b] Britons are expected to *spend £17.7 billion eating out this year*, over £1 billion more than last year. (*The Times* 3/18/93)
- [15c] So far, there is no firm evidence that the fall in sperm rates means that western man is actually *becoming less fertile.* (*The Times Saturday Review* 2/27/93)
- [15d] Two in every three adulterers are men (the writer Cécile Abdesselam reports in *The Adventures of the Double Life*), but, where the extramarital affair was once the exclusive preserve of the male, married Frenchwomen are *increasingly likely to be carrying on a dangerous liaison.* (*The Times* Nov. 1, 1995)
- [15e] We all know that marriage is on the rocks. One in three of us who has been down an aisle has also been to see a lawyer. But why is it that actors so resolutely lead the trend? (*The Sunday Times* Oct. 8, 1995)
- [15f] McDowell, who has written about the couture of the British royal women, declares hats 'the most unnatural of all items of clothing; they are the least necessary but the most powerful,' *imparting as they do erotic, sporting, military or religious distinction, and conveying rank, chic, attitude, whimsy, regality.* (*International Herald Tribune* 24 - 25, Dec. 92)
- [15g] Rape cuts across all backgrounds and classes and types, but basically it comes back to the low standing of women in society. (*Evening Standard* 2/13/92)
- [15h] Over the centuries, the collective minds of mathematicians have created their own universe. (*Independent on Sunday* 24/9/95)

In [15e] a trend cannot be reversed by one member of a class. For the same reason, in [15f] any particular hat doesn't usually impart 'erotic, sporting, military or religious distinction' at the same time; hats can only do so collectively.

Type K: the concept of a class⁴⁹

In this category, the referent is treated as a conception of something, which may be shared by members of a community. For example, in western culture, the red rose is taken as a symbol of love.

[16a] This is another design by Mrs Tosie Takahama ... The cat is regarded by many creative folders to be *a very difficult subject* to capture in paper, because its shape is very simple and curved. In the opinion of the author, Mrs Takahama's Cat is the most successful version yet achieved, ... (W2D-019-137)

[16b] The writing of Kenneth Grahame excepted, the mole *has not had a good press* since the death of King William III nearly three centuries ago. (*The Times* Feb. 25 1995)

[16c] Many people will now ditch the red rose - the traditional messenger of love, admiration and sincerity everywhere. (COBUILD on CD-ROM - newspaper)

[16d] It should be emphasised that the current revival is by no means an exclusive female phenomenon. The male bottom, which almost disappeared 20 years ago, has also enjoyed an impressive revival. ('Giving a new definition to the bottom', *The Independent* 30/5/94)

[16e] Women did not always have legs. At least, there are few written records of women having them, not anyway, until the reign of James I when his queen, Anne of Denmark, was fond of drunkenly cavorting in court masques and showing off her lower endowments. A visitor to the court noted: 'I did see that women have legs, a thing I had not known before.' (*Evening Standard* 2/29/92)

- [16f] It is ironic that the fan, most often associated with women, is most prominently used today by a man. The designer Karl Lagerfeld not only constantly flutters coquettishly behind a fan, he uses it as a logo for his own collection. (The Observer, July 11,93)
- [16g] Apples will always be mixed up in my mind with air-raid shelters. (*The Independent* 27/8/94)
- [16h] A gamekeeper will appear before Cromer magistrates tomorrow in the case of the alien partridge, the first such prosecution under the Wildlife and Countryside Act. The battle of the gamebirds began 25 years ago when breeders imported chukar partridges from Cyprus via a farm in Italy, crossed them with red-legged partridges, to which they are closely related, and released the hybrids to boost the number available for shooting. (*The Times* 4/20/94)

Type L: the concerned sector of a class⁵⁰:

This role is exclusively played by referring expressions consisting of nationality words⁵¹. In the following examples, the referents of the underlined expressions vary, from political authorities to various other prominent social sectors, but are not a people as a whole nation or race, as researchers often assume⁵²:

- [17a] Seven years on, the Chinese are suddenly objecting to the plans for the new airport. (W2E-008-50)
- [17b] The Chinese still censor all news of the outside world, but Tibetans are aware of recent events and most express similar views. (*The Times* Dec. 2, 1992)
- [17c] And this is a French Revolutionary satire which tells uh projects as it were the fate of the British government uh if the French were to invade in seventeen ninety-three (S2A-057-90)
- [17d] At that point the French snatched the architectural leadership from the English, and the arrival of Gothic as a dominant force in England had to await the start

of a second great wave of ecclesiastical building which began in the 1170s.
(W2B-003-50)

- [17e] I'm sure the Chancellor will appreciate the anxiety of people in Scotland today to find out the answer to that question given the announcement of further steel closures and further abandonment of North Sea steel markets to the Japanese and the Germans (S1B-052-98)
- [17f] Apparently uhm the Dutch have been exporting Edam cheese in large quantities to Germany but via such exotic routes as Andorra in the Pyrenees and Tanzania in whichever country that lies (S1A-061-313)
- [17g] There were also tensions in mid century when the Anglo-Burgundian conflict upset the Portuguese who were used to dealing in both areas (S2B-043-66)

Apart from nationality adjectives and nationality nouns, proper nouns with similar nature can also be used in this environment:

- [18] The Victorians invented the department store and all the novelties accompanying it, from cafes and conveniences to twice-yearly sales. (*The Times* 2/27/93)

Sometimes the referents of such expressions are the participants of an event and they have become representatives of a certain nation or race. For example, 'the French' means 'the French side' and so on:

- [19a] The French report signs of chemical emissions after their bombing missions against chemical weapons plants (S2B-001-4)
- [19b] The French believe it's been caused by allied attacks on Iraq's chemical weapons facilities (S2B-001-65)
- [19c] The Scots were besieging I think uh Berwick and Edward whoever it was at the time came out to relieve it And they the English formed up on Harraden Hill which is on the it 's the Berwickshire side of Berwick in a star-shaped formation (S1A-065-336f)

6.3 sub-class generics

A sub-class generic interpretation of an NP is the result of a sub-class interpretation (cf. 4.1.8) combining with generic contextual clues. What researchers in this field call ‘taxonomic reading’⁵³ is in fact a mixture of three phenomena:

- i. sub-class member generic
- ii. sub-class class generic and
- iii. non-generic sub-class interpretation

6.3.1 sub-class member generics

When a sub-class interpretation is combined with member generic clues, it is a sub-class member generic:

[1a] Some sharks, including the great white, the mako and the thresher, are *warm-blooded*. (*International Herald Tribune* Dec. 10, 92)

In [1a] the sub-class interpretation of the underlined expressions is provided by the apposition of some expressions with generic referents so that we can infer, for example, that the referent of ‘some sharks’ is a set of different sub-classes of sharks, as opposed to a set of individual sharks of some kind. The member generic interpretation can be inferred from our knowledge about the animal kingdom, such as ‘Being warm-blooded is a property which belongs to individual members of a class’. As opposed to the case in [2] below, in [1a] the predicated property is possessed not directly by members of the referent (i.e. one of the set of sub-classes of sharks), but by a lower-order individual, i.e. a member of a member (= a sub-class) of the referent (= a set of sub-classes) of the underlined expression: e.g. an individual shark of the mako type.

Plural definites may also be used to refer to a set of distinctive sub-classes (cf. Quirk et al. 1985:283), as shown in [2].

- [2] Of the reptiles that dominated life on land during the Mesozoic era, about 250 to 66 million years ago, the dinosaurs (whose Greek-derived name means ‘monstrous lizards’) were the most *successful*. (‘dinosaur’, Reader’s Digest Great Illustrated Dictionary)

In [2] the expression ‘the dinosaurs’ is used to refer to all of the different types of dinosaurs and the predicated property can be possessed by any of them.

The example in [3] has an explicit quantifier (cf. 6.1.2.5.a).

- [3] One of the best of the modern varieties, Discovery, is a cross between a Worcester and a Beauty of Bath. It is hardy but rather slow to start fruiting, and the apples, though pretty to look at, lack the evocative smell of Beauty of Bath. But when the tree does start to fruit, it is generous, for it bears on tips and spurs. Most apples favour one or the other. (*The Independent* 27/8/94)

In [3], the quantifier ‘most’ doesn’t quantify individual members of the class of apples, but sub-classes of apples because ‘most apples’ are used to refer to sub-classes of apples such as Worcester or Beauty of Bath. When people judge the truth of such a statement, they have to take into consideration how many sub-classes of apple have this tendency. On the other hand, the property of ‘favouring one or the other way of bearing fruits’ can be attributed to individual apple trees.

6.3.2 sub-class class generics

When a sub-class interpretation is combined with class generic clues, it is sub-class class generic. A sub-class class generic interpretation can be evoked by co-textual as

well as lexical clues. Lexical clues are information from the descriptive content of the referring expression in question, such as information related to the word ‘species’ or ‘kind’. Such clues may be regarded as a special case of co-textual clues in that the expression is part of the discourse. As I have claimed at the beginning of 6.2.2, the so-called ‘lexical kind-generic’ (cf. Krifka et al. 1995, 1.2) is intrinsically a sub-class interpretation. Because of the generality of these words, when they are used, they are usually used to refer to something lower in order. Except in typology or systematics, ‘a kind’ or ‘the kind’ always means ‘a kind of something’. For example, ‘a kind of birds’ is a sub-class of birds, not a member of the class of ‘kinds’. So when such expressions are used, they are used to refer to a sub-class or sub-classes.

6.3.2.1 lexical clues

The descriptive content of words like ‘species’ is ‘a class of things of some kind’. So in general they don’t have to depend on co-textual clues to be interpreted as being used to refer to classes or sub-classes. In [1a] the underlined expression is used to refer to a particular class. In [1b] some invertebrates were talked about as groups and the word ‘species’ was used to refer to these taxonomic classes. In [1c] and [1d] the words ‘kinds’ and ‘classes’ were used to refer to different groups of birds and bacteria.

- [1a] . . . the cannabis plants one would grow would have the same physical appearance of the stem it’s the fingerprint it’s the characteristic of that species of plant (S2A-068-81ff)
- [1b] Protozoa are plentiful in filters and over 200 species have been identified. (W2A-021-32)
- [1c] We know today that a single hectare of this rich arboreal growth may include a hundred kinds of trees each with its own interdependent fauna and flora. (W2B-028-30)
- [1d] there are several other classes of thermophilical organisms (S2A-034-3)

- [1e] Over the past 25 years Professor Talent has travelled widely, and has noticed dramatic losses of species and genera especially in countries such as India, Pakistan, Nepal and Bangladesh. ‘Each time a warm and cuddly mammal goes down the chute, we don’t just lose the mammal - we lose a whole chain of smaller creatures whose life cycle goes with it.’ (Macquarie University News (Australia), March 1993)
- [1f] Does this work with any type of rice or only this type (S1A-022-84)
- [1g] The optician decides your letter-code by the type of lenses you need, and this also decides the maximum amount of help the voucher will give you to help pay for your glasses. (W2D-001-113)
- [1h] . . . Species are being lost through ignorance. (*The Independent*, Sept. 5, 94)
- [1i] At last there is a real understanding of race, and the ancient and disreputable idea that the peoples of the world are divided into biologically distinct units has gone for ever. (*The language of the genes* by S. Jones, HarperCollins, 1993, p. xi)
- [1j] IN this age of the microchip all sorts of gadgets have been *invented*, such as microwaves , video recorders and fax machines which were supposed to make life easier. (W2E-009-79)
- [1k] Not since the last great auk was clubbed to death by fishermen in 1844 has any European bird species gone extinct. (*The Independent* Sept. 5, 94)
- [1l] Of 9,000 or so kinds of birds known to science, no less than 1,000 are to a varying degree at risk of *extinction*. (W2B-028-16)
- [1m] Well over 8,000 internationally recognised areas for the protection of wildlife have now been established around the world ... None the less, species of plants and animals are *dying out* at a speed that far outstrips the rate of natural extinctions in the fossil record. (*The Independent* Sept. 5, 94)

Lexical clues can be overridden by co-textual clues, as shown by [2]:

- [2] Squids have been thought of as creatures of the ocean’s middle levels, always jetting about or floating in a state of neutral buoyancy. But it turns out that

some species take breaks on the bottom, resting their arms in such a way ... that tubes for breathing and propulsion stay clear of obstructing mud. (*International Herald Tribune* Sept. 1, 94)

Since the predicated property, e.g. ‘taking breaks on the bottom, ...’, can be possessed by individual members of a class, ‘some species’ in [2] is to be interpreted as ‘some members of some species’, i.e. ‘some members of squids of the genus *Architeuthis*’. All of the above examples are devoid of generic co-textual clues, which will be discussed in the next section.

6.3.2.2 co-textual clues

The combination of some class generic clues with a singular indefinite NP, a ‘this / that + singular N’ construction, or a plural definite NP can most easily induce a sub-class class generic interpretation.

Type A: the creation of a sub-class

- [1a] Sue has *invented* a new hair-do which looks v. nice when it works. (SEU-W-07-01-217)
- [1b] Sales of this underwired and padded cleavage bra, *designed in 1968* and unchanged since, have increased four-fold in the past six months. (*The Times*, March 9, 92)
- [1c] And who could *invent* a sloth, a slow-motion animal that lives its life hanging upside-down beneath the branches of trees and which has to come down to the ground to defecate? (W2B-021-62)
- [1d] In the mid-1970s, the invasion of the French Golden Delicious began, heavily advertised on television as ‘Le Crunch’. The Golden Delicious had been *developed from* an American apple. (Oct. 9, 93 *The Times*)

Type B: the extinction of a sub-class

- [2a] Indeed, there's every reason to believe many folk medicines and remedies used by cultures across the world are effective - even those including animal products. What is needed is a direct appeal to use alternatives because a creature which is revered and admired really is in danger of *extinction*. (*The Independent* 14/9/95)
- [2b] Unless steps are taken quickly, the coelacanth, a fish thought to have accompanied the dinosaurs into extinction, really will *die out*, according to zoologists at Max Planck Institute for Behavioral Physiology in Seewiesen, Germany. The scientists are using submersibles to document the decline of the fish in the Indian Ocean, off the coast of Grande Comore Island. (*International Herald Tribune* 4/20/95)
- [2c] According to the Council of Europe, more than half of Europe's fish species may face *extinction*. So may an estimated 42 per cent of its mammals and 22 per cent of flowering plants. (*The Independent* Sept. 5, 94)
- [2d] According to the Council of Europe, more than half of Europe's fish species may face *extinction*. So may an estimated 42 per cent of its mammals and 22 per cent of flowering plants. (*The Independent*, Sept. 5, 94)
- [2e] . . . the world's leading conservation charity said that in Cambodia, Laos and Vietnam one tiger was being killed by humans each week. At that rate the Indochinese subspecies will become *extinct* in those three countries around the turn of the century. (*The Independent* 14/9/95)
- [2f] The conventional wisdom is that the printed book is going the way the dinosaurs went . . . (*The Daily Telegraph* 12/30/95)

Type D: the taxonomic status of a class

- [3a] Lake Bala is the largest natural lake in Wales, nearly four miles long, and noted for a rare fish, the gwyniad (white-fleshed), a non-migratory *species* of salmon, not found elsewhere. (SEU-W-11-03-13)

- [3b] Vitamins were first identified in 1906 as *a group of otherwise chemically unrelated organic compounds* with two distinct properties. First, they are essential for the body's metabolism. Second, they are not capable of being produced by the body itself: they must come from the environment. (*The Independent* 14 July 1995)⁵⁴⁵⁵

In [3a] 'a rare fish' is used to refer to 'a sub-class of fish which are not commonly seen'. And in [3b] 'vitamins' is used to refer to a set of different chemical compounds.

Type H: the distribution of a class

- [4a] The forest monkeys of the Americas are *varied* and extraordinary. (W2B-021-25)
- [4b] Between 1970 and 1990, 15 out of 18 common farmland birds *became more scarce*. Of these, more than a third tumbled by over 50 per cent. (Weekend Telegraph, Sept. 10, 94)
- [4c] Many birds have *increased in abundance* over the past few decades. ('Now you see them, tomorrow you won't', *The Independent*, Sept. 5, 94)
- [4d] ... Tree sparrows ... have declined by 85 per cent, corn buntings by 76 per cent, partridge by 73 per cent and skylarks by more than half, all in the past 20 years.
Many of these birds were once *characteristic of farmland*, but have been tipped into decline as a result of changes in agricultural practice ... (*The Independent*, Sept. 5, 94)
- [4e] More relevant to the wider public is the enormous *decline* in birds that were once *commonplace*. Tree sparrows ... have declined by 85 per cent, corn buntings by 76 per cent, partridge by 73 per cent and skylarks by more than half, all in the past 20 years. (*The Independent*, Sept. 5, 94)

[4f] Birds such as the razorbill *spend most of their lives continuously offshore in 20 key areas of the North Sea.* (*The Independent* 8 June 1995)

In [4e], it is some sub-classes of birds, such as the partridge and the skylark that were commonplace. Therefore, the unstressed ‘some’ can be added in front of ‘birds’ without changing its meaning ‘(some) sub-classes of birds’.

6.4 pronouns with generic interpretations⁵⁶

Personal pronouns *we, us, you* and *they* and their corresponding forms *them, their, our, your*, indefinite pronoun *one* and pronouns postmodified by a relative clause can be used to refer to ‘the sub-set of the human race inferrable from the context’ and therefore treated as ‘impersonal’⁵⁷ or generic⁵⁸. Such uses of *we, us, you* and *they* cannot be accounted for satisfactorily by the classic analysis of the English personal pronoun system in terms of person and number, as shown in the following table⁵⁹:

	PERSON	PLURAL
<i>we, us</i>	+I	+
<i>you</i>	+II	+-
<i>they</i>	+III	+

The referent of such a pronoun-headed NP has to be recovered by the addressee through inference based on what is encoded in the pronoun, clues provided in the context, and his general knowledge assumptions triggered by the context.

6.4.1 *one*

The pronouns *one* (and its genitive *one's*) and *oneself* can be used in most of the situations where *we*, *you* and *they* are used generically. The 'generic *one*' covers all the uses of *one* minus its being a numeral, e.g. those in [1], and a substitute for another NP, e.g. those in [2]⁶⁰.

- [1a] Well I want something bigger than one box of seeds (S1A-007-64)
- [1b] Why don't you uhm replace one of the back doors here and use the pane from that (S1A-007-102)
- [1c] B: from the second tone bar
A: yes please one two three four (S1A-026-248ff)
- [2a] can we can we scrap that word . . . edit that one out (S1A-006-262&264)
- [2b] I was the one who 's seen it (S1A-006-68)
- [2c] a person who specialises in computers one way or another or even just uses one every day more than I do I mean you know (S1A-005-171)

When we encounter a token of *one*, we have to disambiguate it because it is open to different possibilities. The examples in [1] illustrate the typical types of co-text for the numeral *one*: when it modifies a noun, as in [1a] or is the head of a partitive, as in [1b], or is in contrast with other numerals, as in [1c]. There are occasions where the construction is elliptical. For example, 'I want one (ticket), not two (tickets)' and 'I've got some tickets for the show. Do you want one or two (of them)?'.

The examples in [2] illustrate the typical types of co-text for the substitute *one*: when *one* is preceded by the definite article, as in [2a], and modified, as in [2b]. The substitute *one* has a plural form, *ones*. When *one* alone is used as a substitute, it doesn't occur at the subject position, where the generic *one* often does. When occurring at the object position, the generic *one* tends to be followed by either a direct object or a complement⁶¹.

Unlike *we* and *you*, *one* is not oriented to either the communicator (the first person), or the addressee (the second person). Unlike *they*, *one* doesn't encode plurality. Therefore, the encoded meaning of *one* is 'any entity involved in the situation'. For this reason, by using *one*, the communicator conveys a sense of detachment from herself. There is a gradient among the referents of the generically used *one*. The examples in [3] are at one extreme: the contextually inferable referent is the speaker, which is similar to some uses of *we*⁶² and *you*⁶³ (see below).

[3a] In an astonishing 20-minute attack on the Princess, the man [Major James Hewitt] who stole her heart moaned: 'Diana was happy for it to go out. But once it backfired the support that I got from her was non-existent which is HER fault ...

One doesn't have any support any more ... (Oct. 2, 94, *News of the World*)

[3b] 'how much effect has winning the Booker Prize had on your life Antonia?'
'it's been a mixture of extreme pleasure I've had hundreds of letters from all sorts of people who have enjoyed the book and considerable irritation because of being constantly interviewed and the phone never stops going and people offer one goodies' (S1B-046-1-4)

[3c] That death can confer status on a pop star, and do wonders for record sales, is certainly true - however, one feels that the use of great here has often rather more to do with the demands of rhyme than truth. (W2B-010-36 - *Dictionary of popular phrase*)

[3d] It is perhaps not so surprising that exporters should enthuse about being freed from the ups and downs and the extra costs of doing business in Marks, Francs, Lira and so on, because that would make their job easier. But one might expect them to be more cautious about the Charter, which calls both for a minimum wage and workers on the board. (W2E-009-11&12 - 'Exporters love EC', *Daily Mail* 26/10/90)

In the context of [3a], the referent of 'one' cannot be anybody else but the speaker, Major James Hewitt himself, neither can that be anybody else but Antonia in [3b]. It is

equally obvious that the content of the object clause in [3c] is what the writer feels and in [3d], it is again the writer who expects exporters to be more cautious about the Charter. The use of *one* in [3c] and [3d] helps to convey that the writers think that their thoughts are shared by some other people in their circle as well. The examples in [4]⁶⁴ move further away along the gradient from the communicator. There, *one* is used to show the communicator's attempt to engage the addressee in a 'joint enterprise' (Quirk et al. 1972:208).

- [4a] What is being suggested here is the disengagement of national culture from policy. One is looking to the dismantling of the ideology that each nation should have its state and all the implicit political prescriptions. (W2A-017-92&93 - 'Personal Identity, National Identity and International Relations')
- [4b] I always presumed the child a man has by one woman must be temperamentally different from one he has by another woman. However, one had to make allowances for youth, as Lynne was actually younger than one of the children she was talking about. (W2B-004-48&49 - 'Remembering Peter Sellars')
- [4c] The problem was that the Royale was so heavy - an average unladen weight was 5600lb (2540kg) - and the engine so inefficient in its breathing, that the car's performance was not as high as one might have expected. (W2B-037-50 - 'The World's Most Powerful Cars')
- [4d] Does the sheer accumulation of military hardware in Saudi Arabia create a momentum of its own? Extrapolating from the fact that the colossal build-up of armaments by both sides in the cold war did not lead to hostilities tempts one to assume that the potential for "mutual assured destruction", now existing in the Middle East, would deter either side from starting a fight. (W2C-003-80f - 'When Tory jaw-jaw turns to war-war', *The Guardian*)
- [4e] Iris books encourage one to see the year-round possibilities of the genus. You should be able to have an iris 'in bloom or beauty' all the time. (*The Independent* Sept. 3, 94)

The above examples are comparable to the use of *we* in [14] below.

Sometimes, while addressing their readers, writers use *one*, instead of *you* (cf. [8] below), to detach themselves from the voice of authority and to avoid being pedantic while addressing an indefinite audience, as shown in [5]. In this use, the involvement of the writer, which is clear in [4], has diminished.

[5a] One needs to be clear, though, that as there will always be renegade states, this is not a call for a passive and duped universal foreign policy. (W2A-017-80 - 'Personal Identity, National Identity and International Relations')

[5b] An often neglected factor is the background behind the screen. Probably the worst thing that one can have is a large, south facing window glazed with reeded glass which can disperse the sun's rays in all directions. (W2B-033-93f 'Computerisation in Business')

[5c] Rapid movement of the computer cabinet can cause gyroscopic effects that distort the disk itself with similar consequences. However, one should not get too alarmed about these dangers because these movements and knocks would have to be pretty severe for problems to occur. (W2B-033-50&51 - 'Computerisation in Business')

[5d] By combining the B-Scans for the 0° and 45° probes one is able to infer that the defect is inclined at 45° to the surface. (W2A-036-37 - 'AI techniques applied to the classification of welding defects from automated NDT data')

[5e] For example, suppose one wished to distinguish a rectangle from a triangle one might choose a discriminatory feature such as the number of sides of each shape. (W2A-036-6)

In the examples in [6], there is a contrast between the two uses of *one*: with the writer's participation (indexed by the superscript 'a') or without (indexed by the superscript 'b').

[6a] LEMUR TO LORIS

In a few parts of the world (eg, Madagascar) one^b can also come across those other delightful primates, the lemurs, which fill much the same ecological niche

as the monkeys. Many people do not realise that there are many species of lemur and without doubt the best known is the attractive ring-tailed lemur, which has now been made into a delightful soft toy whose sales result in a small royalty going towards the animal's conservation.

One^a can accept that monkeys occur in the treetops - after all we^a are brought up with the image of monkeys swinging through the branches - but it comes as something of a surprise to see some of the other denizens of the trees.

(W2B-021-57f - 'The Mighty Rainforest')

- [6b] At ground level the most you^b can expect to see are the herons and their cousins, which haunt every patch of water they can find. Sometimes one^b also comes across kingfishers, which can be tiny and brightly coloured or fairly large birds, larger than one^a expects a kingfisher has any right to be. (W2B-021-87&88 - 'The Mighty Rainforest')

In [6a] and [6b], the referents of 'one^b' (and 'you^b') needn't involve the writer and this point is illustrated by the writer's mixed uses of 'you' and 'one' in [6b] to refer to the same referent. On the other hand, the referents in 'one^a' (and 'we^a') do involve the participation of the writer and this point is shown by the writer's mixed uses of 'one' and the inclusive 'we' in [6a] to refer to the same referent.

The referent of *one* can be more detached from the communicator and the addressee, moving towards a contextually inferred particular sub-set of people neutral to either of the parties, as shown in [7]. This use of *one* has informal versions of *you*, as shown in [10] below, and of *we*, as shown in [16] below.

- [7a] Did saying that revolution was inevitable also mean that one was advocating it?
(W2B-015-102 - 'A Slight case of Libel: Meacher v Trelford and Others')

['One' = 'anybody who says that revolution was inevitable']

- [7b] Without the possibility of discussing openly the all-important problems the country had to face, national identity, because of its highly emotional character, was the question that tended to pervade all others. The craving for more

freedom of expression was all too often reduced to a need to call oneself by the name of one's nationality. Faith in a supranational Communist ideology having failed, people fell back upon the collectivity to which they felt they belonged. (W2B-007-87-89 - 'The Times Guide to Eastern Europe: The Changing Face of the Warsaw Pact') ['oneself' = 'some politicians themselves in the former Eastern bloc']

[7c] Between 1970 and 1980, however, population increased at least as fast as in the United States in all Latin American countries except Uruguay. Social attitudes, such as the desire for insurance in one's old age, encourage this. (W2A-019-9&10) ['one' = 'people in Uruguay']

[7d] The political competition to appear more patriotic than one's competitors is not necessarily a public performance aimed simply at mobilising political support, but is also a manifestation of a genuine identification with the nation-state by the politician. (W2A-017-61 - 'Personal Identity, National Identity and International Relations') ['one' = 'politicians']

[7e] Where politicians lose most heavily, however, is in their vulnerability to suggestions that they are bad at their jobs. An imputation of incompetence in one's trade or profession is regarded as highly defamatory. Journalists are particularly prone to rush off to their solicitors if someone says they are past it or were never up to it. (W2B-015-73 - 'A Slight case of Libel: Meacher v Trelford and Others') ['one' = 'anybody who has a profession or trade']

[7f] We might never get another chance at our age, she'd said at the time, mentioning father as an example of how easily one could go into decline. (W2F-013-37) ['one' = 'elderly people']

[7g] Not just like going into one's bank and being told there's no money in one's account when one thought there was, but like going in and being told one's never had an account there at all. A feeling that all along one must somehow have completely misunderstood the situation. (W2F-011-93&94) ['one' = 'the people have had banking experience']

[7h] It must be peculiarly disconcerting, don't you think, to be left for someone entirely different from oneself? (W2F-011-92)

- [7i] That is circumstances in which words derived from the holy tongue or [word] [word] were to be avoided as for example when purifying oneself from a Mikva that is the ritual bath (S2B-042-40)

6.4.2 *you*

The pronoun *you* is considered to be ‘typically an informal equivalent of *one*’ (Quirk et al. 1985:354)⁶⁵ perhaps because there are more occasions for *you* to be substitutable for *one* than there are for either *we* or *they*. *You* has encoded the meaning of ‘the second person’, so it is natural for it to be used to address an audience which includes more than those who are directly addressed, corresponding to the use of *one* in [5] above:

- [8a] If you already have a vertebral fracture, or if you have had a Colles’ fracture of the wrist, ask your doctor if you have osteoporosis - after all no-one may have told you about it, and it’s important that you should know. (W2B-022-74 - ‘Everything You Need To Know About Osteoporosis’) [‘people involved in the situation ‘]
- [8b] Using the latest computer and communications technology and working closely with local police forces, we can react quickly when you need us, but we need your help too. (W2D-009-159 - ‘Travel Safely by Public Transport’, Department of Transport)
- [8c] You may therefore need more than one dish to receive all the stations ... You can view a video picture on either a TV receiver or a monitor. (W2D-014-29&31 - ‘The Complete Book of Video’)
- [8d] With espaliers (and fans and the like) you need to take off excess growth in early August. Excess means anything that you cannot train in as part of the basic shape. It includes shoots that poke out at the front or the back of the trunk, and the new growth that zooms up from the horizontally laid branches. You have to cut these back, leaving three pairs of leaves. (*The Independent* 27/8/94)

Sometimes, the referent of *you* is a set of people including the communicator as well as the addressee, a use corresponding to the use of *one* in [4] and the generic ‘inclusive *we*’ in [14]:

- [9a] He [Laurence Olivier] leaned across the table. ‘You live in your own private life, so no one knows who you really are. Do they?’
‘I [Sarah Miles]’ve never thought about it before.’
‘Well, think about it now, because from now on you and I are a secret. Our affair is our affair.’ (*Serve Me Right* by Sarah Miles, London: Macmillan General Books 1994)
- [9b] “What I’ve learned is that you get nothing in this business until the final whistle,” he said. (W2C-014-47 - footballer’s talk)
- [9c] He offers me red or white wine, adding quickly: ‘As Kingsley Amis says, the heart sinks at the implication that you can only have one or the other.’ Red, please, I say. (‘So much fun catching up on treats’, *The Independent* 28/6/94) [‘anybody who is involved in the situation’]
- [9d] ‘I hadn’t yet joined the learning culture. I obviously had some innate intelligence. But university degrees are a bit like adultery: you may not want to get involved in that sort of thing, but you don’t want to be thought incapable.’ (Sir Peter Imbert, *The Times*, 10/16/94) [‘anybody who is involved in the situation’]

When the referent of *you* doesn’t have to have a direct connection with the audience, as those shown in [10], then it has become some sub-set of people who are somewhat detached from the communicator and the addressee, corresponding to instances of ‘one’ in [7] above and those of *we* in [16] below. This type cannot be accounted for by the classic analysis of pronouns (cf. the table at the beginning of this section) because the referent here is no longer directly the second person⁶⁶.

- [10a] Behind even some of the Western rhetoric, hardened by the need to keep up the psychological pressure, is an understanding that Saddam Hussein’s style is to go

just beyond the wire but then to embrace the unacceptable if his own survival dictates it.

But what if he refuses? For peace you need trust , and for a leader so fearful for his own safety the dangers of withdrawal may be too great to accept. (W2E-007-73-75 - ‘Keeping cool while the war hots up’, *The Observer*)
[‘people involved in the situation’]

- [10b] It is far too late for tinkering with the environment, far too late for putting the sticking plaster below the waterline when what we really need are the life-boats. When the Titanic is sinking, you don’t just rearrange the deckchairs. If the structure of the economic system is the problem then you have to change that structure and allow people to control it. (W2B-013-4-6 - ‘It doesn’t have to be like this: Green politics explained’) [‘people involved in the situation’]

As shown in [3], *one* can be used to refer to communicators themselves, so can *you*, as shown in [11]. Again, the classic analysis of pronouns cannot handle this use because the referent is not the second person. In [11c], the speaker actually made his referent of ‘you’ explicit.

[11a] You can love twice in your life, I’ve discovered. (W2F-008-24)

[11b] and I think when you’re choreographing uhm with very able-bodied people particularly because I ‘m used to working with very able-bodied people who are capable of doing more or less anything you ask / then uh you don’t have those restrictions you um / whereas within this particular class you there are limitations and it makes it in a way far easier / I’d say to be able to create because you can’t go off at in all tangents or in every direction (S1A-002-21 - talk of a trainer for disabled dancers)

[11c] Now may be Jenny would understand that to be Oliver Barrett IV doesn’t just mean living with that gray stone edifice in Harvard Yard. It involves a kind of muscular intimidation as well. I mean, the image of athletic achievement looming down on you. I mean, on me. (*Love Story* by Erich Segal, London: Coronet Edn. 1971, p. 36f)

6.4.3 *we*

The pronouns *we*, *us*, *our* and *ourselves* encode the meaning of the first person and plurality. Earlier I have mentioned that any uses of *one* except its being a numeral or a substitute for another NP are usually covered under the heading of ‘generic *one*’⁶⁷. Sticking to this practice, I will treat the uses of *we* corresponding to these uses of *one* in this section.

First, similar to the instances of *one* in [3], *we* can be contextually inferred as referring to the writer, which is often called the ‘editorial *we*’. In such a use, context overrides the encoded plurality and hence this use doesn’t fit the classic analysis.

[12a] In this chapter we shall develop some of the issues dealt with in Chapter 2.1.

(W2A-011-8)

[12b] We can crudely summarize the effects of porosity and permeability by saying that fine sands retain a high water content but allow water to penetrate through the sediment only slowly, while coarse sands allow water to enter and to leave rapidly. (W2A-022-39)

The referent of this ‘editorial *we*’ can be enlarged to include a community with special interest of which the communicator is regarded as a part, as shown in [13].

[13a] Rather, it is a reminder that there may be aesthetic viewpoints from which what we have come to regard as a paradigm of architectural excellence may appear seriously flawed. (W2A-005-30)

[13b] Thus, as with Mallarme’s Symbolism, we have not a one-to-one system of symbolism, but an enigmatic, conflictual model of signification, where the text overtly delivered is a trace of the struggle towards meaning. (W2A-002-28)

Corresponding to the use of *one* shown in examples in [4], *we* and *us* can be used to show a kind of ‘inclusionary warmth’ (Greenbaum & Quirk 1990:115) to the

reader while implying that there is a larger group of people who also belong to the referent, as shown in [14].

[14a] What we are witnessing is a major script revolution, in which a conscious choice of script type appears to have been made for a variety of reasons, not all of which are as yet understood. (W2A-008-68)

[14b] TV receivers, which we normally use in the home, can decode the radio-frequency input before it is converted into red, green, blue, luminance, and audio signals. (W2D-014-32 - 'The Complete Book of Video')

[14c] We tend to think of Monet, Renoir and Sisley as the painters of the Parisian suburbs at this time, but Pissarro's two short spells should not be overlooked. (W2B-002-61)

[14d] Tonight as a Kuwaiti citizen tells us from Kuwait City that it's been a dull day there we look at what's happened to the civilians in this war (S2B-001-10 - Channel 4 News, 4-2-91)

Corresponding to instances of *one* in [5] above and those of *you* in [8] but with a slight different tone, *we* can be used to refer to the addressee, which can be paraphrased as something like 'As I hope you ...'⁶⁸. This use violates the classic analysis because the first person element doesn't play the major role in the referent.

[15a] As we shall discover, the concept of child abuse is an extremely elusive one and means different things to different people. (W2B-017-25)

[15b] As we have seen, reassertion of identification with the Plantagenet past also took place at this time. (W2A-010-58)

[15c] Some muscles are functionally slow and have a predominance of ST fibres; others are fast and contain mainly FT, fibres. We can call these ST and FT muscles. (W2A-024-72-73 - 'Mechanisms of adaptation to low energy intakes')

The referent of *we* and *us* can also be as detached from the communicator and the addressee, as those of *one* in [7] and those of *you* in [10], becoming almost 'anybody

who is involved in the situation described'⁶⁹. This use, again, cannot be accounted by the classic analysis because the referent includes more than what is understood by the first person element encoded in the pronoun. Examples of this use tend to be in the collocations of 'tell us' or 'let's'.

- [16a] Physicists would tell us I suppose that it's almost impossible or very difficult to actually lose energy it always reappears in some kind of form (S2A-049-4 - 'Creating a learning organisation', RSA Lecture, 8-1-92)
- [16b] so it 's flowering plants mammals and birds / so in other words if you were to divide up the stratigraphic column today you would get four main divisions would it be mmhm / just uh makes stratigraphy a lot easier anyway doesn't it / but uh might not tell us a great deal about the Earth's history (S1B-006-277-281 - CLASSROOM LESSONS : Geology)
- [16c] In terms of effective foreign policy, identification theory has told us that in order to mobilise mass public support behind a particular foreign policy initiative, that initiative must be associated with the defence or enhancement of symbols of national identity. (W2A-017-31 - 'Personal Identity, National Identity and International Relations')
- [16d] I've never heard the House of Commons likened to full frontal ballet before / I 'm sure Michael Dobbs's book is going to tell us more about that from what I've read about it (S1B-024-33 - Start the Week, BBC Radio 4, 12-11-90)
- [16e] The legend tells us that after the crucifixion the two saints and their Egyptian servant Sarah were set adrift by the Jews of Jerusalem in a boat with no sails no oars and no food (S2B-027-107 - *Provence*, Castles Abroad, ITV)
- [16f] And uh it 's this document which is really the subject of today uh and it is the most precious and the largest document which tells us about the ancient Gauls the people who lived in what's roughly today France ah in the period up to the Roman conquest of the fifties B C by Julius Caesar 's legions (S2A-022-5 - 'Caesar and the Celts', British Museum Lecture)
- [16g] The paintings were described in 1323, very inaccurately, as showing all the warlike stories of the whole Bible, and their predominantly martial character

may tell us something about the ethos of Edward's household in the 1290s.
(W2A-010-56)

[16h] Let's get one thing straight to start with: the Gulf oil-slick is not, as the newspapers have been saying so routinely that it has almost become a subtitle, the worst environmental disaster ever. (W2B-029-2)

From the context we can infer that the referent of *we* and *us* can be a nation⁷⁰, as shown in [17]:

[17a] We are becoming a nation of sitters - we sit on the way to work, at work, coming home, at home. We sit in the car instead of walking; we use the lift instead of the stairs; we spend the evenings sitting in front of the television. (W2B-022-9)

[17b] The opposition to it comes from those politicians who know that if we had real democracy in this country they would no longer win total power with the support of just 32 per cent of the electorate.

We don't have democratic elections in this country, we have a sham, a sleight of hand. We can't solve our environmental problems, or any others come to that, until we have a parliament that represents the values and beliefs of all the Population ... If we just elect those people to govern our lives from far away, then apart from being more representative, power would stay with the few at the centre. (W2B-013-11-18 - 'It doesn't have to be like this: Green politics explained')

[17c] Despite the substantial increase in home agricultural production since 1945, the United Kingdom shopping basket is filled, in cost terms, with 45 per cent of foreign food. In nutritional terms imported cereal and other staple foods account for 36 per cent of what we require. (W2B-018-68&69)

[17d] [Forename2] says the high turnover of staff at the Treasury is mainly due to people that feeling unappreciated & insufficiently rewarded - no-one bothers to tell them they 're good until they've just handed in their notice. Perhaps we Brits should admit we all just wanna be loved. (W1B-011-59-60)

- [17e] Recent developments may have been positive and they have been uh but we need to see a lot more a lot more urgency uh unless we are to uh find ourselves in ten years hopelessly handicapped in our ability to compete in what will be probably the toughest if richest market on earth (S2A-023-62) [the underlined expressions = ‘the nation as an economic entity’]
- [17f] The former Chief Secretary to the Treasury John Biffin told us that the Government is inhibited by the Exchange Rate Mechanism from cutting interest rates but that they would come down in the next two or three months (S2B-002-109 - Channel 4 News, 11-2-91) [‘us’ = ‘the nation that the government is responsible to’]

The referent of these first person pronouns can also be the whole human race⁷¹ with emphasis on its different aspects, as the inference based on the context shows:

- [18a] Uhm now drugs may not appear to be involved in aerobics but those of you who have studied uhm some of the theories about of why physical exercise does you mentally good may have come across endorphins which are morphine-like substances which we make ourselves in times of stress or exertion or injury and which are our natural home-made opiates (S2A-027-31) [= ‘biological human race’]
- [18b] Finally this week another development in our understanding of the causes of heart disease and the extent to which those causes lie within ourselves specifically within our genes (S2B-038-27) [= ‘biological human race’]
- [18c] We are now more than ever aware that we live in a world where events that happen in one part affect people who live in another. (W2B-018-63)
- [18d] Its echoes are taken up and amplified by Kant who insists that being moral can’t be a matter of submission to an external authority it must be something that we impose on ourselves in what he called autonomy (S2B-029-77) [= ‘the rational human beings’]

- [18e] Certainly moral philosophers could no longer tell us what to do (S2B-029-93 - The Reith Lecture, No. 2, BBC Radio 4, 21-11-90) [= ‘people living in the modern society’]
- [18f] In the same way, she may not have been personally responsible for the Chernobyl affair , or for the fact that fallout from Chernobyl has made the hills of Wales and Scotland so radioactive that over 700 farms still cannot sell their meat for human consumption, but it was she who - a mere three years later - was still stoutly defending nuclear power as the most environmentally sound source of energy we have. (W2B-014-13)
- [18g] We all like to pride ourselves on the care which we lavish on our children, so, why is child abuse not an issue of popular debate, other than around the times of extensive media coverage? (W2B-017-30) [= ‘adults’]
- [18h] We go about our daily lives understanding almost nothing of the world. We give little thought to the machinery that generates the sunlight that makes life possible, to the gravity that glues us to an Earth that would otherwise send us spinning off into space, or the atoms of which we are made and on whose stability we fundamentally depend. Except for children (who don’t know enough not to ask the important questions), few of us spend much time wondering why the nature is the way it is . . . (opening of Introduction in *A Brief History of Time* by Stephen Hawking, London: Bantam Press)

[18h] is addressed to the largest audience possible because of the topic.

6.4.4 *they*

The pronouns *they*, *their* and *them* encode the third person and plurality. Therefore, they can be used to refer generically to a contextually inferable sub-set of people detached from the communicator and the addressee. In this use, the sub-set of people being referred to by *they* is contextually understood without resorting to any antecedent⁷².

There are two major types of generic *they*: one is about a linguistic community and the other is about a particular social group.

Like *one*, *they* can be inferred to refer to a linguistic community, general or specialised, when it is in expressions like ‘as they say’ or ‘what they call’, etc. Examples in [19] are about the general linguistic community:

- [19a] At 5 am the next morning, wilful as ever, he woke Dennis up with a phone call desperate to get Lynne’s number. With the skill of many years of negotiation behind him, Dennis stalled long enough to pass a message to Lynne, giving her the option to call Pete. Later that day she did and the rest, as they say, was history. (W2B-004-18-20)
- [19b] Producers are used to consigning presenter’s fluffs to the waste-paper basket, they cobble and contrive - all art is artifice after all but not on that scale. A presenter with cerebellar ataxia is, as they say, a whole new ball game. (W2B-001-102-103)
- [19c] yes the English are branded on their tongue as they say don’t they so uh as soon as you speak you know they usually know what an idiot you are (S1A-020-41)

Examples in [20] are about some jargons used in special social groups, still belonging to the first type of the generic *they*:

- [20a] and I learnt how to do uh what they call quadrats (S1A-036-163)
- [20b] now this book is mostly about what they call modulation where you actually go to another key in the course of the exercise (S1A-045-167)
- [20c] and she went to his church and sat up upstairs what whatever they call it in church terms (S1B-005-163)
- [20d] this was really going for the air fields and going for and establishing what they call air superiority (S1B-038-25)
- [20e] and the aircraft is zeroing on the bridge and the cross-hairs of the of the of the target indicator as they call it is showing where the bomb will go (S1B-038-70)

[20f] It anticipated that the result of Eurotra would be uh what they call a scientific definition prototype rather than a pre-industrial development prototype (S2A-032-68 - 'Eurotra and some other machine translation research systems', King's College)

[20g] and I have also been told that the Metropolitan Police are introducing what they call sector policing which is to all intents and purposes the same system (S2B-037-49)

The second type is about a specific social group, which usually influences the communicator in some way⁷³, as shown in [21].

[21a] how on earth do they tuck ten flats into that one semi-detached (S1A-007-246)

[21b] in pubs they say that you know they can only say about twenty per cent of the glasses are dirty and it 's not the publican's fault always it 's his staff (S1A-094-4)

The referent of the 'they' in [21a] is the housing authority and that of the 'they' in [21b] is more obvious from the co-text, the pub-owners. Normally the referent of this type of 'they' can only be inferred, but sometimes they have an explicit antecedent and therefore the distinction between the generic 'they' and the anaphoric 'they' is blurred, as shown in [22].

[22] '... Since then, we've been funded, very reluctantly, by *three District Health Authorities*, which -'

'Three separate Authorities? Do you handle them as three separate budgets?'

'Yes. They say that since we own the building, they won't increase the amounts of money with inflation, which means in effect, we're worse off every year.'

(W2F-004-142-146)

In news programs, 'they' can be used to refer to some obscure source of the news, as in [23].

[23a] From Riga here 's the BBC 's correspondent Tim Hewell / Estonia has until now been the calmest of the three Baltic republics / but with a coordinating committee of pro-Moscow organizations now calling for the dissolution of parliament the authorities believe the threat of a military intervention similar to that in Lithuania has become too real to ignore / they say an illegal radio station apparently broadcasting from inside a military base is issuing regular appeals for the overthrow of the government (S2B-015-58-61 - news)

[23b] However they say all the missiles were carrying conventional warheads (S2B-015-101 - news)

6.4.5 'pronoun + relative clause' construction

The construction of pronouns *we*, *he*, *she*, *they*, *all* and *those* plus a relative clause can be used to refer to a restricted sub-set of people who have the property predicated in the relative clause⁷⁴. However, such constructions involving *he*, *she* and *they* are rare in contemporary English and there isn't any such example in the one-million word ICE-GB.

If the referent of such a construction occurs in a particular event, then the reference is specific, as in [24].

[24a] Her Majesty greets those who have been waiting for her the Prime Minister Mr John Major the Senior Secretary of State for Scotland Ian Lang Tom King the Secretary of Defence military chiefs General Sir Peter de la Billiere Sir David Craig (S2A-020-108 - Remembrance National Service of Remembrance and Thanksgiving, Glasgow Cathedral, BBC Radio 4, 4-5-91)

[24b] you see we had a month 's study tour which is more like a holiday and then we those who were going to stay for three months flew back for one week to be debriefed and went back out again which was really crazy (S1A-014-183)

[24c] and clearly uh their labour costs are a very important component so it's extremely important uh that all who are concerned with wage negotiations should uh think carefully about the consequences of their actions uh and think to uh the future not simply to uh what might happen in the very very short term (S1B-057-39)

Otherwise, it is generic, as in [25]:

[25a] Those who won't ask don't get (W2E-009-27)

[25b] it's a great moment of the turning over of the stomach for those who are about to perform isn't it / the sound of the tuning up (S1B-023-37)

[25c] Once those who have sought power are in power they have virtual carte blanche to do as they like, and to bulldoze through the demonstrably unpopular policies (such as the abolition of the GLC and the privatisation of water). (W2B-014-65)

[25d] These lines are from a poem called Solitude (1883) by Ella Wheeler Wilcox (1855-1919) and, as CODP points out, are an alteration of the sentiment expressed by Horace in his Ars Poetica: Men's faces laugh on those who laugh, and correspondingly weep on those who weep. (W2B-010-43)

[25e] this story appears to be the origin of the opera Turandot the princess is drawing a picture of herself and it 's going to be pinned on the palace door and then suitors will try for her hand and those who don't make it will be killed and the one who gets through will marry her (S2A-059-81ff)

[25f] . . . the willingness of doctors to prescribe the pill to all who ask for it has actually contributed to the rising frequency of underage sex, by making it safer. (*The Sunday Telegraph* Oct. 2, 94)

[26] shows that in fact a pronoun like 'those' behaves rather similarly to a general word like 'people':

[26] and that will mean that people who will lose out overall will tend to be in larger properties where there are two or one or two adults and those who will gain will

be small properties where there are many adults several adults (S1B-034-54 - Panorama, BBC 1 TV, 29-4-91)⁷⁵

6.5 summary

In this chapter I have developed a new treatment of the four types of generics noted by scholars. Firstly, I have given an explanatory account of how these expressions are interpreted with not only semantic decoding but also pragmatic inference. Secondly, I have classified the data in a taxonomy the scale and details of which has superseded any of the existing accounts. Thirdly, I have clarified the confusion in the sub-class interpretation, stating that a sub-class interpretation can stand alone and can combine with member and class generic clues to yield sub-class member generic as well as class generic interpretations.

Chapter VII

Conclusions

In studies of noun phrase interpretation, very few researchers have drawn on evidence from utterances actually spoken or written to establish a taxonomy of discoursal relations between noun phrases in a text (cf. Halliday and Hasan 1976; Brown 1995). No researchers, it must be said, have analysed such authentic data in a pragmatic framework which emphasises the recovery of the proposition expressed by the utterance. My treatment of noun phrases in general and generics in particular, which utilises corpus material and is presented in the framework of relevance theory, has resulted in a more explanatory and unified account of a wide range of data and provides future researchers with new ways of exploring the discoursal behaviour of noun phrases, their interpretation and the inter-relation between these two aspects. Future research along the same lines can be expected to deepen our understanding of human cognition as well as utterance interpretation.

Chapter I is the introduction, which describes the sources of the data used and main purposes of this study. The first half of Chapter II introduces the relevance theory, which explains utterance understanding in terms of a combination of decoding and inference, governed by a single over-arching pragmatic principle. The (second) principle of relevance [The principle is so renamed in Sperber & Wilson 1995] stipulates that the nature of ostensive communication is such that the hearer expects to achieve some cognitive effects with no unjustifiable effort through interpreting an utterance. The hearer is to interpret the utterance in a context intended by the speaker so as to recover its intended meaning. The context consists of assumptions that the hearer forms from his memory and perception and this process is constrained by the (second) principle of relevance. For example, when hearing [1] in a confrontation with a policeman, the hearer is most likely to interpret it as [2a] if the speaker's hatred for the police is the most accessible information in the hearer's mind. On the other hand, if a

non-confrontational attitude toward the police is what the hearer attributes to the speaker, then [2b] is the more likely interpretation:

[1] Let him have it.

[2a] Discharge a firearm at the policeman.

[2b] Allow the policeman to have the gun.

In fact, Derek Bentley, who was allegedly the speaker of [1], was convicted because of intending [2a] with [1] on the ground that Bentley was believed to have a hostile attitude towards the police.

Relevance theorists regard linguistic semantics as the study of the encoded meaning of words and pragmatics as covering any inferential process governed by general communication principles. Such a division allows us to explore the role of inference in noun phrase interpretation beyond the traditional grammar. For example, without resorting to pragmatic inference, grammatical or semantic decoding cannot correctly specify the meaning of a noun phrase like ‘the book’ because the specification suggested by some semanticists, [3a], is not applicable to the case in [3b] or [3c]:

[3a] There is a contextually unique entity which is in the (extensional) denotation of the lexeme BOOK. (Cann 1993:16)

[3b] The book is a means of passing knowledge from one person to another, from generation to generation.

[3c] It is conceivable that the book is dying out the way the dinosaurs did.

Only our belief that the predicated property in [3b] is a characteristic shared by the individual items that people classify as ‘books’ will decisively help us in inferring that ‘the book’ in [3b] is used to refer to books in general. It is also our belief that only a class, not an individual, can die out that helps us to conclude that ‘the book’ in [3c] is used to refer to the class of books as a whole.

In Chapter II I have also explained the types of content and apparatus employed in inference. Meaning can be related to narrow content as well as to broad content. It is the communicator's and the addressee's beliefs about the states of affairs in the world, rather than such states of affairs themselves, that are used as the basis for inference in language interpretation.

In an account of language comprehension, in particular, NP interpretation, we are mainly concerned with what the speaker intends to convey to the hearer (cf. Brown 1995 for a 'listener's account'). Relevant to us is therefore the narrow content, the meaning that is sensitive to mental representation and computation. In linguistic semantics and pragmatics, therefore, we should deal only with narrow content. Broad content, which is not in people's head, should ultimately be the subject of natural sciences and some branches of philosophy. It is obvious that in interpreting the following two contradictory utterances, we don't have to judge which reflects the broad content more accurately (which is the task for some specialists) before we can conclude that 'men' in [4a] is intended to be interpreted generically:

[4a] Long spells behind the wheel can make men infertile, medical researchers believe. (*The Sunday Times* 4 Feb. 1996, p. 7)

[4b] Last week 20 professional drivers, questioned about their fertility, were coy about their underwear - but boasted 40 children between them. (ibid.)

During the interpretation, only the criteria based on a notion of truth in terms of narrow content, i.e. a set of assumptions we believe, are involved. Having adopted this approach, we can avoid making such statements as the one made by a philosopher: 'Generic propositions are relatively rare, because most would be false' (Potts 1994:206). Generic propositions, if they are not equated with universally quantified propositions, are not rare and people use them every day to meet their cognitive needs despite what some philosophers have said about them.

In language comprehension, people make use of a set of default rules for the sake of cognitive economy. There are different sets of rules for different modes, such as

factual vs. fantastic. For example, when reading the following passage, we will relax some semantic selection restrictions and broaden the range of possibilities to make inference run smoothly after we have realised it is non-factual:

[5] He [the reindeer] dug in the snow with his hoof. ‘Sit down here.’ She [the reindeer breeder’s daughter] sat, he banked up the snow, cast a spell, and it turned into a hillock. The moon came, looked for the girl, walked round, but could not find her. (‘Hostile magic in the Icelandic sagas’, in *The Witch Figure* edited by Venetia Newall, London: Routledge & Kegan Paul 1973)

However, if the addressee is not prepared for the switching from the factual mode to the non-factual, his inference will be temporarily blocked because some of his mental schemas are being challenged. That is what ‘she’ is supposed to experience in the following example:

[6] She said, ‘Don’t you know that Renoir claimed he painted with his penis?’
‘Don’t worry,’ I said. ‘He did. When he died they found nothing between his balls but an old brush.’
‘You’re making it up.’ (*Written on the body* by Jeanette Winterson, London: Vintage, 1993, p.22)

Examples such as [5] and [6] shows that the reasoning people use in language interpretation is nonmonotonic: people are willing to add new premises to their inference when their default schemas clash with an initial interpretation if they believe the content that they are interpreting is cognitively beneficial to them. In [6] the female character senses that what the male character is describing disagrees with her own knowledge of the human anatomy so she volunteers an added premise: ‘you’re making it up’. If it is non-factual, then anything is possible. Further inference with the belief that he is not deliberately trying to deceive her will yield the intention of the male speaker: he is pulling her leg. This mechanism is also crucial to the interpretation of member generic expressions (see below).

Chapter III deals first with the formal features of a noun phrase that are significant for its interpretation. A particular word-class membership of an NP head can have a straightforward correlation with its interpretation. For example, common nominal adjectives are correlated with a type of generic interpretation (cf. 3.1.1 & 6.2.2).

Also, the definiteness and number of a noun phrase can limit the range of its interpretations: a singular indefinite noun phrase combined with generic contextual clues must yield a sub-class generic interpretation (cf. 4.1.8. & 6.3). And a limited generic reference results from a restrictively modified noun phrase, like ‘the African elephant’ or ‘children without brothers or sisters’.

Chapter III also discusses various clues for interpreting a noun phrase. First we have to decide whether it is an introductory expression, like the underlined one in [7], or a dependent co-referential / co-interpretational one, like the italicised ones in [7]:

- [7] OXFORD UNIVERSITY PRESS is privileged to publish this volume in recognition of the invaluable contribution made by Henry Widdowson over the years, both as Applied Linguistics adviser to the ELT Division at *the Press*, and as a scholar and author whose work has promoted the development of professionalism in English Language in so many years. *The publishers* would like to express their gratitude to the editors and authors for all their work in making this book possible. (The publishers’ acknowledgements to Henry Widdowson in *Principle & Practice in Applied Linguistics*, Oxford: Oxford University Press 1995)

If the expression is introductory, then we choose different ways of interpreting it, according to its formal features. If it is an indefinite NP, then semantic decoding is the initial task, as in the case of those underlined in [8]: we retrieve whatever we know about these words from our memory.

- [8] Some students find that learning pragmatics and learning syntax are mirror images of one another. (opening sentence of the preface of *Doing Pragmatics* by Peter Grundy, London: Edward Arnold 1995)

If the introductory expression is a definite NP, we have more clues on which we can depend in our interpretation. The underlined NPs in [9] are deictic so we as readers can interpret them taking the writer's point of view and our understanding of spatial relation into consideration: 'you' is used to refer to anybody who is reading a copy of the book *The Language Instinct* and 'these words' are the words printed in the book.

- [9] As you are reading these words, you are taking part in one of the wonders of the natural world. (*The Language Instinct* by Steven Pinker, London: Penguin Books 1994, p. 15)

As opposed to the underlined NPs in [9], whose interpretation requires the recognition of their physical referents, definite NPs are often intended to be interpreted just as mental representations. They can be interpreted homophorically, like those in [10], directly appealing to the addressee's general knowledge. That is, 'the year 1984' is used to refer to a period of time in history calculated according to the Gregorian calendar, which is known to people in the modern world. The name 'George Orwell' is used to refer to a certain English writer who is famous for his allegory '1984'.

- [10] The year 1984 has come and gone, and it is losing its connotation of the totalitarian nightmare of George Orwell's 1949 novel. (*The Language Instinct* by Steven Pinker, London: Penguin Books 1994, p. 55)

The definiteness of an NP can be an indication of its internal modification, as shown by the underlined NP in [11]: the interpretation of such an NP is similar to that of an indefinite one, such as those in [8].

- [11] The existence of cognition in nature is an outcome of biological evolution.
(opening sentence in Sperber, Premack & Premack eds. 1995:XV)

Or it can be an indication of associative inference, known as 'bridging', when the addressee is expected to have access to the referent of a definite NP via a mental

schema provided by the co-text. In interpreting ‘the base’ in [12], we make use of our schema about a frying pan, which naturally includes a base: so ‘the base’ here is used to refer to the base of the frying pan which has just been mentioned.

[12] Pour enough oil into *a heavy frying pan* to cover the base. (opening sentence of a recipe, *The Sunday Times* 26/11/95)

On the other hand, if the NP to be interpreted is co-referring and/or co-interpretational, then one has to trace its antecedent anaphorically or cataphorically relying on inference with various kinds of clues. In [7] above, ‘the Press’ is used to refer to Oxford University Press, the only press which has been mentioned in the co-text. In [13] the pronoun ‘they’ is used to refer to “actors’ huge egos”, instead of ‘actors’, the other of the two potential candidates, and the more likely one in terms of its syntactic position (the subject of the previous clause).

[13] . . . but you have to take into account the ego. Actors have huge ones and they bruise very easily. (*The Sunday Times* 8 Oct. 95)

Co-reference is defined on the criterion of whether two expressions are used to talk about the same thing, while co-interpretation is defined on whether the interpretation of one expression depends on another in one way or another. In [7], all of the underlined NPs are used to co-refer to one entity, OXFORD UNIVERSITY PRESS.

In [13], by contrast, we rely semantically on ‘the ego’, via ‘huge ones’, to interpret ‘they’ in the last clause. These three expressions are in a relation of co-interpretation since they are not used to refer to the same thing. The NP ‘the ego’ is the general concept ‘ego’; ‘huge ones’ is used to refer to entities belonging to the class denoted by the noun ‘ego’ and restricted by the modifier ‘huge’; ‘they’ is used to refer to ‘the huge egos that actors have’.

Halliday and Hasan envisage that ‘[c]o-reference is one particular form that co-interpretation may take - where the two items do, in fact, refer to the same thing’ (1976:314). In fact, some instances of co-reference are not co-interpretational:

- [14a] If a noun-phrase does not consist of a single pronoun, or a pronoun with a relative clause attached to it, the principle word it contains will be a noun. It may contain more than one noun: a noun-phrase may be part of a longer one. (*Grammar & Style* by M. Dummett, London: Duckworth 1993, p.17)
- [14b] The riddle calls upon the hearer to guess what is meant by a given description. A schoolbook of ancient Babylon, with the earliest riddles known, asks:
 What becomes fat without eating,
 What becomes pregnant without conceiving?
 [Answer: a rain cloud.] There are riddles in almost every language known, many in Anglo-Saxon, which were propounded to the warriors at their feasts and some of which still puzzle scholars. The riddle plays a part in legend too . . . (*Encyclopedia Britannica* 15th edn.: 'Word and Letter Games')
- [14c] One of the most striking, and for some even frightening, features of living in Britain at the time of the Falklands crisis was the speed and scale of the emergence of nationalistic support for military action to recapture the islands. Reactions in Argentina to the capture of the Malvinas appear to have been very similar. (Fraser & Gaskell 1990:4)

All of the underlined NPs in [14a], [14b] and [14c] are used independently exophorically though they are used to refer to the same referent in each example. In none of the above cases is there a textual dependency between the pair of NPs: the interpretation of the subsequent one doesn't depend on the preceding one in the network and the definiteness of the subsequent expression doesn't indicate a discoursal relation to an antecedent, as shown in the case of [14b] or [14c]. The co-reference between each pair can only be inferred.

I have clarified the issues of co-reference and co-interpretation and offered a more flexible discoursal networking system than the ones that are commonly assumed. In the scheme I proposed in 3.2.8, the new additions complement the well-known discoursal linkage through anaphora, cataphora and lexis (cf. Quirk et al. 1985:1438ff;

Greenbaum 1996:374). As a result, the expanded system reflects the discourse relations in English more truthfully.

At one end of the spectrum of my system is the lone introductory expression, which is neither co-referred nor co-interpreted in the discourse and, therefore, a special case for discourse network, as shown by those underlined NPs in [15]: the referents are not to be talked about again in the rest of the book.

[15] To Bee, Jane, John, Kiaran, and Ruthie, with love (the dedication page of Honderich 1995)

At its other end are instances like those in [14], where there is a co-referential relation without textual dependency, and those in [16], where the interpretation of the second underlined NP depends on the first one but the two don't share a referent: a co-interpretational relation without a shared referent.

[16] fox I suppose would take a sitting hen but I mean they're so scarce compared with the abundant red grouse around that they're far more likely to find those (SEU-S-10-08-178) [a single potential referent - class generic referent]

The complication in identifying discursal relations lies in the fact that form alone is not sufficient to be relied on in pinning down two co-referential or/and co-interpretational items. Textual reference assignment is also very much the result of inference with the context. In order to capture different types of relations, one has to infer from both the form of the expressions in a discourse and the types of the referent that they are used to represent. In Chapter IV I have developed another system: a taxonomy of types of representational referents of noun phrases so as to complement the discursal networking system specified in Chapter III.

In this system (cf. 4.2), the interpretation of a noun phrase consists of a series of assumptions or implications that we infer from the interaction between the context and its particular conceptual content. When a noun phrase is used just to convey some

descriptive (conceptual) content and it cannot be co-referred to in the discourse, it is used descriptively, as shown by the underlined NP in [17]:

[17] I tell you what I'll buy you a Cherry B if you are a good boy (S1B-021-87)

On the other hand, a noun phrase can be used to refer to an entity, which can be co-referred to in the discourse. In modern human verbal activities, a referent is often only a mental representation though in evolutionary and developmental terms the physical counterpart of such a mental representation once had its primacy, when primitive people were struggling against the physical surroundings for their survival or when an infant first linked the sound 'mama' to its visual perception of its mother. This fact implies that we don't have to know the physical states of affairs that a sentence is used to describe and constantly verify the contents of a sentence against the real world in order to make use of it for our communicative purposes.

When a noun phrase is used to refer, there are many potential implications we can draw for the referent as assumptions for necessary inference. Once such a noun phrase is used in a discourse, no matter what it is used to represent, it has acquired a discursively existential implication, as opposed to the case of descriptively used NPs. This simply means that the NP can be textually referred to by another NP, as in 'A man came in and he sat down', where the NP 'a man' is used to refer and its referent can be co-referred to by another NP 'he' in the same text.

Then according to our understanding of the different textual mode we are encountering, we will draw different textual mode implications to suit our needs in making inference. For example, when an NP appears in a non-factual text, such as the fairy story in [5] above, we may draw a non-factual implication for it so that in later inference we allow more possibilities. By contrast, our interpretation of noun phrases in a factual text will be accompanied by a factual implication, which will confine our interpretation within the factual mode of our coherent belief system. Any discrepancy with our mental schemas will prompt additional rounds of inference involving further

assumptions which are not part of the default schema, as has been shown by examples like [6].

If there isn't any clue to indicate that the referent is a particular entity or particular entities, then we draw a potentially existential implication for it, which means the referent simply belongs to the class denoted by the head noun, as shown by the underlined NPs in [18]:

[18a] Your sight can be tested only by a registered optician (optometrist) or an ophthalmic medical practitioner. (W2D-001-2)

[18b] Okay here's just a few of the areas where collisions of electrons with molecules play an important role (S2A-028-8)

This implication subsumes what is traditionally called non-specific reference (cf. Greenbaum 1996:243ff) or the attributive use of an NP¹.

Otherwise, a particularised existential implication can be drawn for the referent of an NP on the ground that something has happened to the entity in question or the entity has done something, both of which presuppose the existence of a particular entity. The underlined NPs in [19] are such examples, which are traditionally regarded as having specific reference (cf. Huddleston 1984:254; Greenbaum 1996:243ff):

[19a] I saw a newspaper caricature of somebody which simply showed his sort of shadow (S2A-057-64)

[19b] Appointed - An American, Carol Bellamy, *has won* the contest to head Unicef. (*International Herald Tribune* April 12, 1995)

In fact, the traditional specific / non-specific distinction is just made on the basis of some particular implications inferable from certain contexts as part of our default schemas. Not only are the criteria for the distinction shaky, as I have argued in 4.1.3, but there is no principled reason for such a distinction to be made exceptionally prominent as it is in the traditional grammar or semantics. Consider examples in [20]:

- [20a] A great black and yellow rocket stood in a desert. (from Beaugrande 1980:42)
- [20b] The same rocket was not at the same time travelling in the sky.
- [20c] Two red flares rose as a signal to fire the rocket. (from Beaugrande 1980:90)
- [20d] The two red flares are noticeable enough for the people who launch the rocket.
(pointed out in Beaugrande & Dressler 1981:107 as the result of the incidental inference from reading 20c)

Assumptions like [20b] and [20d] are just some of many possible contextual implications made by the reader of [20a] and [20c] and are of equal importance as those ‘specific’ or ‘non-specific’ implications before they are made actual use of. They are negligible when they are not the focus of relevance. Indeed, when a particularised existential implication is in conflict with other contextual implications, it may be overridden.

For example, traditionally the underlined expression in the following example can be construed as specific (‘If these Aussie girls have had sex with “a married man”, then there must be such a man’):

. . . David Lewis, of Ipswich, Qld, was impressed to read in *Cosmpolitan* that ‘almost a third of single Aussie girls have had sex with a married man’. ‘My God, who is this guy?’ Lewis asks. (*The Australian Magazine* May 18-19, 1996)

However, there is a stronger value-shifting implication (cf. 4.1.8) in the interpretation of the underlined NP here which overrides the particularised implication. That is, there doesn’t exist such a particular married man, the intended referent of ‘this guy’ in the above quote. This example shows that my system can accommodate cases which cannot be catered for by the traditional notion of ‘specificness’, which can only predict that in the above context there must be a particular referent for the NP ‘a married man’, which makes exactly the same mistake as David Lewis of Ipswich did.

A number of other implications can be developed in association with each of the above-mentioned implications: discursively existential implications, textual mode implications (e.g. factual vs. non-factual, etc.), and potentially or particularised implications. I distinguish a ‘sub-class’ implication from the implication resulted from its combination with different generic interpretations, which belong to a group of data described in literature as ‘sub-class generics’ or ‘taxonomic reading’ (cf. Burton-Roberts 1989a; Declerck 1991a; Krifka 1994; Krifka et al. 1995). If we infer from the context that the referent is (some specimens of) a sub-type of the class denoted by the head noun, then we draw a sub-class implication, as shown in the case of the underlined NPs in [21]:

[21] Our shop is planning to import an Italian shirt / some German wines but we seem to have problems in choosing them. [potentially existential implication + sub-class implication]

We interpret ‘an Italian shirt’ and ‘German wines’ in [21] as ‘(some specimens of) a type of Italian shirt’ and ‘(some specimens of) some types of German wine’, respectively. Since there isn’t a generic implication attached to either of the referents, the referent is non-generic.

Researchers have noticed a functional use of noun phrases, where the referent of a singular NP shifts (cf. 4.1.8), such as the underlined NPs in [22]:

[22a] The sex police patrolled the lift doors around the clock. A green-uniformed officer of the Public Security Bureau would stand in the lobby of the Jingao Hotel to ensure that no Chinese ladies were insulted by western men. (*The Sunday Times* 26/3/96)

[22b] Between [Cardinal Francis] Spellman and his nephew, Ned, the fresh-faced young ‘nieces’ always in Joe’s [Kennedy] company were a joke. The night before the lunch was no exception. “I said, ‘Uncle Frank, I saw Joe Kennedy last night having dinner at Pavilion,’” Ned Spellman recalled. “He said, ‘Was he with his niece?’ He had a big smile on his face.” (extract from *The Sins of*

the Father by Ronald Kessler, London: Hodder & Stoughton, *The Sunday Times* 28/4/96)

In such cases we can draw a value-shifting implication for the referent, which is collectively a multi-member set but at any one moment is a different individual.

If the speaker intends her addressee to make use of a link between an NP that she is using and a particular entity that she intends him to identify or pretend to identify (as some fiction writers treat you as an old friend when they begin their stories), then we can draw a referential implication for the referent. In fact, this is the norm with all homophorically used definite NPs, as shown by the underlined NPs in [10] above. When an indefinite NP is used in this way, it is usually associated with some extra effects because the extra effort that the speaker demands from the addressee by using an indefinite NP instead of a definite one for a familiar entity needs to be compensated for to be justifiable. In [23] the speaker, Alexander in the TV series 'The House of Eliott', used 'a very beautiful lady' instead of 'you' to refer to his addressee, Evie:

[23] Some prints I put out have been purchased by a very beautiful young lady.

By indirectly paying Evie a compliment in this way, Alexander could avoid the risk of embarrassing her, which is important for achieving his goal: to approach Evie without making her feel uncomfortable.

There are four other important implications, which are related to generics and will be discussed in my summary of Chapter VI below.

The system I have established in Chapter IV has covered all the major issues in noun phrase interpretation. Combining it with the discorsal networking system in Chapter III, I can bring out some cognitively significant features in the interpretation of a noun phrase in relation to its discorsal behaviour. For example, only when NPs are intended to be interpreted in certain ways can they be grouped in a network without textual continuity or dependency between them, as shown by the examples in [14] above

and in [24] below: none of the underlined expressions depends on another for its interpretation.

[24] Older men, you may have noticed, have a new spring in their step. Their bottoms may wobble, they may be unmoved by the lyrics of Take That, and The Daily Telegraph crossword may be their idea of youth culture, but older men are the coming thing. They are not just in demand as sugar daddies or to pass on the benefit of their experiences, either. With our young men dropping like flies, they are in demand for sex and romance . . .

No, life is never dull as an older man . . .

The older man is well represented in a list reported last week, compiled by Hollywood Reporter magazine, of actors thought to guarantee success in cinemas across the world. (*The Sunday Times* 14/5/95)

In my system of NP interpretation, the underlined NPs in [24] all have a potentially existential implication, drawn from the contextual clues and marked by the feature 'A':

'older men': β .I.A.b

[discoursally existential; factual; potentially existential; member generic]

'an older man': β .I.A

[discoursally existential; factual; potentially existential]

'the older man': β .I.A.c

[discoursally existential; factual; potentially existential; class generic]

The underlined noun phrases in [24] form a network in a discourse through their conceptual content. There isn't an agreement in number between them, nor is it necessary for some of the expressions in the network to be definite to indicate a textual dependency. In my discorsal networking system, the relation between the first and second NPs in [24] can be captured by the feature combination '--ps(1)' [indefinite - indefinite; plural - singular; identical heads], and the relation between the

second and third NPs is captured by the feature combination: ‘-+ps(1)’ [indefinite - definite; plural - singular; identical heads].

Just as one word class can have different syntactic functions, so one type of formal discoursal combination can be realised by conceptually different discoursal relations. The systematic analyses introduced in Chapters III and IV are designed to complement each other to capture such differences. For example, the discoursal combination ‘++ss(1)’ [definite - definite; singular - singular; identical heads] accommodates at least three types of conceptual relations that might interest us:

- [25a] <#79> The Prime Minister met Chancellor Kohl in Germany today to talk about the two issues dominating his government the economy and the Gulf War <#80> John Major said he was optimistic about a satisfactory agreement over European economic and monetary union <#81> Herr Kohl indicated Germany might give more money towards Allied costs in the Gulf <#82> Our political editor Eleanor Goodman reports from Bonn on the Prime Minister’s visit there (S2B-002-79ff opening of a news bulletin) [homophoric introductory expression - anaphoric co-reference to the same particular entity]
- [25b] He overtook a wheelchair pushed by two boys. The woman in it ordered them to make haste; she had an authoritative voice. Cosmo said, ‘Can I lend a hand?’ and, pushing, asked, ‘What’s the picnic in aid of?’
‘It’s not a picnic, it’s a ram roast,’ said the woman in the chair. (W2F-018-58ff) [esphoric introductory expression - anaphoric co-reference to the same particular entity]
- [25c] The tiger is the largest and strongest of the big cats and is widely distributed in Asia from Persia to China and from India and the East Indies to Siberia and Manchuria. An adult male may weigh up to 640 pounds and be seven feet long excluding the tail; the female is smaller. The tiger frequents grassland, swampland and forests. Its prey includes antelopes, cattle and some birds. The tiger hunts alone at night and kills about thirty victims a year. (*Woburn Wild Animal Kingdom*, Norwich: Jarrold & Sons 1986) [homophoric

introductory expression - homophoric introductory expression; discourse network without textual dependency]

Similarly, with the discoursal combination '--ss(1)' [indefinite - indefinite; singular - singular; identical heads], there are also at least three types of conceptually different relations that might interest us. Because of the indefiniteness of the second expression in the combination '--', there is no textual continuity in any of the relations so signified in the system.

[26a] Wednesday was as I think I told you written off due to a hangover . . . 28.7.91

Oh dear! I seem to have a hangover yet again . . .

A hangover is worse in 32 degrees of heat. (W1B-005-102ff) [a particularised entity - a potential entity]

[26b] If a noun-phrase does not consist of a single pronoun, or a pronoun with a relative clause attached to it, the principle word it contains will be a noun. It may contain more than one noun: a noun-phrase may be part of a longer one.

(*Grammar & Style* by M. Dummett, London: Duckworth 1993, p.17) [a potential entity - a potential entity]

[26c] Mary bought a camera last week and sold a camera this week. [a particularised entity - another particularised entity, as it is intended to mean in Greenbaum & Quirk 1990:80]

The combination '-+ss(1)' [indefinite - definite; singular - singular; identical heads] can also have three conceptually different relations:

[27a] A woman sat on a rock dressed in anorak and jeans and wellington boots. She had a dog at her feet. *The dog* was watching its mistress, who was watching him. Cosmo could not see *the woman's* face but he thought, She will do.

(W2f-018-117) [a particular entity - anaphoric reference back to the same entity]

[27b] A guest arrives at a restaurant completely unaware of any dress code. Then, at the entrance, he is enlightened: 'Sorry Sir, gentlemen are required to wear ties in

our restaurant.’ One would think that at this point, the guest would be politely tossed out. But unfortunately, a more severe punishment is in store for him ... (*The Economist* Feb. 6, 93) [a potential entity - anaphoric reference back to the same entity, based on the textual dependency]

[27c] The secret behind the success of the male pill is the discovery that a weekly dose of the male hormone testosterone makes a man temporarily infertile. In an extraordinary paradox, this boost of testosterone baffles the brain into thinking the man’s testes are working full out, when they are not. (*The Sunday Times* 29/10/95) [a member generic entity - anaphoric reference back to the same entity, based on the textual dependency]

So can the plural counterpart of ‘-+ss(1)’: ‘-+pp(1)’ [indefinite - definite; plural - plural; identical heads] have conceptual variations:

[28a] In case I was tempted to gloss over certain thoughts, I decided to share the diary which had helped me admit to myself what I was now admitting to the listeners. Here are some of those thoughts. (W2B-001-116) [particular entities - anaphoric reference back to the same entities]

[28b] ‘When you soak beans in cold water, the beans are actually still alive and their cell walls are designed to be a very good barrier - to take water in, but not to let the seed nutrients out.’ (*International Herald Tribune* 4/21/94) [member generic entities - anaphoric reference back to the same entities, based on the textual dependency]

The combinations with the feature ‘2’, which indicates the transition from a more specific head noun to a more general one, such as ‘++ss(2)’ [indefinite - definite; plural - plural; specific - general] can have at least the following two conceptual realisations. The networking pair may consist of two NPs with the same particular referent, as in [29a]:

[29a] What is attempted in the following volume is to present to the reader a series of actual excerpts from the writings of the greatest political theorists of the

past; ... The book does not purport to be a history of political theory, with quotations interspersed to illustrate the history. (Hoey 1991, p. 5) [a particular entity - anaphoric semantic dependency and co-reference to the same entity]

On the other hand, they may be two generic expressions connected with an anaphoric semantic dependency, as in [29b]:

[29b] As a much-loved food of the wealthy nations, and a staple for much of the Third World, the banana, as a commodity, is the stuff of cross-border conflict and trade war.

The European Community has certainly been delivered a reminder of the passion that the tropical fruit can generate . . . ('The great European banana split', *The Times* March 3, 94) [a generic entity; anaphoric semantic dependency]

As we have noticed before, expressions used to refer to potential or generic entities don't have to have a textual dependency on each other when they have the same heads, captured by feature '1'. With similar cases but indicated by feature '2', there has to be a semantic dependency between such a pair. This dependency has a textual continuity in that the anaphoric 'the tropical fruit' means 'the same TYPE of tropical fruit, namely, the banana, that we have just been talking about'. The dependent expression, 'the tropical fruit', has a particular sub-class interpretation.

In my system the co-interpretational relation can be captured by certain combinations of features. The following examples all have the feature of either '2' or '3', indicating the transition from a more specific head to a more general one, or vice versa:

[30a] Once I watched a man at the counter in a *fish-restaurant*. Sushi and sashimi - the famous raw fish of Japan - comes in many forms and cuts, and it takes about ten years for a man to reach the counters of a first-class establishment. (*The Land of the Rising Yen*, by George Mikes) [particular entity - potential entity;

implicitly anaphoric semantic dependency] [--ss(2): indefinite - indefinite; singular - singular; specific - general]

- [30b] *Dolphins* are still a common sight in the Gulf, and one of my most memorable experiences was watching them from the prow of an Arabian fishing boat, or dhow. Two sleek, grey bodies were effortlessly riding our bow-wave just a foot or so beneath the surface. (W2B-029) [potential entities - particularised entities] [--pp(2): indefinite - indefinite; plural - plural; specific - general]
- [30c] Labour MPs have been told that beards cost votes. Why, asks ROLAND WHITE, is facial hair given such a tuft time? (*The Sunday Times* 4 Feb., 1996) [potential entity - potential entity] [--pn(2): indefinite - indefinite; plural - noncount; specific - general]
- [30d] If sexual intercourse began in 1963, as Philip Larkin claimed, it was the pill that ushered it in. The arrival of a contraceptive that was reliable, easy to use and under female control, put men and women on an equal sexual footing for the first time in history. (*The Economist* Dec. 25, 93 - Jan. 7, 94) [class generic entity - class generic entity] [+ss(2): definite - indefinite; singular - singular; specific - general]
- [30e] Other rare birds had a mixed season. Numbers of bitterns continued to decline and corncrakes failed to breed in Northern Ireland for the first time. (*The Times* Oct. 8, 94) [sub-class entities - class generic entities] [--pp(3): indefinite - indefinite; plural - plural; general - specific]

Unlike the co-reference between two NPs with the same particular referent, which requires that the expressions be in number agreement, two expressions referring to potential or generic entities can maintain a semantic continuity between them when they disagree in number, as in [31a] and [31b], or even disagree in both number and definiteness, as in [31c]:

- [31a] As much as any animal can be, the saola is publicity shy. For thousands of years, small herds of these gentle, goatlike creatures munched their way through the mountainous grasslands of Indochina, drawing so little attention that the outside world had no hint of their existence. (*International Herald*

Tribune 11/30/94) [++sp(2): definite - definite; singular - plural; specific - general]

[31b] The French know there is an oyster for every taste. For value for money and a superb creamy sweet flavour, opt for the increasingly fashionable papillon or butterfly oyster. These small, plump crinkle-shelled creuses come from the oyster beds of Marennes, near Royan, France's largest oyster producing region. (*The Times* 4/15/94) [++sp(2): definite - definite; singular - plural; specific - general]

[31c] As a top predator, tigers need a great deal of forest. If a community commits itself to saving a few dozen tigers, then it also commits to preserving hundreds of square miles of jungle - which can itself be a crucial resource for a wide range of products, from timber to tourism revenues. In the process, the future of the other plants and animals living alongside the big cat is also guaranteed. (*The Independent* 14/9/95) [-+ps(2): indefinite - definite; plural - singular; specific - general]

With the help of the features explicated in the two systems developed in Chapters III and IV, we can discover and classify many more such varieties, as I have demonstrated above, which will greatly increase our understanding of how noun phrases are related and interpreted in discourse. The exploration of such regularities will certainly have pedagogical implications since it will enable us to establish a systematic inventory of discursal networks for students to learn from.

Chapter V is a review of some significant works done on generics. Robert Lowth commented on the generic use of 'man' as early as 1762 and then not until the end of the 19th century did Henry Sweet expand in his *New English Grammar* (1891-98) the observation to the generic use of bare plural NPs. Hendrik Poutsma (1914-29) made a further contribution by recording the generic use of singular definite and noncount noun NPs. He also introduced the notion of a limited generalisation, which applies to modified noun phrases. In his seminal work *A Modern English Grammar on Historical Principles* (1919-49), Otto Jespersen first introduced the term 'generic' for this group of data and established a first taxonomy of generic expressions based on their

syntactic features. Paul Christophersen (1939) contributed to the study by offering us a psychological explanation of the use of the English articles. Both Neil Smith and Noel Burton-Roberts (1976; 1977; 1989a) treated generics in the framework of generative linguistics. Smith's work (1975) shows that 'no standard-theory treatment of generics can be adequate' and therefore calls for an inferential treatment. Gerhard Heyer's (1985) formal account of generics offered insights from the tradition of continental philosophy.

The framework explored by Renaat Declerck is set in Gricean pragmatics and for the first time emphasised the importance of inference in interpreting generic expressions. Carlson & Pelletier (ed. 1995) represents the achievements of formal semanticists and AI researchers in this area, which I have commented on in relevant parts of this thesis. My present study not only has been built on the strengths of the grammatical, semantic, pragmatic and philosophical traditions represented by the above-mentioned works but also has answered many key questions raised in these works. Chapter V has paved the way for a new account of generics built in an inferential framework.

Chapter VI deals with generics proper, which consist of four different groups of data traditionally gathered under this topic. The first group, member generics, has puzzled researchers most. Due to the economy of human cognition, member generic expressions are used for referents which are dramatically different from each other in their quantification, as is illustrated by [32a] and [32b]:

[32a] Isosceles triangles have two sides of equal length.

[32b] Dugongs only produce one calf every three to six years.

If uttered on appropriate occasions, either [32a] or [32b] can be used to make a statement, when at least one proposition is asserted. The underlined NPs in them are of the same form: plural indefinites. Though [32a] and [32b] share the basic 'subject-predicate' structure and their subjects are of the same type of NP, the quantification in their intended interpretation is very different. Namely, 'isosceles triangles' in [32a] means 'every member / all the members of the set referred to by the expression' while 'dugongs' in [32b] means 'at most less than half members of the set referred to by the

expression'. Such sameness in form and difference in interpretation cannot be explained by a decoding model of communication, nor captured by formal semantics.

An inferential model of communication can offer a much more satisfactory explanation to the puzzle. The hearer interprets the expression in a context formed by the most accessible assumptions triggered by the clues available to him. For example, the schema of 'an international ski-jumping competition' will contain an assumption like 'The number of the athletes from each country that rise to the top is small'. The conclusion made from inference with such a premise certainly will not lead to a universal quantification of the referent, i.e. all the Finns, but to a very limited subset of this class. By contrast, the interpreter of [32a] has to tighten the referent of 'the isosceles triangle' to the universal quantification in order to make the proposition expressed in it applicable to solving problems in geometry, which is a well-formed system and doesn't allow exceptions. Therefore, the mechanism of interpretation is to achieve just enough effects without unjustifiable effort so that one can fulfil one's cognitive goal efficiently.

Member generics have two main characteristics, which are only concerned with narrow content of meaning: the pragmatically determined quantification of members of a class and the significant link between the predicated property and the generic referent in question. They are speaker-oriented but at the same time has to be recovered by the hearer. Hence in [32a] and [32b] the quantification of each referent is what we have good reason to believe the speaker to intend. As examples in [4] show, London taxi drivers may have questioned the validity of the statement that long spells behind the wheel can make men infertile with their own fertility record, but the statement was still construed as intending to warn any man who spends long hours driving against the risk of becoming infertile. Now let's look at the second yardstick for measuring member generics: whether the link between the predicated property and the generic referent in question is believed to be a generalisation. This criterion runs along a gradient between a non-specific and a member generic reference.

The difference between a non-specific and a member generic implication is a tricky one (cf. Chesterman 1991:78) and no attempt has been made to differentiate the

two by other researchers. Because of the difficulties in distinguishing the borderline cases on the gradient, some grammarians simply don't distinguish them: an overlapping range of data is often grouped together under one heading: classifying use (cf. Chalker & Weiner 1994:62) or even generic (Jacobs 1995:109)². My system of NP interpretation offers a practical approach to identifying the member generic expressions and is equipped to cater for borderline cases. In my system, this group of data all have a potentially existential implication first; then if we have sufficient reason to add a member generic implication on top of it, we can.

At one end of this gradient are non-specific cases. Intuitively, we don't count as generic 'a computer' in 'I can't afford a computer' or in 'A computer will be available in every classroom in the country'. This is mainly because we don't feel that these statements are about something that is salient in some way to the class of computers. Therefore we stop after having drawn a potentially existential implication for the referent of 'a computer' in the above two cases. At the other end of the gradient, a typical member generic interpretation focuses on some property that is perceived as being characteristically possessed by the members of a class, such as the referent of the NP 'birds' in 'Birds fly'. If the speaker intends that the predicated property is in some way significant to the members of the class denoted by the head noun, then we score high in our inclination to drawing a member generic implication for the referent - [33a] vs. [33b]:

- [33a] They advertised for a three-bedroom apartment. (from Jacobs 1995:109, classified as 'generic') [Only a potentially existential implication can be drawn because we don't see any salient connection between 'a three-bedroom apartment and the fact 'some people advertised for it']
- [33b] The secret behind the success of the male pill is the discovery that a weekly dose of the male hormone testosterone makes a man temporarily infertile. (*The Sunday Times* 29/10/95) [On top of a potentially existential implication a member generic implication can be drawn because we can see a causal link is intended between 'a weekly dose of the male hormone testosterone' and 'a man becomes temporarily infertile'.]

A rational speaker cannot be taken as intending to impose a significant relation linking ‘a three-bedroom apartment’ and the accidental property of its being advertised by somebody. Therefore, I would regard the underlined NP in [33a] as only non-specific, or having only a potentially existential implication in my system. By contrast, it is legitimate to interpret ‘a man’ in [33b] as member generic because we know that in this case unless a significant number of the male population responds in the same way, there isn’t a rationale for producing a male contraceptive pill based on the mechanism.

Many researcher have pointed out that member generics are not to be confused with cases of universal quantification. My criteria for member generics have the fine analytic power to isolate cases where is universal quantification but no genericity. On the one hand, the underlined NPs in [34] are universally quantified, as shown by [34a’] and [34b’]:

[34a] Your sight can be tested only by a registered optician (optometrist) or an ophthalmic medical practitioner. (W2D-001-2 - regulation: *NHS sight tests and vouchers for glasses*)

[34b] Nearly all of the governments of countries with tiger populations have passed laws to protect tigers or outlaw hunting. (*The Independent* 14/9/95)

[34a’] For all / any x , if x has the legal capacity to test your eye-sight, then x must be a registered optician (optometrist) or an ophthalmic medical practitioner,.

[34b’] For all / any x which is a tiger in a country with a tiger population, x is protected by laws passed by all of the governments of countries with tiger populations.

On the other hand, there isn’t a perceived significant tie between the universally quantified referent and what is being said about it in the utterance. For example, in [34b], the relation between being a tiger and the property of being protected by governments is held to be trivial to the nature of the species. So the referent of ‘tigers’ in [34b] is not considered to be member generic but non-specific and we can

only draw a potentially existential implication for the referent. The same is true in the case of ‘I love roses’, in which the referent of ‘roses’ is also non-specific even though there is nothing to stop one from claiming to love all the roses in every possible world. Likewise, I exclude the so-called ‘habitual’ sentences like ‘John walks to work every day’ from my treatment of generics.

A generalisation doesn’t warrant genericity. In [35], another borderline case, a generalisation has been made about ‘a glass of wine’ in relation to ‘me’ but the predicated property, ‘making an accidental “me” incapable’, can hardly be considered as significant to the class of ‘glasses of wine’.

[35] A glass of wine would make me incapable, but not drunk. (W2B-001-50 - autobiography)

Therefore, I draw only a potentially existential implication for the referent of the underline NP in [35].

Measured by the second criterion, what Rouchota (1994a:444) term as ‘functional use’ of a definite common noun phrase is really a member generic statement, quoted here as [36]:

[36] The President changes every four years.

If we suppose that [36] is a part of a republic’s constitution, then the NP ‘the President’ is used to refer to the president of that country intensionally. We have good reason to think that ‘changing every four years’ or ‘being elected every four years’ and the position of ‘the president’ are characteristically linked and therefore we may well draw a member generic implication for the referent. So will we do with the underlined NP in the following example because what is being predicated is believed to be typical of the topic subject:

[37] Everyone has always pitied *the downtrodden politician's wife* for having a dreadful job. Not only does she have to put up with endless lonely nights in the constituency, drinking cocoa while her husband works in Westminster, but there is also the public humiliation of having to stand by her man when he is caught with some bimbo. (*The Times* March 8, 96)

In my second criterion for member generics, apart from the issue of the tricky quantification and the perceived intrinsic link, another point is whether the referent is otherwise generic, which relates to the question of what kind of referent we call 'generic'. The prerequisite for a generic referent is that it must be multi-membered. This property joins with the value-shifting implication illustrated in [22] above forming another generic-nongeneric gradient. At the non-generic end of this gradient are examples like Frege's: 'The King of Prussia was an old man and now is a young man' or [22a], in which no generalisation has been made of the referent of either 'the King of Prussia' or 'A green-uniformed officer of the Public Security Bureau'. However, [2e] in 4.1.8 is a borderline case in that there is a generalisation made of the referent of 'my cat'. Namely, the property of 'being looked after until its end by the speaker' is uniquely related to the referent of 'my cat', which are the individual cat having successively belonged the speaker. So now we can conclude that the referent of 'my cat' is a multi-member set and a generalisation has been made of it. If we accept that the well-formedness of a class depends on our cognitive goal only, i.e. things form a class whenever they share something in common which is relevant to the goal of a particular cognitive activity, then we can also draw a member generic implication for the referent of 'my cat' in that example.

Along these lines, another puzzle in generics can be solved, which was raised in Krifka et al. (1995:1.3): on the generic interpretation, why [38a] is acceptable while [38b] is not:

[38a] The Coke bottle has a narrow neck

[38b] ??The green bottle has a narrow neck

Their proposed answer is that ‘there exists a well-established kind of the Coke bottle, but there is no well-established kind of the green bottle’. This answer doesn’t explain where well-formedness comes from. Actually, when we think that [38a] is acceptable, we have a schema of a prototype Coke bottle in our mind, which has a characteristic narrow neck. We find [38b] unacceptable because we don’t have a cognitively significant link between a green bottle and a narrow neck as part of our world knowledge. However, this doesn’t imply that green bottles can never be a well-formed class. The tautological statement in [39] is perfectly acceptable, albeit a bit archaic in form, as member generic when one wants to assert the proposition expressed by it as an indisputable fact, because we know that being green is an intrinsic characteristic of the class of green bottles:

[39] The green bottle is green.

Both Poutsma (1914-29) and Quirk et al. (1972) have mentioned ‘limited generics’. It is a notion based on a restrictively modified NP, whose referent is, therefore, a sub-set of the class denoted by the head noun. For example, the underlined NPs in [40] are used to refer to a sub-set of the class denoted by ‘the male’, which can be used to refer to all the male animals.

[40] Lord Winston added: ‘I don’t think the human male is redundant. I think the human male is unnecessary [in human reproduction]’ (*The Daily Telegraph* March 7, 96)

In terms of human cognition, limited generics are the norm because almost any class can be considered as a sub-set of a bigger class. That class happens to be named by one noun instead of a modified NP is to some extent accidental, considering the variations in this aspect among different languages.

After member generics, the second major type of generics is class generics, which involve data about a class proper. Though sharing the same name ‘generic’, the interpretation mechanisms of the two types are very different in that a class generic

implication can be drawn once the various kinds of clues I have summarised in 6.2.2 are identified directly in the co-text. One such example is [41].

- [41] Shortly after Alexander Graham Bell *invented* the telephone people started to wonder if it was possible to send pictures over wires. (W2B-034-10)
[particularised existential implication + class generic implication]

However, the cognitive significance still plays a part in the interpretation, especially in the type of clue which I call ‘the epitome of a class’:

- [42] Lord Winston, professor of fertility studies at Hammersmith Hospital, London, and Britain’s leading expert on test-tube babies, said: ‘The current 1990 legislation would forbid this [cloning technique] being used in the human . . .’
(*The Daily Telegraph* March 7, 96)

We take such examples as class generic because we are aware that no matter how small the number of members of the class in question is involved, the impact is considered to be at the class level. By applying the technique to even one human egg, it will raise an ethical question concerning the whole human race.

Member and class generics are distinguished by the different mechanisms involved in their interpretation. In practice, one noun phrase can be used to represent the two types of referents at the same time:

- [43] Some sharks, including the great white, the mako and the thresher, are *warm-blooded*. (*International Herald Tribune* Dec. 10, 92) [potentially existential implication + sub-class implication + member generic implication]

The NP ‘some sharks’ is used to refer to some types of sharks, such as the great white shark and the mako, so it is (sub)class-referring. At the same time, it is also used to refer to some individuals because we believe that the predicated property, ‘being warm-blooded’, is a property of an individual shark.

In the following example, ‘the green-fleshed Ogen’ is class-referring because ‘technically being a cantaloup’ indicates the taxonomic status of this class of melons. However, its subsequent co-interpretational NP ‘they’ is member generic because the predicated property belongs to an individual melon.

[44] The green-fleshed Ogen, for instance, is technically a cantaloup. Generally, they have a hard rind, which may be scaly, and broad ribs. (*The Independent* 13/8/94)

As I have mentioned earlier, a sub-class interpretation is not necessarily generic; nevertheless it can be combined with either member generic or class generic clues. A sub-class member generic or a sub-class class generic implication results from the combination of the two implications: sub-class implication + member generic implication, as shown in [45a], or sub-class implication + class generic implication, as shown in [45b].

[45a] Of the reptiles that dominated life on land during the Mesozoic era, about 250 to 66 million years ago, the dinosaurs (whose Greek-derived name means ‘monstrous lizards’) were the most *successful*. (‘dinosaur’, Reader’s Digest Great Illustrated Dictionary)

[45b] Unless steps are taken quickly, the coelacanth, a fish thought to have accompanied the dinosaurs into extinction, really will *die out*, according to zoologists at Max Planck Institute for Behavioral Physiology in Seewiesen, Germany. The scientists are using submersibles to document the decline of the fish in the Indian Ocean, off the coast of Grande Comore Island. (*International Herald Tribune* 4/20/95) [particularised existential implication + sub-class implication + class generic implication]

The NP ‘the dinosaurs’ in [45a] is used to refer to different sub-classes of dinosaurs such as the Brontosaurus, the Stegosaurus, etc. The predicated property ‘being successful’ can belong to each of these sub-classes since they dominated the sky, the land and the sea. On the other hand, ‘a fish . . .’ in [45b] is used to represent a particular sub-class of

fish, the coelacanth, and the predicated property of ‘dying out’ cannot belong to an individual but to a class, so the reference is sub-class class generic.

Since I have treated the discorsal relation of a noun phrase and its representational referent as two separate but interacting factors in noun phrase interpretation, I have been able to distinguish the pronouns used primarily to refer generically from those which inherit generic reference from their nominal antecedents³. The interpretation processes of the two are distinct, as shown by [46a] and [46b]:

[46a] Their silk ones are quite good but they’re dear maintain leger or whatever they call it (S1A-017-336f)

[46b] Affairs can, of course, signify that *a person* is wanting to end a marriage. The affair may be with someone with whom they want to spend the rest of their lives, or it may be with a transitional person who at the time seems important and exciting, but who ends up getting hurt. (*The Trouble with You*, by Zelda West-Meads, London: Hodder & Stoughton 1995)

In [46a] ‘they’ is used to refer generically, meaning ‘the public’ while in [46b] ‘they’ or ‘their’ are used to co-refer with ‘a person’.

Based on the work I have done in this thesis, I would like to further explore some related issues. First, with the help of the criteria I have set for different types of generics we can do some statistical studies of the distribution of generic expressions in different registers of texts, which can in turn be an indication for classifying texts along different dimensions and contribute to the study of register of texts. Second, researchers have noticed that ‘we can use statements that mean something quite general to convey information about specific individuals’ (Larson and Segal 1995:342), as shown by the following example:

[47] Princess Diana was told last night that the Panorama interview could put her private life beyond protection. The veiled warning came from Lord Wakeham, chairman of the Press Complaints Commission . . . he explained: ‘Where a

member of the Royal Family seeks to put a matter into the public domain - through a public interview - that too becomes a matter of national interest . . .’
The Royal Family, he said, was not immune from ‘the rules that govern us all’.
(News of the World 11/19/95)

In [47] Lord Wakeham was seemingly making a member generic statement and in this particular environment it gave rise to contextual implications concerning a particular referent, i.e. Princess Diana, because the audience was expected to know that Diana had just done something, i.e. giving an interview on BBC television, which can be counted as ‘seeking to put a matter into the public domain’. I would like to concentrate on this particular kind of implicature and its special affects in communication.

Notes

Chapter II

1. Cf. Sperber and Wilson 1986; 1995; Wilson and Sperber 1988a; 1988b; 1989; 1990.
2. Here 'utterance' is defined as a sequence of linguistic symbols, whether written or spoken, used in verbal communication to convey a message by a communicator.
3. Here 'the world' is defined as consisting of anything which can be represented in the mind, including existing mental representations.
4. In the case of eavesdropping, we pay attention to utterances not even addressed to us.
5. For ease of exposition, the communicator is referred to as 'she' and the addressee, 'he'.
6. The claim is based on the assumption that people are rational enough for the task because 'humans [sic] beliefs are produced by cognitive processes which are on the whole epistemologically sound . . . as they are, the beliefs of humans allow them to form and pursue goals in a manner which often leads to the achievement of these goals' (Sperber 1990:31).
7. Here I omit the process of reference assignment and disambiguation; see 2.1.8.4 for details.
8. Cf. *Dad, Help me Please: the Story of Derek Bentley* by Christopher Berry-Dee & Robin Odell, Virgin Publishing 1991, UK.
9. '**let (someone) have it**. Slang. . . . esp. to discharge a firearm at (someone)' (*Collins English Dictionary* 1991)
10. This is sometimes called 'exophora', which has been defined as reference 'which point[s] outside the text' (Garrod & Sanford 1994b:3500) or 'reference to the non-verbal context' (Martin 1992:122).
11. This is sometimes called 'homophora', and '[i]t is used when interlocutors' membership in a particular community means that certain participants [expressions - Ni] can be treated as inherently "given"' (Martin 1992:122).

12. This is sometimes called ‘endophora’, which has been defined as ‘reference to the co-text’ (Martin 1992:122), or ‘text-internal reference’ (Garrod & Sanford 1994:3500).
13. Cf. Philip Howard’s column in *The Times* April 1, 1994.
14. The term ‘vegetable’ is not a botanical concept and so is irrelevant here.
15. According to Bach, ‘Conversational implicature is actually a kind of indirect speech act, a special case of performing one illocutionary act by way of performing another.’ (1994b:13)
16. Though Sperber and Wilson have revised their definition of presumption of optimal relevance, they maintain: ‘[i]t is still true that the rational way to go about interpreting an utterance, or any other ostensive stimulus, is to follow a path of least effort and stop at the first interpretation that satisfies one’s expectation of relevance’ (1995:272).
17. Cf. Smith & Wilson (1992:6).
18. Grice’s four conversational maxims are as follows:
 - Quantity: Make your contribution as informative as is required (for the current purpose of the exchange).
Do not make your contribution more informative than is required.
 - Quality: Try to make your contribution one that is true.
Do not say what you believe to be false.
Do not say that for which you lack adequate evidence.
 - Relation: Be relevant.
 - Manner: Be perspicuous.
Avoid obscurity of expression.
Avoid ambiguity.
Be brief (avoid unnecessary prolixity).
Be orderly. (Grice 1975 (1996:159f))
19. The most recent ones include Mey (1993) and Thomas (1995).
20. Larson and Segal in their recent introduction to semantic theory (1995:22) claim

Semantic knowledge . . . is used along with knowledge of phonology and syntax in the parsing processes that deliver the literal context-independent meaning of a perceived sentence form. This knowledge is combined with knowledge of relevant features of context in further inferences to yield an interpretation of the sentence in the context. And it is

combined also with knowledge of pragmatics in yet more inferential processes that provide conclusions about what people are saying.

They accept the role of inference in each stage of utterance interpretation but think that only the third stage, the deriving of 'what was implicated' is the domain of pragmatics. From the context we can conclude that they use 'saying' for 'saying something and meaning something else in addition' - the result of further inference with the directly expressed proposition by an utterance. Cf. Carston 1988a; 1994a; 1994b. Kent Bach (1994a, b and c) has coined the term 'implicature' for the inferentially derived meaning that belongs to the proposition directly expressed by the utterance but he regards it as something between 'what is said' and 'what is implicated'.

21. Lyons (1995:xii) has offered a similar definition, emphasising on the encoded meaning in language: '. . . linguistic semantics is the study of meaning in so far as it is systematically encoded in the vocabulary and grammar of (so-called) natural languages'.
22. Cf. Blakemore 1987; 1992, Carston 1988a; 1994a & b; and Wilson 1991.
23. Glymour (1992:289) also claims: 'Clearly, you can know the truth condition for a sentence without knowing whether the sentence is true'.
24. This is not a decisive argument, by the way. For example, even if we agree that general properties tend to be used of every member of a species, they can still be used of a particular individual. This needn't bother us here because the point I am concerned with is that people do use the notions of truth and falsity in deciding the meaning of an utterance, which relates to its truth-conditions.
25. After all, something 'implausible' in one context can be plausible in another, as shown by Johnson-Laird and Anderson's experiment shown in 2.2.2.2. The point is how the communicator can legitimately expect the audience to think this way and how the addressee can legitimately recover this meaning if it is so intended.
26. I use the term 'generic' here to avoid the universal quantifier, as used in Guttenplan 1986:235. For my theory of generics see Chapter VI.
27. Cf. Cann 1993:8f; Chierchia & McConnell-Ginet 1990 ch. 1; and Larson & Segal 1995:2.
28. Davis has pointed out 'A hearer not only uses general contextual considerations in order to bridge the gap between literal meaning and explicit propositional content; he or she may also use the same kinds of general considerations to revise his or her assessment of a speaker's literal meanings' (1996:132).

29. Sentence meaning is the context-independent meaning linguistically encoded in the expressions forming the sentence and the way the sentence is formed. For example, in English [a] and [b] have the same sentence meaning:

[a] He is a bachelor.

[b] He is an unmarried adult male person.

Sentences with the same sentence meaning can be used to express the same utterance meaning or different utterance meanings. For example, if the communicator means to use the pronoun 'he' in [a] and [b] to refer to the same person, say, Tom, then [a] and [b] will have the same utterance meaning when they are so uttered. On this occasion, both [a] and [b] are used to talk about the same person, Tom, and the same property has been predicated of him. We can also say that the same proposition has been expressed when each sentence is so used. On the other hand, the same sentence can be used to express different utterance meaning on different occasions. If the communicator means to use the 'he' in [a] on one occasion to refer to Tom and on another occasion to refer to Peter and Tom and Peter are names of different people, then the utterance meaning of [a] on these occasions is different.

30. Truth has been taken into account and has been built into the revised definition of 'relevance to an individual' as 'positive cognitive effect', which is defined as an effect that contributes positively to the fulfilment of an individual's cognitive functions or goals:

'Relevance to an individual (classificatory):

An assumption is relevant to an individual at a given time if and only if it has some positive cognitive effect in one or more of the contexts accessible to him at that time.' (Sperber & Wilson 1995:265)

Cf. Section 3.2.1 of Sperber & Wilson 1995, which dealt with relevance and truth, and Wilson 1995, which dealt with relevance and truthfulness.

31. Givón (1993:281) has a similar observation: '. . . as we have seen repeatedly, the notion of "presupposition" that is more relevant in language is not truth, but rather the hearer's presumed belief, familiarity, or even mere quiescence'.
32. According to Evans's investigation, '. . . subjects are much more likely to accept believable conclusions (80% acceptance overall) than unbelievable ones (33% acceptance), irrespective of logical validity' (Evans, Newstead & Byrne 1993:244f). Believable conclusions are those which match the subject's own idea of truth on the relevant issues.

33. Recent psychological experiments show that people have different intuitions on the validity of most syllogisms (cf. Rips 1988:136; 141), so people will use syllogisms which they think valid in their reasoning in spite of what logicians say about them. We have to take this fact into account when we form our theory of utterance interpretation.
34. Cf. Halpern 1990.
35. Here I concentrate on only one particular script, i.e. the ‘murder’ script. It is conceivable, though, that there are several related scripts being activated at the same time. For example, the ones about the trains to Edinburgh and about cinemas in general.
36. Potter in her survey of literature on memory concluded: ‘The dominant form of information in long-term memory is conceptual’ (1990:25) and one major arrangement of information is hierarchical and tends to be categorical, such as ‘oak and maple are trees, trees and flowers are plants, plants and animals are living things, . . .’ (ibid., p. 26).
37. Experts also use information stored in the form of default rules, but on a different level from that of laypeople, because they know more exceptional cases and are particularly interested in them.
38. As for the difference between the linguistic forms such as the underlined NPs in ‘Birds fly’ and ‘All birds fly’, see 6.1.2.5.a.
39. A combinatory interpretation of the sentence is assumed here, i.e. ‘The Chinese nation as a whole . . .’, rather than ‘Every Chinese . . .’.

Chapter III

1. Cf. Burton-Roberts 1976; 1977; Diesing 1992 and many others.
2. Cf. Huddleston 1988:90f; Zwarts 1994:840
3. Definite noun phrases can be subject in sentences starting with *there be*. Breivik’s view is that in such examples ‘there’ ‘can be regarded as a presentative signal’ (1990:150ff). They in general lack adverbials of place or time:

‘I expect that you will want to invite some of your new Army friends,’ she said uneasily, ‘and there are always *your old friends from Cleeve*. We mustn’t forget Frank Pratt-Bingham, must we?’ (SEU-6.3.204-1)

There is you know like *that cashmere rug I've got on my wall* (ICE-GB-S1A-140-219)

Ward & Birner (1995) offers an alternative pragmatic account of this phenomenon.

4. Of 83,661 text units in the one-million-word ICE-GB, 1716 are initiated by a common noun and 2492 are initiated by a proper noun. Of the 1716 common nouns used initially, 718 are plural with s-endings. If we form two rules, suggested by Alex Fang, which are 'Treat text-unit-initial nouns as proper nouns' and 'Treat text-unit-initial nouns with s-ending as common nouns', the chances of affecting the accuracy of common noun tagging by tagging the capitalised singular common nouns as proper nouns will be like the following:

$$1716 - 718 = 998; 1000,000 \div 998 = 0.000998,$$

which is very small. The statistics have been obtained with the help of T-query, a searching program developed by A. C. Fang at the Survey of English Usage.

5. It has been suggested that 'each', 'either' and 'all' can be implicitly definite, as in 'I don't like either (of them)'. I think in this case, like 'any' in 'I don't like any of them', 'either' is still indefinite. The two referents of the pronoun 'either' appear to be particular just because of the limited scope of its quantification.
6. Cf. also Rouchota 1992; 1994a & b for a relevance-based pragmatic approach.
7. See Krifka et al. 1995, 1.3, though they haven't defined 'well-established classes'.
8. In [2b] the underlined NP consists of two proper nouns, but its composition follows a general syntactic rule of NP premodification which also governs the underlined common noun phrase in [2a].
9. I use capitalised words here to represent concepts.
10. In this thesis, 'descriptive content' is used in the same sense as 'nominal content' is used in Blakemore (1992:69-71).
11. Cf. Cormack & Kempson 1982 (1991:546); Donnellan 1978:64.
12. Rouchota (1994:205) held that 'hearers infer that definite and indefinite descriptions imply existence, unless they are instructed not to do so (for instance, in fictional contexts)'. In language understanding, the difference between fictional and non-fictional contexts is not significant, as argued in Stockwell (1992).
13. Prince (1981:234ff) observes that expressions like 'a bus', 'a guy I work with' 'are somehow felt to be new, or unfamiliar to the hearer'. Thus for such expressions 'the

hearer may have had to CREATE a new entity'. Brown and Yule have summarized Prince's observation: 'Brand new entities are assumed not to be in any way known to the speaker and will typically be introduced into the discourse by an indefinite expression' (1983:182). Brown & Yule's claim cannot be right because in examples like [1a] the speaker is introducing a new entity with the expression 'a really nice shirt' and since she's just bought it how one can say that it is not 'in any way known to the speaker'. The same can be said about [1b] and [1d]. It is likely that the word 'speaker' in the above quote should have been 'hearer'. (cf. also Quirk et al. 1985:272; Brown & Yule 1983:189; COBUILD English Usage 1992:1).

14. The term was introduced in Lyons 1977:178.
15. The term was introduced in Lyons 1977:193f.
16. Clark has recently switched from the name 'bridging' inference, which he used in (1977), to the 'the associative anaphoric use' of the definite article (1992:22). The notion of bridging inference is useful to explaining the use of the definite article in 'the exhaust' in cases like the following, where the NP 'a car' can be used as a trigger to a context of which 'the exhaust' is a natural part.

A car just went by and *the exhaust* fumes made me sick (quoted from Clark 1992:22)
17. Cf. Quirk et al. 1985:288ff.
18. In Leech & Short (1981:96) this use is said to create 'a pretence of shared knowledge with the reader, who by implication is already familiar with the surroundings, is already an inhabitant of the fictional world'.
19. For example, when we encounter the word 'brush', we have to rely on our general knowledge to disambiguate whether it means 'a cleaning tool with hairs' or 'small rough trees'.
20. Cf. Lyons 1977:655f; and Halliday & Hasan 1976:71; Martin 1992:122; Halliday 1994:314; Quirk et al. 1985: 5.26 - 32 for different views and classifications on the referential clues of definite NPs.
21. Cf. Brown & Yule 1983:214; Kempson (forthcoming).
22. Such a common noun NP is referred to differently: 'a full nominal expression' in Brown & Yule 1983:214, a 'fully articulated NP' in Coates 1994:3369f, or a 'noun-headed noun-phrase' in Lyons 1995:296.
23. Cf. Levinson 1994:855.

24. The interpretation of the announcement in the underground 'Mind the gap' can be explained in the same way.
25. See Halliday & Hasan (1976:71ff) and Halliday (1993:314) for a somewhat different use of homophora.
26. In Quirk et al. (1985:266) examples like [1] belong to 'immediate situational reference' and those like [2], 'larger situational reference'.
27. That's why Brown and Yule (1983:210) observed that proper names may be used to identify individuals uniquely 'only in specific context'.
28. As was pointed out in Quirk et al. (1985:266), 'the hearer may need to seek clarification through a which- or what-question (with the nucleus on the *wh*-item):
Have you fed the cat? WHICH cat?'
29. Cf. Clark 1977; 1992; Matsui 1994.
30. Both the terms 'trigger' and 'associate' have been borrowed from Clark (1992).
31. See Du Bois 1981:224f; Martin 1992:123. Quirk et al. (1985:268) called this phenomenon 'cataphoric reference'. Lyons (1995:326) called the use of the article in esphora 'second-order reference'.
32. Hawkins (1991:410ff) started interpreting the cases of esphora as the result of the activation of an associative relationship. For example, 'the windows of my house' is interpreted in the same way as we do the sequence 'my house . . . the windows'. This explanation was fine for cases like 'the professor / students in my linguistics class'. Then he had difficulty in explaining why 'the dog in my car' is well-formed while the sequence of 'The man drove past in a car. The dog was barking' is odd, he claimed that such cases, like 'the problem with Bill', asserted a contingent fact. Furthermore, he had to treat 'the bucket which is over there' as a situation established 'through linguistic means' while 'the professor that we were just talking about' cannot literally ESTABLISH one [a previous discourse set], since only previous discourse itself can do that'. Obviously, his explanations of this set of data are not unified.
33. Cf. Brown & Yule 1983:6.3; Quirk et al. 1985:267.
 Though normally we are concerned with the third person pronouns in co-reference, example [3] in 3.2.5.2 can be regarded as a cataphora with a first-person pronoun as the dependent co-referring expression.
34. Quirk et al. (1985:375f) discusses this phenomenon. Martin (1992:123) uses the term 'cohesive cataphora'.

35. Halliday & Hasan (1976:19) use the term ‘explicitly anaphoric’ and ‘explicitly cataphoric’ to refer to the cases where dependent co-referring expressions are pronouns since the interpretation of pronouns in non-deictic context has to rely explicitly on their antecedents.
36. Sells & Wasow 1994:116ff has given a brief account of pronominal anaphora.
37. Cf. Halliday & Hasan 1976:309 for a different approach.
38. They are referred to as ‘anaphoric elements’ in Sells & Wasow 1994:117.
39. Cf. Wales 1989:59 and Leech & Short 1981:108f.
40. That is, in cases when the communicator believes that the addressee has a mental slot for the particular individual. One exception to this sequence is when the person referred to is well-known because of his present position, as in the sequence of ‘the President’ and ‘Bill Clinton’ in news bulletins during Clinton’s presidency.
41. Cf. Sanford & Garrod 1981.
42. Two expression with different heads and without modification can be only extensionally equivalent. For example, in the context of [5b] the expression ‘a swallow’ is extensionally equivalent to the expression ‘the bird’ because they are used to refer to the same entity. But intensionally these two expressions are not equivalent.
43. This phenomenon will be dealt with in the section on generic expressions in discourse (cf. 3.2.8 and Chapter VII).
44. I discuss this phenomenon with [5a] 3.2.5.5.
45. This is similar to cases of generic expressions in discourse (cf. 3.2.8 and Chapter VII).
46. Martin (1992:123) calls this phenomenon ‘cohesive cataphor’.
47. Quirk et al. (1985:375) claimed that ‘the “distant” demonstrative *that / those* can have only anaphoric reference’.
48. In [4a] the colon after the word ‘expected’ is used to ‘precede an explanation or particularisation’ (*Plain Words* by E. Gowers and revised by Greenbaum & Whitcut 1986, London: HMSO, p. 155) and in [4b] the dash after the word ‘wanted’ is ‘the colon’s weaker relative’ (ibid.).
49. Cf. Quirk et al. 1985:375 and COBUILD English Dictionary 1995.

50. In Quirk et al. (1985:375) this type of antecedent is referred to as ‘sentential antecedent’. I call it discorsal antecedent because often the pronoun is used to refer to a piece of discourse longer than a sentence (clause).
51. Cf. Sells & Wasow 1994:116f.
52. This belongs to cases where co-referring expressions are not used to refer to exactly the same referent. I discuss them in 3.2.8.
53. ‘Synonymous and hyponymous expressions’ here includes noun phrases with the synonym or near-synonym or the superordinate of the head noun of the antecedent, or with the most general word of the lexical class the head noun of the antecedent belongs to (cf. Halliday & Hasan 1976: 6.2).
54. People may have different linguistic intuitions about synonyms. The words ‘book’ and ‘volume’ are treated as synonyms in both Reader’s Digest Great Illustrated Dictionary and Oxford Advanced Learner’s Dictionary and the words ‘clown’ and ‘buffoon’ are treated as synonyms in Reader’s Digest Great Illustrated Dictionary.
55. Quirk et al. (1985:1442) regarded the function of some general nouns like ‘event’ used in co-reference as grammatical rather than lexical.
56. In traditional terminology of rhetorics, such relations as illustrated in [7a] and [7b] belong to the category of metonymy. In a broader sense, they can be included in bridging inference.
57. ‘A schema is an organised packet of knowledge that enables us to make sense of new knowledge’ (Harley 1995:228). The idea was first seriously discussed in Minsky 1975 in relation to artificial intelligence and Schank 1982 developed the related concept of ‘memory organisation packets’.
58. Cf. Rouchota’s (1994, 4.5.3f) relevance-theoretic account of descriptions used as the context for processing the utterance.
59. Cf. Halliday 1994:310.
60. For example, in Quirk et al. (1985:272):
 ‘Bob lost a gold watch yesterday, and Bill was wearing a gold watch this morning.’
 Greenbaum & Quirk (1990:80): ‘While identical noun phrases with *the* are taken to be coreferential, this is not the case when the article is indefinite:
 ...
 [2] Mary bought a camera last week and sold a camera this week.’

61. Leech & Svartvik (1994:57) observed: ‘Another method of avoiding sex bias, well established in <spoken English>, is the singular use of *they* . . . This ‘ungrammatical’ mixing of singular and plural is making its way into <informal> writing . . .’
62. I am not sure if the example can be counted as formal or informal writing, cf. 63.

Chapter IV

1. Views from experts on artificial intelligence and linguistics include the following:
 - ‘. . . **refer** - i.e., indicate what entity is being discussed’ (Kronfeld 1990:1).
 - ‘The most distinctive semantic role of NPs, the one most characteristically associated with subject and object function, is to refer ...’ (Huddleston 1988:54).
 - ‘Reference . . . is a relation that holds between speakers (more generally, locutionary agents) and what they are talking about on particular occasions.’ (Lyons 1995:294)
 - ‘The term reference is used to describe one of the actions of a speaker in using language to mean something particular on a particular occasion. The term is used of a relation which a speaker tries to establish for the hearer between an expression used to refer and a referent out there in the world (in the simplest case).’ (Brown 1995:62)
- See also Kronfeld 1990:1.
2. For the importance of context in interpretation, see Sperber & Wilson (1986:132-42).
3. Cf. Lyons 1977:177; Kronfeld 1990:1f; Wilson 1992:177.
4. I emphasize here that whether a referent is real and specific or not is not directly relevant to the process of reference assignment. The influence of ‘objectivism’ is still very strong in the study of linguistic reference. See more detailed discussions on this issue in Stockwell (1995), where he argues against the objectivist position with examples from science fictions.
5. For example, Russell’s Theory of Descriptions (cf. Russell 1905) claimed that because ‘the king of France’ didn’t exist, [1] is false.

[1] The king of France is wise

Strawson (1950) argued that if we utter [1] ‘without in fact mentioning anybody by the use of the phrase, “The king of France”’, or if there is nothing out there to be referred to, then ‘we simply fail to say anything true or false because we simply fail to mention anybody by this particular use of that perfectly significant phrase’ (p. 176). On the same issue, Searle also claimed that ‘whatever is referred to must exist’ (1969:72). Lyons (1995:298) has taken a similar stance: ‘anyone who deliberately violates an existential presupposition in using what purports to be a definite description fails to express any proposition at all.’

6. For example, Hawkins claims

... their [the definite and indefinite article] usage exhibits a sensitivity to an intriguing pragmatic structuring of real world entities [my emphasis] that speakers and hearers exploit when making their references unambiguous to one another. (1994:841)

Quirk et al. (1985) has a section entitled ‘Nonreferring uses of the indefinite article’ (p. 273), which gives the example, quoted here as [1].

[1] Leonard wants to marry *a* princess who speaks five languages.

They call one interpretation of the expression ‘a princess who speaks five languages’ in this example ‘nonreferring’, for ‘it may not refer to anything in reality at all’.

7. My examples follow Givón’s lines of reasoning:

‘Similarly, the object of (a) below can, at least in principle, refer to an existing entity, while that of (b) presumably cannot:

- a. I rode **a horse** yesterday
- b. I rode **a unicorn** yesterday’ (Givón 1993:214)

8. Neale (1990:175ff) claimed that the italicised pronouns are not used referentially in the following sentences because the underlined expressions are not used referentially and they are the antecedents of the pronouns:

A drug addict spent the night here. *He* left a syringe behind.
The inventor of the wheel was a genius. I suspect *s/he* ate fish on a daily basis.
Few students passed the exam but *they* got a first.

In the following two utterances, one is the well-known donkey sentence and the other is from Heim (1983:164), the italicised pronouns are bound variables and are said to non-referential, too:

Every man who bought a donkey vaccinated *it*.
Every cat ate *its* food.

However, in textual reference assignment, what is important is how the addressee links co-referring expressions to their antecedents, which is not affected by the above arguments.

9. There are researchers who define specificity from a discourse point of view, relating to the notion of definiteness (as in Enç 1991), which is not the notion I am discussing in this section. Some other researchers seem to have equated specificity with the use of the definite article. In Section 1.4, Krifka et al. (1995) the specific / non-specific difference is based on the article used in the subject NPs, given that both [a] and [h] are taken as generalizations about lions:

‘a A lion has a mane (characterizing, nonspecific, non-kind-reference)

h. The lion roars when it smells food (characterizing, specific, kind-reference)’

10. By this criterion, the following example in which the underlined expression is said not to be used ‘referentially’ (Neale 1990:175f) can also be said to have a particularised existential implication because the speaker was talking about a particular individual to whom she had attributed the property of ‘spending the night here’. Suppose a person in a badly lit alley noticed a syringe and said:

A drug addict spent the night here.

The physical existence of such a person and whether the speaker has an individuated representation of the referent are irrelevant to a particularised existential implication.

11. Fodor & Sag’s (1982:355f) view can also be considered to belong to this group: someone who utters the sentence ‘A student in the syntax class cheated on the final exam’ ‘might be intending to assert of some particular student, whom he does not identify, that this student cheated’.
12. In the terminology I use in this these, a ‘referring interpretation’ means a particularised existential implication can be drawn for the referent of the NP in question while a ‘non-referring interpretation’ means that only a potentially existential implication can be drawn for it.
13. There are three types of non-fact propositional modality: irrealis assertions, negative assertions, and the environment created by the use of a sub-class of verbs with ‘non-fact modality’ ‘in their semantic structure’ (Givón 1993:218). The full range of irrealis operators in English are listed in [1]:

[1] a. Conditional: If she meets *a man* there ...

- b. Yes / no questions: Did she meet *a man* there?
 - c. Command: Go meet *a man*!
 - d. Epistemic adverb: Maybe she met *a man* there.
 - e. Modals: She may meet *a man* there.
 - f. Scope of non-implicative modality verb:
She wanted to meet *a man* there.
 - g. Scope of non-implicative manipulation verb:
They told her to meet *a man* there.
 - h. Scope of non-factive cognition-utterance verb:
They thought that she met *a man* there.
- (Givón 1993:217f)

His example of negative assertion is [2] and the examples created by the special verbs are given in [3].

[2] Negative assertion: She didn't meet *a man* at the bar. (ibid., p. 217)

[3] She was looking for *a rich man* She craved *an apple*

An example of habituals is in [4]:

[4] Habitual: Every Tuesday John meets *a woman* at the pub.

Givón puts indefinite noun phrases in nominal predicates in the same category as the above-mentioned:

[7] Nominal predicate:
- What does John do for a living?
- He is *a teacher*.

14. The following scholars have also adopted the phrase 'in mind' [my underlining]:

Kempson & Cormack's view is that a 'specific' interpretation occurs when 'indefinite noun phrases are used by speakers with a particular individual in mind in relation to that noun phrase' (1982 (1991:548)).

Givón (1993:215) illustrated the difference between referring and non-referring in [1] with two interpretations in [2]:

[1] I want to buy *a house*

[2a] Referring interpretation

The speaker had a **particular** house in mind; the speaker wants to buy it

[2b] Non-referring interpretation

The speaker has **no** particular house in mind; the speaker wants to buy something of that type

Rouchota (1994b:209) claimed:

I will use the term *specific* to refer to cases where uttering a sentence of the form 'an F is G' the speaker intends to communicate that she has a particular individual / object in mind to whom / which she ascribes G, but she does not overtly intend the hearer to identify this individual / object (although he might).

15. The example is from Fodor and Sag (1982:355)
16. In my opinion, this use, which was called the 'descriptive role' of the indefinite article in Quirk et al. (1985:273), can only have one interpretation, which is similar to that for an adjectival phrase. As Huddleston points out, 'The predicative role [of noun phrases] is shared with AdjPs, to which the category of number does not apply, and it is accordingly not surprising that number in predicative NPs should be less significant than in referential ones' (1988:54). This use should also include indefinite NPs as prepositional complements, e.g. 'his appointment as *a reader*', which a term like 'predicative role' doesn't cover.

In a real discourse situation, especially a spoken one, the assignment of reference to a nominal expression often develops as the discourse continues. In [6], the customer was not looking for any particular individual, but something in a subcategory of 'Burmese cat'. In resolving the specific / non-specific ambivalence, the immediately following information is often crucial.
17. For example, Rouchota 1994b is one of the most recent in linguistics and Kronfeld (1990) is an attempt to represent 'attributive' use on computer. The generation mechanisms described in Dale (1992) could also be applied to represent this distinction (ibid., p.257).
18. Actually in Donnellan's example, 'Smith's murderer' is a genitive NP. Presumably, Donnellan regarded genitive NPs as belonging to *the X* (definite) NPs.
19. Donnellan (1974): '... when a speaker uses a name intending to refer to an individual and predicate something of it, successful reference will occur when ... we search ... for an individual historically related to his use of the name ...' (p. 229f). In Donnellan's (1966) example, the success of the referential use of 'Smith's murderer' depends on the hearer's realisation that Jones is being charged with Smith's murder, which is the historical link. In Donnellan's example of the king and the usurper, the success of the referential use of 'the king' is dependent on the hearer's recognition that there is a person who is linked with the title 'the king', whether or not he believes the person is the king.

20. The descriptive content of a referentially used description forms part of the context in which the utterance is processed though there are different accounts of whether the descriptive content of a referentially used description is part of the proposition expressed by the utterance: cf. Donnellan (1966; 1977: 61ff); Searle (1979); Neale (1990); Ludlow & Neale (1991) and Récanati (1993:277ff).
21. The standard translation of the statement ‘The president is old’ (when it is interpreted as being used to refer to a particular president) in first-order logic must have an existential quantifier ‘ \exists ’ in it:

$$(\exists x) (\mathbf{PRES}(x) \ \& \ (\forall y) (\mathbf{PRES}(y) \supset x = y) \ \& \ \mathbf{OLD}(x))$$

It reads ‘for some value x , the complex propositional function x is the president and no-one else is, and x is old is satisfied’ (cf. Kronfeld 1990:25).

22. For example, Linsky asked ‘[D]o not these characters really exist? Mr. Pickwick really is a character in fiction; Mr. Ryle is not. There really is a figure in Greek mythology whose name is "Pegasus", but none whose name is "Socrates"; ...’ (Linsky 1963:84).
23. For example, in Burton-Roberts (1989b:32ff), it is claimed that the falsity of either ‘I visited the king of France today’ or ‘The king of France visited me today’ is based on the physical non-existence of the king of France in the contemporary world. When Kempson said the following, the basic concern is the same: ‘the concept of neither true nor false matches the native speaker intuitions about the oddity of saying either *the king of France is bald* or *the king of France is not bald* where there is no such man’ (1975:90).
24. In such an account, the reference assignment of the underlined expressions in the following examples are similar:

- [a] I saw a president yesterday.
 [b] I saw a unicorn yesterday.

However, in Hawkins’s (1991:427) treatment they are different: ‘A non-uniqueness requirement will prevent indefinite descriptions such as *a president* from referring to all entities that require the definite description the president, that is, exactly those that are unique, and so guarantees non-P-membership as well. The converse fails: non-P-membership does not guarantee non-uniqueness (cf. *I saw a unicorn yesterday* - there may be only one such)’. The issue of whether the referent is factual or fictitious doesn’t affect the lexical-semantic and pragmatic process of reference assignment. The assumptions involved in the process, like ‘there may be only one such’ or its negation are equally plausible for both factual or fictitious entities. The key is whether the communicator expects the addressee to make use of such an assumption in processing her utterance.

25. Beaugrande & Dressler (1981:109) pointed out that '[t]he act of referring is then an intricate process of **pattern-matching**, during which text users may decide that a text-world failing to match at a given threshold is FICTIONAL'.
25. I have adopted Sperber's following claim:
- Perceptual processes have, as input, information provided by sensory receptors and, as output, a conceptual representation categorising the object perceived. Conceptual processes have conceptual representations both as input and output. (1994b:40)
26. As for pragmatic enrichment which accounts for the difference such as the one between the interpretations of 'I have had breakfast' and 'I have been to Tibet', see Sperber & Wilson (1986:189ff).
27. See Hawkins (1991:417f) for a Gricean treatment of such a difference, which regarded the implication that there are some boxes nearby as part of 'what is implicatured' -a conversational implicature.
28. Cf. Quirk et al. (1985:273). In Rouchota (1994a:444) this use is referred to as 'predicative'. As my examples here show, the syntactic position of a descriptively used description is not confined to the predicative position only.
29. In Barwise & Perry (1983:156ff) 'appositive use' of a definite description was taken as parallel to 'attributive use' and 'referential use'.
30. Cf. Wilson & Sperber (1988:143f) for a relevance theoretic account of metaphor.
31. I am grateful to Professor James Higginbotham (personal correspondence) for suggesting this example to me.
32. That's why the conclusions of the following syllogisms are not valid:
- The temperature is ninety.
The temperature is increasing.
Therefore, ninety is increasing.
- The number of sleeping students was 9.
The number of sleeping students was increasing.
Therefore, 9 was increasing. (Barwise & Perry 1983:158)
- The President is elected every four years.
The President is Ronald Reagan
Therefore, Ronald Reagan is elected every four years (Higginbotham 1990)

33. In my account, the underlined NPs in [6a] and [6b] has a sub-class interpretation but [6b] is not in any way involved with generics. Nor should be the following example given in Krifka et al. (1995, 3.3):

Two red wines are produced in Wurttemberg: Lemberger and Trollinger.

34. This interpretation of [1a] follows Rouchota's (1994a:453ff; 1994b:186f) example. Her example was: 'suppose that all the computers in our building behave strangely, so you call the computer centre to ask for help. When you hang up you say to your colleague:

A computer expert will come to have a look.'

Rouchota stressed that 'for the attributive interpretation to arise, it is not necessary that the speaker does not know who the computer expert in question is'.

35. Quirk et al. (1985:265ff), among many others, have proposed two kinds of situational reference: the 'immediate situation' and the 'larger situation (general knowledge)' (cf. also Greenbaum & Quirk 1990:77). Such a division is merely intuitive and difficult to grasp. For example, it is very hard for one to see the difference between 'the castle' in [1], which is said to be in the category of 'immediate situation' and 'the Prime Minister' in [2], which is said to belong to the 'larger situation'.

[1] Have you visited *the castle*? (from Quirk et al. 1985:266)

[2] Do you know what happened to *the Prime Minister* this morning?

36. This example has been attributed to 'Hall-Partee 1972:419', but I still have not found the paper.
37. [11a] was given by Cann to make the point that one 'can clearly express a true proposition without there being any unicorns for someone to meet' (1993:266). [11b] was given in Cormack & Kempson (1982(1991:563)) with an analysis on the basis of formal semantics
38. Cormack & Kempson regarded [11b] as a description of the following scenario:
- Janet is looking for someone quite specific whom she identifies as Lord Wrotham and who she believes to be a Marxist English lord, which is the reason why she's looking for him. However, contrary to Janet's beliefs and expectations, there is no such man as 'Lord Wrotham' and no such thing as a Marxist English lord. (1982(1991:563))

39. The following explanation is mainly for referring expressions used in a description of the actual / fictional world. In the relevance framework, '[t]he propositional form of an imperative . . . is entertained as a true description of a world the speaker regards as both potential and desirable' (Wilson & Sperber 1988:148). On the other hand, '[t]he propositional attitude encoded by interrogatives are not descriptive but interpretative: their propositional forms are entertained not as true descriptions of states of affairs, but as faithful enough interpretations of thoughts the speaker regards as desirable to someone (not necessarily herself) (ibid. p. 150). Referring expressions in non-indicative mood are interpreted along these lines.

40. In the studies of reference, there are other accounts. Some researchers emphasised the belief the communicator may hold (e.g. in Ludlow & Neale 1991:181 on the specific use of an indefinite expression) about an expression. Other researchers emphasised the relation between an expression and its referent in a potential situation, as shown in Hawkins's (1991:420ff) examples below:

- [a] England has a prime minister, and America has a president.
- [b] This larger situation set contains a professor, a classroom, a textbook, etc.
- [c] My car comprises a steering wheel, a hood, a clutch, etc.
- [d] There is a pizza in the fridge, and a cake in the pantry.

Hawkins claimed that the indefinite article in these examples 'implicates uniqueness' and these descriptions are 'uniquely referring'. However, it is the communicator, not an expression, which refers. In a theory of utterance interpretation in which utterance meaning is what the communicator intends to convey in a particular context, none of the above indefinite descriptions can be counted as 'uniquely referring'. A historic link, which is known of by both parties (cf. 6.3.4), is the only way the communicator can direct the addressee to the unique referent, but with these context-independent sentences there is no way of setting up such a link.

41. Lyons (1995: 297f) noted that 'the vast majority of entity-denoting nouns in English . . . fall into different sortal categories according to what are held to be the essential (or ontologically necessary) properties of the classes of entities that they denote'. In reference assignment the speaker's intention is to be inferred and taken into consideration in addition to what a noun denotes.

42. Further distinctions can be made at this point, e.g. between object and event - between 'a driver' and 'a stance'. But it is not significant to the present work.

43. An example like 'Six apples cost one dollar' (regarded as 'generic' in Krifka et al. 1995, Sec.2.6) also belongs to this category.

44. If the reader believes that characteristically successful soldiers and fortunate politicians achieve greatness and that there are grounds for the writer of [f] to intend

to means so, then he can draw a member generic implication for the referents of both ‘the fortunate politician’ and ‘the successful soldier’ (see further discussions in 6.1)

45. In this system, the example of so-called ‘inner attributive use’ in Barwise & Perry (1983:155) also falls into this category if we consider the underlined expression is in the scope of factual modality, though the evidence for the presence of a cat is extremely weak:

‘Suppose I point to a Persian cat hair in the butter dish and say: That means that a Persian cat is in the house.’

46. Restrictively modified definite description should be distinguished from a compound noun. The difference can be shown by the contrast between the *blue whale*, which is a compound noun, and *the world’s largest butterfly*, which is a restrictively modified definite description. There is a continuum between the two groups. Also, the modification may be covert. A ‘*the N*’ form can be used to co-refer with an antecedent which is used to refer to a sub-class of the class the ‘*theN*’ form denotes, as shown in the category of ‘++ss(b)’ in 3.2.8.

47. This phenomenon has been noticed by several researchers:

This elephant is dying out (ter Meulen 1988:381)

This beaver is usually bigger than the other ones. (Declerck 1991:91)

This fish is on the verge on extinction. (Declerck 1991:91)

This (kind of) animal is found in Newfoundland. (Chesterman 1991:72)

48. This expression is used here to refer to a particular sub-class of butterflies, *Ornithoptera alexandrae* or Queen Alexandra’s birdwing, not a potential one.

49. Ludlow & Neale (1991:177) regarded the following example as the referential use of an indefinite description, which Rouchota (1994a:461) acknowledged:

Look! A man is uprooting your turnips.

From the utterance interpretation point of view, the interpretation of the underlined expression basically involves only semantic decoding with a perceptible implication. There isn’t a historical link between the underlined NP and its referent so according to this criterion, this example cannot be counted as ‘referential use’. Furthermore, it is the fact that the addressee’s turnips are being uprooted, rather than the fact that they are being uprooted by a man that is the focus of the establishment of relevance in this case.

50. As Récanati (1993:277) put it, the nominal content of a referentially used indefinite description can trigger a *de re* concept which links to this content.

Chapter V

1 This use of nouns like 'man' was regarded as one of the main concerns in the studies of English generics in some other early major grammars, such as Sweet (1891-98), Jespersen (1909-49). In Quirk et al. (1985:282) this use diminished into a footnote in the section on generic reference.

2 Apart from 'man', only a few other expressions like 'woman', 'theatre', and 'drama' have been used in this way (cf. Jespersen 1909-49, Part II, Secs. 5.411; Secs. 14.33-34; Quirk et al. 1985:270). For example,

Woman is the glory of all created existence. (S. Richardson, quoted in Quirk et al. 1985:282)

The other related phenomenon is singular count nouns in parallel constructions (Quirk et al. 1985:282; Greenbaum & Quirk 1990:85):

It destroyed man and beast generally. (quoted in Jespersen 1909-49, Part II, Secs. 5.46)

3 The latest remark along this line of syntactic approach was made by T. Moore: 'a generic reading can be assigned to any maximally unmarked sentence structure' (quoted in Smith 1975:47).

4 'Zero plural' is an NP which has no article and which has a plural (count) noun as its head. Huddleston (1984:255) calls it 'plural indefinite'.

5 Incidentally, there is a clear link between Sweet's view of zero plurals expressing what the noun denotes in general and Quirk et al.'s view of 'the CATEGORICAL meaning of zero [article]' (1985:275).

6 The 'zero noncount noun' construction is regarded as a potential generic expression in many major grammar works, e.g. Jespersen (1914-49, Part II, Secs. 5.412), Christophersen (1939:34), Quirk et al. (1972:153), (1985:282), Huddleston (1988:91).

7 For example, Huddleston (1984:255):

Plural definites are not used in this way [having a generic interpretation - Ni], except with nationality terms, as in 'The Italians have a marvellous sense of humour'.

Quirk et al. claimed that apart from national nouns like ‘the Chinese’ and phrases with an adjective head referring to a group of people like ‘the unemployed’, ‘*the* + plural noun cannot be used for generic reference’. ‘In scientific descriptions, however, we may find expressions like *the rodents* (referring to the whole order Rodentia)’ (1985:283).

- 8 This definition is very influential. For example, *Cambridge International Dictionary of English* (1995) still holds one of the uses of *the* before a noun is ‘to refer to all the things or people represented by that noun ...’ (p. 1508) and one of the uses of *a* before a noun is ‘to mean any or every thing or person of the type you are referring to’ (p.1).
- 9 Both of Jespersen's examples for the sub-class ‘the + plural’ contain the NP ‘the English’, which actually has an adjective as the head (cf. Quirk et al. 1985:421ff). Jespersen didn’t notice the type with a plural nationality noun, as in the case in ‘The Scots are found of whisky’.
- 10 The influence of this view is far-reaching; see the quote from *Cambridge International Dictionary of English* in Note 8.
- 11 The expressions ‘the women’ in [5c] and [5d] can be taken as being similar to ‘the ladies’ in Poutsma’s examples in 2.2.4, or we may need more context to decide the reference of ‘the women’ in [5d].
- 12 Greenbaum & Quirk (1990:85) observed: ‘In fact, however, the three article modes are on a very different footing, with zero by far the most natural way of expressing the generic, irrespective of the function or position of the noun phrase in sentence structure’. While the above observation about contemporary English is now well-supported (cf. the similar comments made in the corpus-based *Cambridge International Dictionary of English* 1995:68 and *COBUILD Grammar of English* 1990:45), it will be interesting to investigate whether there is a shift in English usage since Jespersen’s time.
- 13 By ‘uniques’, Christophersen meant ‘names containing usually ONE member’ (p. 30).
- 14 Dahl (1975:99) also attempts to pair syntactic features, like *a*-form, with a certain speech act, claiming that sentences like ‘Beavers build dams’ make a nomic statement.
- 15 Before Christophersen, Poutsma (1914-29: Part II, Ch. XXXI, 34) noted, ‘Both before material nouns and abstract nouns the generalizing definite article is occasionally met with’ and his examples are:

She had remained pure as the snow. (ibid., 31)

His hair is crisp, and black and long,
His face is like the tan. (ibid., 31)

- 16 Quirk et al. (1985:282): '*The* is rather limited in its generic function. With singular heads, it is often formal or literary in tone'.
COBUILD English Grammar (1990:45): 'Noun referring to living things can be used in the singular with "the" when you are making a statement about every member of a species... These uses are fairly formal. They are not common in ordinary speech'.
- 17 This dichotomy has been widely accepted, explicitly or implicitly, cf. Huddleston 1984:255; Quirk et al. 1985:282; Greenbaum & Quirk 1990:85 and many grammar textbooks.
- 18 Smith claims:
- This sentence is acceptable on the reading 'all sub-classes of the dodo are extinct', i.e. 'the Mauritius dodo, the Reunion dodo and the Rodrigues dodo'. It is unacceptable on the reading 'all individual dodos are extinct'. (1975:45)
- People's intuition about the above interpretations may differ, but the point I am making here is that Smith regards sub-class interpretation as a kind of generic interpretation.
- 19 This issue can be clarified only when we have adopted a pragmatic framework in which a natural language sentence is treated differently from the proposition which it is used to express.
- 20 Smith thought [3b] and [3c] are not acceptable (p. 33). He commented: 'This is one of the few examples I know where the possibility of *the N* does not entail the possibility of a plural noun with a zero article as well' (p. 46). However, native speakers of English have different opinions on the unacceptability of [3b]. Also, the example 'pollutants are decimating a squid' may in an appropriate context receive a sub-class generic interpretation, i.e. 'a sub-set of the squid population'.
- 21 The native speakers' intuition on this example is controversial.
- 22 Strictly speaking, a class-generic interpretation of an *a X NP* is a sub-class one, i.e. it refers to a subset of the whole category that the head noun can be used to refer to, as in 'They recently found a rare fish in the Gulf', when 'a rare fish' is interpreted generically as a subset of the genus fish (cf. 6.3).
- 23 I haven't attached the labels to this instance because it is out of place in this taxonomy though Burton-Roberts (1989:15) claimed that the expression 'the dodo' in (a-ii) 'is indeed a specific reference. As the unique super-class it could not be

non-specific'. The sense of specificity B-R used here is clearly different from the putative notion of specificity, which is related to some particular member(s) of a class, whether known to the hearer or not (cf. Quirk et al. 265; Huddleston 1984:265). Obviously, [a-ii] is not about such entities.

- 24 Givón (1993:217ff) gives a list of irrealis operators in English; they include 'verbs that carry the irrealis modality, such as "look for" and "crave"' and the non-factive verb 'think'.
- 25 Givón has noted that 'The reference status of an indefinite noun is predictable, at least up to a point, from the **propositional modality** under whose scope the noun falls. . . . Under the scope of **fact** modalities, noun phrases can *only* be interpreted as **referring**'. 'Consider first the interpretation of indefinite NPs under the scope of *fact*: . . .

(11)b. *She met a man at the bar.*

In uttering (11b), the speaker is committed to the existence, in the universe of discourse, of a *specific* man, the one she met at the bar' (1993:216f).

- 26 The NP 'the two lions' is the complement in the prepositional phrase 'on the two lions', which serves as the postmodifier in the NP 'statistics on the two lions' and this NP is the object.
- 27 In (e) the NP 'a whale' is the object of the factual verb 'discussing'. In (f) the NP 'a couple of mammals' is the complement in the prepositional phrase 'of a couple of mammals', which is the postmodifier in the object NP 'the evolution of a couple of mammals' of the factual verb 'comparing'.
- 28 See Note 23 above and also Lyons (1977:188); Huddleston (1988:91); and Greenbaum & Chalker (1992:83).
- 29 Non-definite NPs include indefinite NPs, which in turn include indefinite pronouns as well as NPs introduced by indefinite articles (e.g. *a / an* and *some*) (cf. Lyons 1977:188; Greenbaum & Quirk 1990:121 - 125).
- 30 This paradigm shows nicely, for example, that 'RESTRICTED class-generic reference, NON-SPECIFIC class-generic reference, and [specific] INDEFINITE class-generic reference will always constitute reference to some SUB-class (of the appropriate species)' (B-R 1989:15).
- 31 Of course, the NP 'a musk-rat' is perfectly acceptable in the following context, to be interpreted as an individual:

A musk-rat was imported into Europe in 1906 and it survived only a few weeks.

- 32 'An essential property of an object x is a property [that] x could not have lacked except by failing to exist; so it is necessary that if x exists, it has the property' (Forbes 1994:2767).
- 33 Kripke presented an example for the first type in the form of a question: 'How could a person originating from different parents, from a totally different sperm and egg, be this very woman?' (1980:113). The example of the second type is that it is necessary that the very person who has written this paper is at the same time the very person who has written this paper and cannot be otherwise.
- 34 C.S. Smith (1964:51): 'An account of generic sentences will give rules of interpretation rather than rules of syntax'. N. V. Smith (1975:28): 'Apart from the semantic class of the verb, the only constraints on interpreting [*the* N] NP as generic are pragmatic. The constraints on so interpreting an NP consisting of [*a* N] NP are both pragmatic and semantico-syntactic ...'
- 35 The example was kindly provided by Deirdre Wilson (personal communication).
- 36 Declerck stated this point in several places: 'Bare plurals by definition have homogeneous reference: an NP like *beavers* can denote either the generic set or any subset of this that comprises at least two members' (p. 98). They 'can in principle refer either to the whole set of beavers (that is, the generic set) or to any subset of this' (p. 85).
- 37 His examples like 'Mary has solved *the problems*' (p. 84) and 'I have cleared away *the glasses*' (p. 98) have nothing to do with generic reference, but involve specific reference,
- 38 Declerck's examples for the inclusiveness principle are *Jenny personally knows actresses* vs. *Betty hates actresses* (cf. p. 84), which are of the same type as his examples for the maximal-set principle: *I grow roses* vs. *I like roses* (cf. p. 83).
- 39 I use capitalised words here to stand for the concept represented by 'all beavers'.
- 40 'Leibnitz draws a wide distinction between contingent and necessary truth, between truths of fact, and truths of reason' (E. Caird, quoted from *OED* 1990). Examples like [6] are concerned with truth of empirical fact so it is contingent. Heyer (1985:44) also classified 'The Scotsman drinks whisky' type of statement as contingent.
- 41 The word 'gnomic' is related to aphorisms or a 'general truth' (cf. *Shorter Oxford Dictionary* 1993).

- 42 Declerck mentioned that ‘The possibility of interpreting the statement as holding for any member of the set of beavers follows only indirectly (via implicatures)’ (p. 94). But it is not clear what he meant by ‘implicatures’. Are they the processes of excluding the ‘one member’ interpretation (cf. step iii) or the development of the ‘any’ interpretation? Declerck didn’t explain either of them.

Chapter VI

1. The definition of ‘generalisation’ in philosophy is sometimes too narrow for the purpose of this study, as shown in the entry in *The Oxford Companion to Philosophy*:

‘. . . a generalisation is an ‘all’-statement, to the effect that all objects of a certain general kind possess a certain property . . .’ (Lowe 1995:305)

Generalisations can be about fewer-than-all members of a class, depending on the cognitive goal that a generalisation is made to achieve.

2. Blass (1991:237) pointed out:

When the hearer interprets an utterance with a generic NP, he must decide whether to interpret it in terms of universal quantification, or of some weaker notion of ‘typicality’. The decisions are made for pragmatic reasons.

Potts (1994:206) claimed:

If we can insert the phrase ‘by nature’ into a proposition *salva congruitate*, . . . I shall henceforth call it a *generic* proposition . . . As the term suggests, a generic proposition is a proposition about a *kind*.

Both of their comments are only about member generics rather than generics in general, which includes at least another important subcategory - class generics.

3. Lyons (1977:456) suggests that the difference between determiners and quantifiers can be tested by the appropriateness of a *which*-question or a *how-many*-question. For example, the answer to ‘How many sweets do you want?’ may be ‘Four’. And the answer to ‘Which sweets do you want?’ may be ‘The ones with peach flavour’. The two answers cannot be switched between the two questions without causing confusion. Therefore, ‘four’ is a quantifier and ‘the’ is a determiner. Nevertheless, in a generic situation, a *which*-question may get a quantitative answer, which is still appropriate:

A: The president is too powerful.

B: Which president?

A: All of them / Every one of them.
(adapted from Quirk et al. 1985:283)

4. The myth that ‘generic’ means universal quantification dies hard. I have underlined the overt universal quantifiers used in the following quotes:

The definition of ‘generic’ in *Macquarie Dictionary* (Australia: The Macquarie Library Pty Ltd 1991) is ‘applicable or referring to all the members of a genus or class’.

Collins COBUILD English Grammar (1990):

‘Plural nouns are used without a determiner when you are referring to all the people or things of a particular kind.’

COBUILD on CD-ROM (1994) made the following comments:

‘Nouns referring to living things can be used in the singular with ‘the’ when you are making a statement about every member of a species.’ ‘*The* is sometimes used with other nouns in the singular to make a statement about all the members of a group.’

Cambridge International Dictionary of English (CUP 1995) claimed that the ‘the + singular noun’ construction ‘refers to all the things or people represented by that noun’.

5. Grice’s Cooperative Principle is as follows:

Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged. (1989:26)

6. Examples of loose talk are ‘France is hexagonal’ and ‘Edinburgh is 200 miles north of London’ (cf. Sperber and Wilson 1985-86).
7. One of the most recent comments can be found in Krifka et al. (1995, 1.1): generalizing statements ‘are either true or false’. However, Potts (1994:206) represents another point of view: ‘Generic propositions are relatively rare, because most would be false.’
8. This claim matches people’s intuition that generalising utterances are either true or false.
9. The revised presumption of optimal relevance takes into consideration the communicator’s limitations:

(a) The ostensive stimulus is relevant enough for it to be worth the addressee's effort to process it.

(b) The ostensive stimulus is the most relevant one compatible with the communicator's abilities and preferences. (Sperber & Wilson 1995:3.3)

Accordingly, the addressee should go along the path of least effort in his processing of the utterance and stop at 'the first interpretation that the speaker might have thought would seem relevant enough to him' (Sperber 1994:197).

10. In cases where the predicate doesn't compulsorily require a plural subject, the following two forms amounts to the same thing:
 - [a] there are x s such that x s are dugongs and x s only produce calves every three to six years
 - [b] there is an x such that x is a dugong and x only produces a calf every three to six years
11. Sperber and Wilson distinguished background implications from foreground implications (cf. 1986:202 - 217). The difference between them is that while foreground implications have contextual effects of their own, background implications only contribute to overall relevance by, for example, making some assumptions more accessible so as to reduce the overall processing effort in achieving some contextual effects.
12. Small children may take such a literal option, as in Bach's (1994a:134) example when the mother reassured her boy who cut himself 'You won't die', he asked 'Will I never die?'
13. Bach (1994a:136) had a similar opinion: 'As with any other sort of nonliterality, for the hearer to understand what the speaker is conveying in the utterance, he must recognize that the speaker cannot be plausibly taken, and therefore does not intend to be taken, to mean what he is saying'.
14. This follows from the basic claim of relevance theory that human cognition is relevance-oriented (cf. Chapter 2). Here is a recent quote from some psychologists: 'All things being equal, most of us will do the least amount of mental work we can get away with in most situations. In other words, we are usually unwilling to expend more than the minimum amount of cognitive effort required in a given situation . . . usually we seek to minimise cognitive effort whenever feasible' (Baron & Byrne 1994:86f).
15. The answers are: a. not prime; b. not prime; c. not prime; d. prime.

16. The writer is entitled to expect us to have these beliefs because otherwise we would not be able to solve any mathematical problems.
17. In this thesis I hold that member generics have a gradient, with universal quantification at one end. Krifka et al. (1995, 3.4) argued that ‘the generic quantification in (128) is not warranted; for although *Dutchmen are good sailors* (128) is true, we certainly would not conclude that a Dutchman we randomly pick will probably turn out to be a good sailor’. This is one example of a member generic interpretation without universal quantification.
18. As Fraser & Gaskell put it, ‘these are not neutral, merely factual beliefs, but carry a personal importance, some prescriptive connotations’ (1990:12).
19. Krifka et al. (1995, 3.3) discussed such statements under the sub-title of ‘kind-referring NPs’. I regard them as member generic because the predicated property can be possessed by a member of the class in question. Potts (1994:204) also observed that ‘classificatory propositions fall within this group [generic propositions]’.
20. We can have a contrast between generic reference [a] and plural reference [b]:

[a] THE FOREIGN Office has warned Britons not to visit 26 countries until hostilities in the Gulf cease. (W2C-012-2)

[b] meanwhile Kuwait was looted Kuwaitis and other people were being beaten raped and murdered and still if there had been any evidence of willingness on the part of Saddam Hussein to leave Kuwait the war now being waged against him would have been preventable (S2B-030-78)

In [a] the expression ‘Britons’ has generic reference and its meaning will be altered if it is preceded by ‘some’. In [b] the expression ‘Kuwaitis’ has plural reference and its meaning won’t be altered if it is preceded by ‘some’.

21. For example, Krifka (1994:1404) stated that ‘generic sentences typically allow for exceptions’, which itself is an example of member generics.
22. I base my classification of class and member generics on the nature of the referent of an expression and the predicated property, which is an issue different from the form. In Krifka et al. (1995, 3.4) the underlined expression in *The potato contains vitamin C* is regarded as a ‘kind-referring NP’ while I consider it member generic because the predicated property can be possessed by an individual potato.
23. If a proper noun is used in this way, sometimes it is said to have been reclassified (cf. Quirk et al. 1985: 5.62 & I.53).

24. There are different opinions on whether a nationality noun like ‘Dutchman’ can be used with ‘the’ to refer generically. Krifka et al. (1995, 3.4) gave the following set as acceptable:

- 131a The Dutchman is a good sailor
131b Dutchmen are good sailors
131c A Dutchman is a good sailor

However, Quirk et al. (1985:283) thought the following example of the same type ‘inappropriate’ (also Greenbaum & Quirk 1990:86):

‘?The Welshman is a good singer’

25. The following examples of this category have been mentioned in the literature:

Sheep *stay together* [Declerck 91:99]

elephants *disperse* when shot at (Smith 1975)

Wolves *meet* and *mate* in the late winter. (Carlson 1982:154ff)

true lovers *kiss* whenever the opportunity presents itself (Smith 1975)

A tiger, male or female, places scent on bushes and tree trunks. ... The scent is, in effect, the tiger’s calling card. It enables tigers to *follow each other* in the forest. [Link 1988:333]

Reciprocals like ‘kiss (each other)’ and ‘numerous’ type of predicates require plural subjects and the constraint is a purely ‘formal’ morphological restriction rather than any semantic or conceptual restriction. (Krifka et al. 1995, Sec. 3.6).

26. Laca (1990) is one of the most recent papers devoted to this issue.

27. The examples would be:

John hates coffee ⇔ Coffee is hated by John.

Mary smokes cigarettes <##> Cigarettes are smoked by Mary. (from Krifka et al. 1995, 3.2)

28. ‘The apparent reason for this different behaviour is that a verb such as *hate* strongly suggests a toto-generic or universal reading of the object NP, thus making the inference from one kind of fish to all (kinds of) fish unwarranted’ (Laca 1990:26). Declerck 1991 and Krifka et al. 1995 both discussed the two groups of verb relating to this puzzle.

29. It is sometimes called ‘monotonicity effects’: ‘an expression can be replaced by ‘less informative’ NPs without making the sentence false’ (Krifka et al. 1995, 1.3).

30. They are also called ‘amount words’ in Leech & Svartvik (1994:45ff).

31. In philosophical logic, the standard claim about the use of ‘all’ or ‘every’ is that in a universal quantifier sentence like ‘All barbers shave’, ‘there are certain barbers, namely all barbers, on whose shaving the truth of these sentences depends’. ‘For this reason, ... universal quantifier phrases are generally used to refer, at least descriptively, namely to all the individuals denoted by the contained noun phrase’ (Bach 1994:242). Quirk et al. (1985:259) claims ‘The form **all** + noun with no article usually has generic reference’. In my account I distinguish the linguistic form from the intended referent, as is clearly shown by those in [2] as well as in [1h].

32. Krifka (1994:1403) quoted ‘used to’ as one of the auxiliaries used as explicit quantifiers in a generic statement. For me, statements containing ‘used to’ are still categorical assertions, only made about some phenomena in the past, as shown in the following example:

Married women and some widows used to be able to choose to pay Class 1 contributions at a reduced rate when employed , and to pay no Class 2 contributions when self-employed (though Class 4 contributions were still payable in full). (W2D-004-66)

Therefore, auxiliaries like ‘used to’ are not regarded as explicit quantifiers in my treatment of generics.

33. ‘Categorical assertions’ mean ‘statements that are unqualified in terms of possibility and necessity’ (Lyons 1977:745).

34. Perkins(1983:35) tentatively called this use of *can* ‘epistemic *can*’ and Palmer(1990:107) termed it ‘existential modality’.

35. As opposed to cases in [2a] and [2b], in the following example, the word ‘can’ is not used to indicate ‘theoretical possibility’ but ‘ability’:

It seems that actors simply **can’t** handle success, or rather, they are deft with their own but can’t cope with other people’s. (*The Sunday Times* 8 Oct. 95)

The example below is a borderline case between ‘theoretical possibility’ and ‘ability’. It can be regarded a more tentative assertion than ‘A nut in its shell lasts a couple of years’. On the other hand, it can be understood as ‘A nut in its shell has the ability to last a couple of years’.

‘A nut in its shell *can* last a couple of years,’ says Brian Newsom, chairman of the Combined Edible Nuts Trade Association. (*The Times* 28/11/92)

36. See Lyons 1977:178; Bach 1994:67.

37. Cf. Krifka et al. (1995, 1.2).
38. Krifka et al. claimed that the example ‘The dodo is extinct’ ‘is the only one that clearly and straightforwardly says something about the kind without talking about the instances of the kind. (Smith 1975; Heyer 1985:87; Wilkinson 1988)’ (1995: 3.4). In fact, not only the case quoted above (Type B here) but quite a few other types have nothing to do with ‘the instances of the kind’.
- The classification is just a list of types of clues which can induce a class generic interpretation of a nominal. Some of the types may have closer connections with each other but since any of them can independently do the job I prefer to treat them separately.
39. My concern here is our description of classes of things, not their metaphysical status. For example, even though the dodo is extinct, we can still describe the phenomenon.
40. ter Meulen’s example is quoted here as [a]:
- [a] Pop-art is dying out (ter Meulen 1988:381)
41. The first part of this example is what is generally called metalinguistic negation. Carston (1996) calls it ‘implicitly echoic negation’. The pragmatically preferable interpretation of such cases is not ‘Nerve cells don’t exist’ but ‘It is not true that nerve cells exist in isolation’.
42. Link (1988:6) mentions the term ‘taxonomic predicate’ (cf. also Heyer 1985:33) but Type C includes more than just expressions like ‘is a species’ as predicates. The notion of ‘existence’ includes both the description of the metaphysical existence of a class and of whether the existence is known to a cognitive agent.
43. Nationality adjectives and nationality nouns can also occur in this environment, as quoted in Greenbaum & Quirk 1990:91:
- The Russians are a deeply patriotic people
44. It is interesting to compare this example with the ‘functional use’ of a singular expression (cf. 7.1.7). Because of their different forms, we may take different routes when interpreting them, though their representational referents are similar.
45. Such examples are close to examples of member generics such as ‘Finns always do well in ski-jumping competitions’ (from Chesterman 1991:38). The difference between the two types is not clean-cut. However, it is possible to say that ‘The Finn, X, does well in ski-jumping competitions’ but it is not possible to say ‘The whale, Moby, grows to 40 feet’.

46. In this category the following types mentioned in the literature can be subsumed (cf. Krifka et al. 1995, 3.1; 3.4):

The rat reached Australia in 1770 (avant-garde)
In Alaska, we filmed the grizzly (representative)

47. Krifka et al. (1995, 3.4) quoted the following as examples of ‘average property’, which are similar to the case I included in this category:

The American family contains 2.3 children
German teenagers watch 6 hours of TV daily

48. Krifka et al. (1995, 3.4) quoted the following as examples of ‘collective property’:

Linguists have more than 8000 books in print
The German customer bought 11000 BMWs last year

49. Similar examples to those included in this category have been noticed by other researchers:

The snake is a popular theme in literature.
In medieval times, the child didn’t exist. (Krifka et al. 1995, 3.7)

50. The following examples have been noted as generic:

The Romans defeated the Carthaginians in 202 BC. (Quirk et al. 1985:283)
The French say they must sell more wine to Germany.
The plan has received warm support from the Germans. (Leech & Svartvik 1994:55)

51. The examples in this section do not include co-textually recoverable ellipsis like the following:

Scottish Conservatives were fighting a rearguard action to save the poll tax while the English [Conservatives] were crying for its abolition. (W2C-018-66)

52. For example, generic *the* with nationality adjectives are ‘used to refer to a people as a whole’ (Leech & Svartvik 1994).

53. In Burton-Roberts (1989a) and Krifka et al. (1995) the term ‘taxonomic reading’ is used for what I call ‘sub-class’ interpretation. Krifka et al. (1995:1.4) quote the following as an example of ‘the taxonomic reading’:

A cat shows mutations when domesticated.

The above example belongs to the category of sub-class member generic.

55. If we take the NP 'vitamins' here as referring to 'different organic compounds such as vitamin A, vitamin B, . . .', its function is similar to 'the peoples' in [1e] above, which is taken to mean 'different races such as the Chinese, the English, . . .'.
56. In Quirk et al. (1985:353), two types of generic use of personal pronouns were mentioned. One is its co-reference with another generic expression, as in 'Truffles are delicious, but they're very expensive'. The other is what I am discussing in this section. In this thesis I treat pronouns used in a generic discourse, the first type in Quirk et al., in the chapter on textual reference.
57. Here I follow Whitley's (1978:24) consideration of treating these uses of pronouns separately:

Compared with the personal pronouns, which refer to specific groups, the impersonal pronouns leave the referential index unbounded, open, and generalized.

58. Cf. Quirk et al. 1985:350; 353f; 387f.
59. In Quirk et al. (1972:209), the table of pronouns is a minimalist's one. For example, it doesn't show explicitly the 'inclusive *we*', i.e. *we* with the feature of '+ second person'. In Quirk et al. (1985:340), a more flexible table of features of personal pronouns is adopted to accommodate more uses of, say, *we*, i.e. *we* with features of '+ addressee' and '+ others'. In this thesis I have adopted an approach of minimizing the linguistic input of lexical items in interpretation. So, I prefer the former to the latter.
60. Cf. Quirk et al. 1985:387f.
61. In the one million ICE-GB corpus, there is no example of *one* used as a substitute occurring at the subject position except for cases like the following after the existential *there*:

so you want to find a wholesale place then ... there is one in Birmingham (S1A-030-199&201)

Though it is possible for the generic *one* to occur at the object position, in ICE-GB all the examples of the generic *one* occur at the subject position with only one exception. This generic *one* occurs at the object position and has an infinitive as the object complement. It is also possible for the generic *one* to occur at the object position without being followed by a direct object or an object complement, as in 'Those things can hurt *one* very badly'.

62. The uses of *we* whose actual referent is the speaker are traditionally treated under two headings: the 'editorial *we*' and the 'royal *we*' (cf. Quirk et al. 1985:350f).
63. Quirk et al. (1985:354) mentioned this use with the following example, but hasn't given it a name:

It wasn't a bad life. You got up at seven, had breakfast, went for a walk . . .

64. In Quirk et al. (1985:350), the 'we' in examples like 'As we saw in Chapter 3, . . .?' is called 'the inclusive authorial *we*' and it is said to 'seek to involve the reader in a joint enterprise'. In Greenbaum & Quirk (1990:114), the same example is under the name of 'the persuasive *we*' and paraphrased as 'As I hope *you* saw in Chapter Three . . .'. My examples in [2] are comparable to the notion of 'persuasive *we*' and to what has been said about the 'inclusive authorial *we*'.
65. In this aspect, [5a] above is one of the exceptions since the 'one^a' in it is used to co-refer with an inclusive *we*.
66. This detachment from the second person addressee is clearly shown in Whitley's (1978:18) example:

When my great-granddad was a boy, you could still buy candy for a penny a stick.

Whitley comments that 'it is highly unlikely that the addressee is coeval with the speaker's greatgrandfather [sic]'.

67. Cf. Quirk et al. 1985:387f.
68. Cf. Greenbaum & Quirk 1990:114.
69. Again, Whitley's (1978:18) example illustrates this detachment from the first and second person:

Just think! In the twenty-third century we'll teleport to Mars in just seconds.
since both are unlikely to live until that time.

70. Cf. Quirk et al. 1985:350.
71. Cf. Quirk et al. 1985:354.
72. A characteristic of the generic *they* is that they don't normally have antecedents (cf. Whitley 1978:19).

73. Cf. Wales, forthcoming: Ch. 2.
74. Cf. Greenbaum & Quirk 1990:115.
75. Examples like the following are non-existent in ICE-GB; Wales 1995 is the most recent study on this phenomenon:

Your Yorkshireman takes his cricket seriously (Smith 1975)

Well, your Frigicool X-59D is about the best little fridge you'll find in your moderate-priced range. (Whitley 1978:27)

Your average football supporter is not interested in comfort. (Quirk et al. 1985:283)

Now, take your professor, for instance. He never goes on strike, does he? Not like your print-worker, eh? (Chesterman 1991:35)

Chapter VII

1. Chalker & Weiner (1994:62) group the following three types (member generic, non-specific and descriptive) of examples together under the heading of 'classifying':

A black rhino can be very dangerous

We cannot afford a new car

More people should train as engineers

Jacobs (1995:109): 'The *generic indefinite use* refers not to anyone or anything specific but to a class of entities.

The advertised for **a three-bedroom apartment**.

A car can be very expensive.'

2. Donnellan (1966) uses the paraphrase 'whoever he is' for identifying the attributive use of a definite description. It has been accepted by Neale (1990); Rouchota (1992), among others. Larson & Segal (1995:345) claim that in this paraphrase, 'the nonspecific character of the definite description is made explicit'. Therefore, there is no principled difference between non-specific and attributive uses of an NP.

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