

ACCESSING NOUN-PHRASE ANTECEDENTS

Mira Ariel

ROUTLEDGE LIBRARY EDITIONS:
LINGUISTICS



ROUTLEDGE LIBRARY EDITIONS:
LINGUISTICS

Volume 12

ACCESSING NOUN-PHRASE
ANTECEDENTS

This page intentionally left blank

ACCESSING NOUN-PHRASE ANTECEDENTS

MIRA ARIEL

 **Routledge**
Taylor & Francis Group
LONDON AND NEW YORK

First published in 1990

This edition first published in 2014

by Routledge

2 Park Square, Milton Park, Abingdon, Oxon, OX14 4RN

Simultaneously published in the USA and Canada

by Routledge

711 Third Avenue, New York, NY 10017

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

© 1990 Mira Ariel

All rights reserved. No part of this book may be reprinted or reproduced or utilised in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying and recording, or in any information storage or retrieval system, without permission in writing from the publishers.

Trademark notice: Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

ISBN: 978-0-415-64438-9 (Set)

eISBN: 978-0-203-07902-7 (Set)

ISBN: 978-0-415-72354-1 (Volume 12)

eISBN: 978-1-315-85747-3 (Volume 12)

Publisher's Note

The publisher has gone to great lengths to ensure the quality of this reprint but points out that some imperfections in the original copies may be apparent.

Disclaimer

The publisher has made every effort to trace copyright holders and would welcome correspondence from those they have been unable to trace.

Accessing Noun-Phrase Antecedents

Mira Ariel



Routledge

London and New York

First published 1990
by Routledge
11 New Fetter Lane, London EC4P 4EE

Simultaneously published in the USA and Canada
by Routledge
a division of Routledge, Chapman and Hall, Inc.
29 West 35th Street, New York, NY 10001

© 1990 Mira Ariel

Typeset in 10/11 English Times
by Mayhew Typesetting, Bristol
Printed in Great Britain
by T.J. Press, Padstow, Cornwall

All rights reserved. No part of this book may be reprinted or reproduced or utilized in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying and recording, or in any information storage or retrieval system, without permission in writing from the publishers.

British Library Cataloguing in Publication Data

Ariel, Mira

Accessing noun-phrase antecedents. – (Croom Helm linguistics series).

1. Linguistics

I. Title

410

ISBN 0-415-00306-7

Library of Congress Cataloging in Publication Data

Ariel, Mira.

Accessing noun-phrase antecedents / Mira Ariel.

p. cm.

Includes bibliographical references.

ISBN 0-415-00306-7

1. Reference (Linguistics) 2. Grammar. Comparative and general-
-Noun phrase. 3. Semantics. I. Title.

P325.5.R44A75 1990

415 – dc20

89-10975

CIP

Contents

List of tables	vii
Acknowledgements	ix
Introducing Accessibility theory	1
0.1 <i>On the role of context</i>	1
0.2 <i>On the nature of context retrievals</i>	4
0.21 <i>A 'geographic' view of context</i>	5
0.3 <i>Accessibility and the structure of memory</i>	11
0.4 <i>Accessibility marking: General predictions</i>	17
0.41 <i>The distributional pattern of referring expressions</i>	17
0.42 <i>Factors affecting Accessibility</i>	22
Part I Discourse references	31
1 Low Accessibility referring expressions	33
1.1 <i>Definite descriptions</i>	34
1.2 <i>Proper names</i>	36
1.3 <i>Degrees of Accessibility within Low Accessibility Markers</i>	41
2 Intermediate Accessibility referring expressions	47
2.1 <i>Personal pronouns</i>	47
2.2 <i>Demonstrative pronouns</i>	51
2.3 <i>Degrees of Accessibility within Intermediate Accessibility Markers</i>	53
3 High Accessibility Markers	56
3.1 <i>'Deep anaphora'</i>	58
3.2 <i>Third-person pronouns</i>	61
3.3 <i>Degrees of Accessibility within High Accessibility Markers</i>	64

Contents

4 The Accessibility scale	69
4.1 <i>Constructing the Accessibility scale</i>	69
4.2 <i>The universality of the Accessibility scale</i>	76
4.2.1 <i>Formulating the Universal Accessibility Claim</i>	79
4.3 <i>Concluding remarks</i>	92
Part II Sentence-level anaphora	95
5 Applying Accessibility theory to sentence-level anaphora	97
5.1 <i>General predictions</i>	97
5.2 <i>Replacing the 'Avoid Pronoun' principle with Accessibility theory</i>	100
6 Zero subjects	106
6.1 <i>The Accessibility status of AGR types: Focus on Hebrew</i>	109
6.2 <i>Zero subjects: Focus on Chinese</i>	123
7 Clause-linkage and anaphoric marking	131
7.1 <i>Clause-linkage and Switch-Reference systems</i>	138
7.2 <i>Clause-linkage and definite NP anaphora</i>	147
7.2.1 <i>Clause-linkage and Resumptive Pronouns</i>	148
7.2.2 <i>Clause-linkage and backwards anaphora</i>	155
Part III On the interaction of Accessibility with pragmatic and social factors	165
8 The role of inferencing	169
8.1 <i>The use of context in reference resolutions</i>	171
8.2 <i>Inferred entities</i>	184
8.3 <i>On so-called presuppositions</i>	190
9 Special uses of Accessibility Markers	198
9.1 <i>Possible divergences from appropriate Accessibility marking</i>	199
9.2 <i>Referring to the 'Other': Focus on women</i>	207
9.3 <i>Appendix</i>	220
Notes	221
References	238
Sources	256
Name index	258
Subject index	262

List of tables

0.1	Breakdown of anaphoric expressions by text positions	18
0.2	Popularity of anaphoric expressions in text positions	19
0.3	Popularity of non-topic anaphoric expressions in text positions	19
1.1	Context accessed by definite descriptions	35
1.2	Contexts referred to by definite descriptions and full proper names	42
1.3	Distribution of definite descriptions and full proper names in various textual positions	42
1.4	Context types retrieved by long and short definite descriptions	44
1.5	Name types in initial position	45
1.6	Names in textual positions	45
4.1	Initial Accessibility marking	70
6.1	Hebrew AGR types with respect to Informativity	116
6.2	Person markers in past and future tenses	117
6.3	Zero/pronoun distribution in Chinese correlatives	127
9.1	Names and name types used to initially refer to women and men in the media	212
9.2	Dependency descriptions introducing females and males	213
9.3	Distribution of predominantly ‘feminine’ references	216
9.4	Distribution of predominantly ‘masculine’ references	216
9.3	Appendix	220

This page intentionally left blank

Acknowledgements

This book was written in 1987, in Oxford, while on leave from Tel-Aviv University. Thanks are due to the British Council who partially supported this stay and to the Department of Applied Linguistics, Birkbeck College, University of London, where I was an Honorary Research Fellow.

It gives me great pleasure to thank both Tanya Reinhart and Deirdre Wilson, who each read the manuscript and made many valuable comments. John Hawkins and Jonathan Price were very encouraging and helpful throughout the process.

This book is dedicated to my parents, my husband, and my children.

This page intentionally left blank

Introduction

Introducing Accessibility theory

0.1 On the role of context

Utterances cannot be processed and interpreted on their own. Without recourse to contextual information, not even their mere 'propositional content' can be established. Although Bar-Hillel (1954) made this point quite clear, even pragmatists have tended to content themselves with lip-service to this truism, in effect leaving indexicals in the same waste-basket Bar-Hillel wanted to rescue them from. The distinction between context-dependent meaning, identified with pragmatic implicatures, as defined by Grice (1975), and context-independent meaning, identified with the truth-conditions of the proposition, was retained. It was too difficult to give up, for it seemed to interrelate with other deeply rooted dichotomies.

The dichotomies linguists were so reluctant to part with concerned: the unit to be analysed, i.e. sentence vs. text or discourse; the 'component' responsible for accounting for the particular phenomenon, i.e. semantics vs. pragmatics; the cognitive faculty they were describing, i.e. linguistic knowledge, competence, or the language module vs. 'world knowledge' or central system. In order to maintain these divisions, linguists largely adopted the following model. Literal meaning is truth-conditional, and is to be analysed for each sentence (proposition, actually) separately and autonomously as a semantic, module-internal phenomenon. Non-literal meaning, on the other hand, is to be accounted for by module-external factors. Here the severe constraints on a possible (or desirable) theory were relaxed. Thus, the unit of analysis has been stretched to include anything from the phoneme to the complete text. Most importantly, the unruly context has been brought in. The extra-linguistic use of context has become the distinctive characteristic of so-called pragmatic meaning.

Introduction

This division of labour not only left the desired boundaries intact, seemingly separating the research into two discrete and well-defined fields (semantics vs. pragmatics), in addition, it had a clear advantage for semantics. The dominant view, Grice's (1975) theory on the Cooperative Principle operative in natural language discourse, offers to maintain the semantics–pragmatics division, while at the same time simplifying the semantics of natural language expressions. The lesson taught by Bar-Hillel was soon repressed. Pragmatics has come to concentrate on non-literal, non-truth-conditional aspects of utterances only. This should by no means detract from the valuable proposals brought forth to account for actual language use, nor from the importance of the non-literal conversational implicatures. I am only pointing out that the dividing line between the literal and truth-conditional on the one hand, and the non-literal and non-truth-conditional on the other hand, has to a large extent remained unchallenged.

Recently, this fictitious neat division has been taken to task. Sperber and Wilson (1982, 1986) claim that while it is feasible to maintain the linguistic / non-linguistic division of labour, this division does not correspond precisely to the separation between truth-conditional and non-truth-conditional aspects of propositions. According to Sperber and Wilson, it is the addressee's duty to enrich the processed linguistic product, relying on context, including non-linguistic resources. This enrichment, however, is crucial not only for drawing inferences over and above the literal meaning of the utterance. It is imperative for determining a unique propositional form, one that could then be assessed as true or false. Hence, the claim that context is, after all, relevant to literal meaning is taken seriously.

Granted that context plays such a crucial role in discourse processing, the next question is, obviously, how is context used in utterance interpretation in general, and, for the purposes of this book, in reference determination specifically. Sperber and Wilson's suggestion is that in processing incoming utterances, an addressee is guided by a presumption of Relevance. It is only intuitive to assume that the addressee attempts to derive as many contextual implications (i.e. as much Relevant information) as possible. However, generating more and more contextual implications necessarily implies additional processing cost. Sperber and Wilson therefore suggest that context search is governed by a principle of Maximal Relevance. Thus, whereas a principle of Relevance by itself would call for a maximal context extension, allowing for as large as possible a number of contextual

implications to be inferred by the addressee, by combining many contextual (background) propositions with the current proposition, Maximal Relevance takes into account processing costs. Hence, to achieve Maximal Relevance, an addressee must assess both the contribution towards Relevance and the cost in terms of processing effort, and then try to strike the 'right' balance between the two.¹ In fact, Sperber and Wilson further refine their suggestion by lowering the requirement to that of Optimal Relevance, which is fulfilled when the utterance produces enough contextual effects to be worth the addressee's effort to process it, putting the addressee to no unjustifiable efforts in recovering the intended effects.²

This is where Sperber and Wilson introduce the notion of Accessibility. Contexts, they argue, are distinguished as to the degree in which they are available to the addressee at any particular stage of the discourse. Accordingly, the processing effort required to access and implement a piece of information varies with its degree of Accessibility. For instance, the previous utterance processed is presumably extremely accessible to the addressee. Earlier utterances are accessible to lesser and lesser degrees. When attention is drawn to a specific item or event in the physical context of the speech event, that too can be highly accessible. Encyclopaedic Knowledge, on the other hand, should, other things being equal, be of low Accessibility.

Since contexts are arranged as to their degree of Accessibility, Sperber and Wilson predict that the initial context considered for serving as the basis on which contextual implications are derived is the proposition expressed by the previous utterance (as well as its analytic implications, its contextual effects, and any contextual assumptions used in the process). Put differently, this is the least 'costly' context. Possible contextual extensions include, however, earlier utterances, and items from the representation of the immediately observable environment, as well as from Encyclopaedic Knowledge. Although the latter type of retrievals may be more costly, they are unavoidable, given our quest for Optimal Relevance. Consider the following example:

- [1] A: Would you like to eat out tonight?
B: We certainly have nothing in the house.

When processing B's response, A must minimally infer via Relevance, it is claimed, that *nothing* refers to edible things appropriate for dinner (furniture, plants, cereals, sweets, etc., will not do in this case). Based on the assumption that there is nothing proper to eat in the house, together with the assumption

Introduction

that one needs to eat at a time prior to a state where the house will contain some food, A will then be in a position to infer a (positive) answer to the yes / no question she had posed.

The notion of Accessibility is not much elaborated on in Sperber and Wilson's writings. Their view is that accessing is crucial in the process of utterance interpretation, literal meaning included, and that moreover, the degree of Accessibility affects the assessment of Optimal Relevance. But all they say on accessing is that it is directly governed by the presumption of Relevance. That is, an addressee's willingness to access less and less accessible material is solely dictated by the presumption of Optimal Relevance.³ It is, however, quite in line with their theory to hypothesize that in addition, a speaker has specific means she can use in order to guide her addressee as to the retrieval process. In other words, not all retrievals are left to the addressee's discretion. This is precisely the claim we will explore in this book. Natural languages provide speakers with a rich marking system, specialized in marking as accessible specific mental entities which they should bring to bear while processing the current utterance. In fact, I will argue that speakers not only mark certain pieces of information as accessible, they also indicate how accessible it is to the addressee.

This book will concentrate on the system of accessing NP antecedents, although the claim is much more general. I believe that all context retrievals are governed by Accessibility theory. Thus, other mental entities (corresponding to verbs and VPs, dependent clauses, and independent clauses) are to be marked as accessible in various degrees by speakers. I have discussed these expressions elsewhere (see Ariel 1985a,b, 1988b), so they will not be addressed in this book. With respect to reference, I would argue that not only the interpretation of indexicals belongs in pragmatics. So-called grammatical aspects of all definite NPs' interpretation are also governed to a large extent by one and the same cognitive principle (of Accessibility) (see also Ariel 1988d). We begin by addressing the question of what it is that those markers I term Accessibility Markers signal to the addressee (0.2).

0.2 On the nature of context retrievals

Evoking context in order to account for presuppositional phenomena has been quite non-controversial among philosophers and linguists alike. Frege's (1892) commonsensical claim that 'we presuppose a referent' (p.214) when using a referring expression

corresponds to the intuition that we normally assume some pre-condition must obtain for referring expressions to be felicitous. This intuition is common to all later developments of Frege's suggestion by philosophers and linguists alike, with the notable exception of Russell (1905) and Dummett (1964) (see Quine 1960; Strawson 1956, 1964; Austin 1962; and Searle 1958, to name a few philosophers). Even Donnellan (1966) and Grice (1981), who do not necessarily share Strawson's view as to the effect of a presupposition failure, agree with this intuition. The nature of this intuition, as it is formally expressed in natural language, is the object of Accessibility theory (see Ariel 1985a, 1988c), although the linguistic phenomena examined are what I term Accessibility Markers, and these do not fully correspond to what has conventionally been termed presupposing structures. The question to be asked is what conditions allow an appropriate use of all forms marking Accessibility, and moreover, what function is served by accessible information. In other words, what discourse and cognitive functions lie behind it. For (all) definite NPs' interpretation the answer is self-evident. Identifying the referents is a crucial step in the establishment of a truth value for the proposition. For the other marker types mentioned above, accessing is performed for a variety of discourse functions, not necessarily having to do with literal meaning (see Ariel 1985a,b, 1988b for details).

0.21 A 'geographic' view of context

It is primarily the existential presupposition associated with definite NPs which has come to be analysed as contextually Given. The concept of Givenness, a development of the Praguean notion of Old, figures prominently in the work of functional linguists and psychologists alike (see Kuno 1972b, 1975; Chafe 1976; Prince 1978b, 1979, 1981; Clark and Haviland 1977; Clark and Marshall 1981; Ariel 1985a,b, 1988b). Since Givenness, like Accessibility, is a graded notion, crucially defined by reference to context, we might consider the proposals made for defining Givenness *vis-à-vis* context, in order to investigate possible connections between linguistic forms and context. In fact, I will argue that Accessibility should replace the notion of Givenness.

The most common way of imposing some structure on context is to view it as composed of three types (hence, calling for the assumption of three Givenness types). This is what I term the 'geographic' division of context. Context material is distinguished as to the physical source believed to contain it: General

Introduction

or Encyclopaedic Knowledge, the Physical Environment of the speech event, and the Linguistic Context, i.e. previous utterances actually mentioned in the discourse. Since it is naïve to assume that referring expressions directly refer to physical entities (be they linguistic or other kinds of objects), we must assume that in all cases an addressee looks for antecedents which are themselves mental representations. Thus, in accordance with the three-way division suggested above, we should also hypothesize a three-way distinction as to the mental representation of each context-type. This is perhaps not entirely counter-intuitive. Representations of linguistic material and physical objects, we could assume, 'reside' in short-term working memory, and Encyclopaedic Knowledge in long-term memory. However, despite the fact that indeed for Givenness / Accessibility to hold one must rely on one of the sources above, it remains to be seen whether natural languages actually code the differences among context-types, as defined above. I will argue that this is only partially so.

(Geographic) Context-Form correlations seem undeniable in certain cases. Thus, as Clark and Marshall (1981) note, pronouns normally refer to the Linguistic Context, demonstratives to the Physical Context, and proper names to General Knowledge. Indeed, initially, it is hard to imagine situations where we do not use referring expressions in conformity with this three-way geographic division of context. We might then suggest, as Ariel (1985a), that the above expressions are Linguistic Givenness Markers, Physical Givenness Markers, and Knowledge Givenness Markers respectively. Connecting each referring expression to a specific 'geographic' location has also the advantage of predicting its status regarding existential presuppositions. Note that while pronouns are not normally discussed in reference to presuppositionality, demonstrative pronouns, definite descriptions, and proper names are. This can be attributed to the different context-types they are (initially) retrieved from. Entities arrived at either through the accessing of Encyclopaedic Knowledge or of our perception of the physical surroundings tend to be presupposed to exist. We normally store in our long-term memory information which we trust to be true. With respect to referents this means that they exist (though not necessarily in the literal, physical sense, of course). The same status is attributed to the entities that surround us. Despite our acknowledged recognition of the 'subjectivity' of our senses, we tend not to doubt the existence of the objects we perceive. Linguistic entities, on the other hand, are 'mere words'. Referring to a linguistic antecedent therefore does not commit the speaker to a belief in its

existence. Such entities are Given (or accessible) not by virtue of their having been processed and found to be correct, but merely by virtue of their having been mentioned, even if by another, perhaps misguided, speaker (more on this in Chapter 8).

However, despite the above, most Givenness / Accessibility Markers may be used to refer to mental entities derived from more than one type of context. In other words, NP forms do not neatly divide into 'full NPs' (say, proper names, definite descriptions, deictics), which only refer independently, as opposed to 'anaphoric expressions' (e.g. pronouns, gaps), which invariably require a linguistic antecedent in order to be interpreted. Similarly, Given / Accessible Predicates and propositions are not necessarily specialized for reference to Encyclopaedic Knowledge (e.g. factives, *it*- and *wh*-clefts, etc.), versus reference to linguistic material (Gapping, for example). The following examples show that we cannot establish a one-to-one correspondence between form and function according to the context-type. In other words, I am suggesting doing away with the referential-anaphoric distinction:

[2] Definite Description

a Encyclopaedic Knowledge Context:

The party is scheduled to announce its nuclear policy this afternoon (Republicans, Democrats, Labour, Greens, etc.).

b Physical Context (TV report, showing Greens as they gather to vote):

The party is scheduled to announce its nuclear policy this afternoon (probably Greens not Republicans, Democrats, Labour, etc.).

c Linguistic Context:

The Labour convention meeting today may prove extremely important. *The party* is scheduled to announce its nuclear policy this afternoon (probably Labour, not Republicans, Democrats, Greens, etc.).

[3] Proper Name

a Encyclopaedic Knowledge:

Gandhi is a real man (Mahatma Gandhi, Rajiv Gandhi, Indira Gandhi).

b Physical Context (pointing to a newspaper with Rajiv Gandhi's picture on the front page):

Gandhi is a real man (probably Rajiv Gandhi).

c Linguistic Context:

Whenever they mentioned *Indira Gandhi* in western

Introduction

newspapers, they would say 'Gandhi is a real man' (probably Indira Gandhi, not Mahatma Gandhi or Rajiv Gandhi).

- [4] Demonstrative Expression
- a Encyclopaedic Knowledge:
This stupid neighbour is getting on my nerves (John, Mary, etc.).
 - b Physical Context (John passes by):
This stupid neighbour is getting on my nerves (John, not Mary, etc.).
 - c Linguistic Context:
John has been singing operas all afternoon. *This stupid neighbour* is getting on my nerves!
- [5] Pronoun
- a Encyclopaedic Knowledge:
Sherlock Holmes to Watson: The butler did *it* (the murder, eliminating incriminating evidence, etc.).
 - b Physical Context (drinks have been poured out):
Sherlock Holmes to Watson: The butler did *it* (the pouring of the drinks).
 - c Linguistic Context:
What a cruel murder. The butler did *it* (the murder, not the elimination of incriminating evidence).
- [6] Gap⁴
- a Physical Context (handing some syrup):
Shake \emptyset before using (syrup).
 - b Linguistic Context:
Here is some syrup for you. Shake \emptyset before using (\emptyset = syrup).

Examples [2], [3], and [4] show that definite descriptions, names, and demonstrative expressions can refer to all three context-types. Crucially, just like supposedly linguistic context retrievers, they too may be dependent for their interpretation on some linguistic 'fuller form'. [5] and [6] show that pronouns and even gaps may be used as primary, 'independent' identifying expressions. The following make a similar point for a 'presupposition' [7] and a Given / Accessible Predicate [8]. In both cases the antecedent legitimizing the use of the particular form (a factive in [7], a *do it* in [8]) is either linguistic (the [a] cases) or extralinguistic (the [b] cases):

- [7] Factive
- a A: I've picked some mushrooms this morning. They were so delicious that I ate them all.
 B: Don't you think you might regret *having eaten those mushrooms?*
- b (Mary is seen picking and eating mushrooms)
 She will regret *having eaten those mushrooms.*
- [8] *Do it*
- a A: I'd like to pick those mushrooms and eat them.
 B: Don't *do it!*
- b (Mary is seen picking and eating mushrooms)
 A: Don't *do it!*

I am certainly not the first one to notice that the three-way division of context is not very helpful in trying to account for linguistic expressions which rely on contextual retrievals. Linguists writing on Givenness / Oldness in effect gave it up too. Prince (1981a), who attempts to clarify how the intuitive basis underlying Givenness was put to use in different linguistic theories, distinguishes between three basic definitions: Givenness as a requirement on Predictability, Givenness as a requirement on Saliency, and Givenness as a requirement on Shared Knowledge. Givenness in the sense of Predictability / Recoverability is described as 'The speaker assumes that the hearer can PREDICT OR COULD HAVE PREDICTED that a PARTICULAR LINGUISTIC ITEM will or would occur in a particular position WITHIN A SENTENCE' (p.226). Such a definition is characteristic of Kuno (1972b, 1978, 1979), and Halliday and Hasan (1976). Givenness in the sense of Saliency is described as 'The speaker assumes that the hearer has or could appropriately have some particular thing / entity . . . in his / her CONSCIOUSNESS at the time of hearing the utterance' (Prince 1981a:228). This definition is Chafe's (1976), and is the one adopted (though modified) by Prince (1978b) in order to account for the function of *wh*-clefts. Givenness in the sense of Shared Knowledge is described as 'The speaker assumes that the hearer "knows", assumes, or can infer a particular thing (but is not necessarily thinking about it)' (p.230). This type of Givenness is represented by Clark and Haviland (1977), and is implicit in all the presuppositional literature on the projection problem.

These three starting points for defining Given / contextual material are quite similar to the classical 'geographic' division of context into Linguistic, Physical, and Knowledge Contexts. Though the second type of Givenness above is not formulated

Introduction

specifically to include reference to perceived physical objects or events, it is this definition linguists employed to account for such treatment of seemingly New entities as Given. But, as Prince notes, despite their own definitions of Givenness, where each focused on only one context-type, presumably motivated by examples such as [2–8] above, most researchers have concluded that the three notions of Givenness are not mutually exclusive. In fact, most of them have had to use more than one aspect of the definition, despite the obvious cognitive differences among them. Thus, Kuno, for example, has to include linguistic expressions referring to objects in the vicinity of the speakers (i.e. ‘salient’), as obeying a similar condition of Recoverability as items actually mentioned in the previous discourse. Moreover, he includes under ‘anaphoric’ (= Given) a referent from ‘the permanent registry’ (i.e. ‘Shared Knowledge’).

Thus, despite the three conceptual principles Prince isolates from the current definitions, each had to be extended so that it include the other types as well, in order to explain linguistic questions such as definiteness, a decision to use a pronoun, etc. Indeed, Givenness/Accessibility can only be assumed on the basis of these three context-types. But any theory that attempts to simply correlate between linguistic markers of Givenness and context-types cannot be maintained. In order to avoid a mere general statement to the effect that any definite form can refer to any context-type, in other words, in order to show that choice of a referential form is far from accidental, I suggest that natural languages code the *degree of Accessibility* of an antecedent, not its initial ‘geographic’ source. Though the various degrees of Accessibility are non-arbitrarily related to context-types (see Chapter 4), the correlations are not perfect, and it is degree of Accessibility which is a better predictor for the appropriate distribution of the various linguistic forms initially identified as requiring some reliance on context.

Note a few more problems with a ‘geographic’ definition of context as an account for the proper use of Givenness/Accessibility Markers. In [9] it fails to motivate the preference, discourse initially, of the [b] version, which refers the addressee to his Encyclopaedic Knowledge over the [a] version, which refers the addressee to his Physical Environment:

- [9] a *That woman over there* is very intelligent.
b *Rachel* is very intelligent.

[10] makes a similar point about physical vs. linguistic contextualization:⁵

- [10] a There's this professor I met. *She's* very intelligent.
 b *That professor over there* is very intelligent.

But whereas [9] and [10] seem to point to a preference of Knowledge over Physical Context, and Physical over Linguistic Context, [11] below shows that this is not always the case, certainly non-initially:

- [11] Geraldine Ferraro has been an active Democrat for quite a few years. But *she* / ??*Geraldine Ferraro* ran for Vice-Presidency only in 1984.

In order to account for the actual distribution of all definite NPs, I propose to associate each Givenness Marker with a specific degree of Accessibility, rather than with a specific context-type. Hence the terminological change to Accessibility Markers from now on. Just as Givenness was naturally associated with 'geographic' context, a natural candidate for the definition of Accessibility is memory structure. We turn to see the connection between memory and Accessibility next.

0.3 Accessibility and the structure of memory

Chafe (1976) is the first attempt to connect Givenness with memory/consciousness. Chafe considers how long Givenness lasts (Givenness for Chafe is what is assumed to be in the addressee's consciousness). He holds that the minute some information leaves consciousness some Recoverability is required for the interpretation of a form marked Given. Encyclopaedic Knowledge, not defined as Givenness by Chafe, of course lasts as long as our knowledge remains constant (momentary forgetfulness not counted). In fact, since Chafe does not include Encyclopaedic Knowledge as potential Given information, he has to have a separate notion for 'definiteness', which, he is forced to claim, lasts longer than Givenness. Obviously so. Our knowledge does not change as often as we forget the antecedent of a previously mentioned referring expression. But can we really say that our Encyclopaedic Knowledge is always available to us? The question for Accessibility, then, is not only how long it lasts, but also how easy/difficult it is to access the relevant material.

Comprehension is certainly influenced by a constraint that, at any point in time, one can only keep a small portion of one's memory in an automatically accessible form. Some form of reinstatement process is necessary for sentence comprehension when the relevant information is not automatically accessible (see

Introduction

Lesgold *et al.* 1979; and Yekovich *et al.* 1979, *inter alia*). Indeed, what we called Encyclopaedic Knowledge is actually that knowledge stored in long-term memory, i.e. material that is not normally immediately accessible. Hence, markers referring to 'Knowledge Context' are indeed better defined as Low Accessibility Markers. Markers referring to Physical and Linguistic Contexts present material that is much more accessible, part of which is probably currently stored in short-term working memory.

The distinction between short-term memory and long-term memory for sentence comprehension seems well-based. Thus, studies on memory for sentences provide ample evidence that the more fully information is processed, the less acoustic and syntactic, and the more semantic or eventually conceptual the code. The phonological and syntactic properties of surface structures are retained only for very short periods of time (see Sachs 1967; Wanner 1974). Most researchers are in agreement that a thirty-second interval marks the end of short-term memory capacity to hold information, since that information is held verbatim. Tanenhaus *et al.* (1985), using rhyme priming experiments, conclude that priming effect completely disappears after seven words. Their results suggest that the phonological code for a word becomes available as a word is being accessed, but it decays within four to seven words. An experiment supporting a distinction between formal versus conceptual retention is Sachs (1967), who asked subjects to answer questions based on comparatives supplied to them. It was found that when the questions posed to subjects were literally phrased in the original form, response time was relatively short. However, the gap in response time between literal and non-literal phrasing got smaller as the period between the data presentation and the questioning got longer. Literalness, then, is not so crucial in longer-term storage. Similar conclusions to the effect that immediate memory contains a word-for-word representation whereas long-term memory has a preference for unmarked (non-negatives, non-passives) and non-verbal forms were arrived at by Jarvella (1971), Trabasso *et al.* (1971), Kinstch and Monk (1972), Garrod and Trabasso (1973), and others.

But the fact is that comprehension is not simply a unidirectional flow of information temporarily held in short-term memory to a long-term storage. Encyclopaedic Knowledge is constantly being retrieved from long-term memory as schema (Bartlett 1932), frame (Minsky 1977), or script (Schank and Abelson 1977) in order to establish utterance Relevance.⁶

Moreover, long-term memory for pure surface structures also exists (prayers in Hebrew or Latin, recited by believers who do not even speak the language). Shulman (1972), Tulving (1972), and many others have shown that short-term memory contains visual forms as well as quite a bit of semantic information in addition to its predominantly acoustic nature. Thus, it appears that an automatic identification of short-term memory with formal surface structure features, and long-term memory with semantic features is unrealistic.

An alternative to a short-term vs. long-term dichotomy was suggested by Craik and Lockhart (1972) and Tulving (1972). Memory is seen as a continuum from the transient products of acoustic, visual, and syntactic analyses to the more stable products of semantic operations. Processing, like perception in general, involves a series of analyses at a number of levels. 'The depth at which primary memory operates will depend on the usefulness to the subject of continuing to process . . . and also upon the amenability of the material to deeper processing' (Craik and Lockhart 1972:670). Craik and Tulving (1975) show that the best results in recognition and in recall tests were obtained 'when *semantic* (deeper level) questions were asked about a presented word' [emphasis added] (p.278).⁷

Another, more tentative, suggestion in the same spirit, i.e. that memory types come in a richer variety, is Tulving's (1972) proposed distinction between semantic memory and episodic memory (or Schank's (1980) event vs. other types of memory). Semantic memory contains permanent knowledge (akin to an encyclopaedia, arranged by topics). Episodic memory holds temporally encoded information (akin to a diary, arranged chronologically). Clark and Marshall (1981) also suggest a metaphorical view of memory as consisting of an encyclopaedia and a diary (plus cross-references between them). The information stored in episodic memory can become inaccessible rather easily, for New information is constantly coming in. Presumably all information from short-term memory is passed on to episodic memory, but certainly not all episodic memories are transferred to long-term memory. Some information is discarded, as it seems unreliable, insignificant, etc.

A further crucial development in the view of memory structure seems rather similar to the changed concept of context we have argued for. Just as context cannot probably be divided geographically if it is to account for linguistic behaviour, so it seems that at least some researchers are now casting doubt on the 'geographic' mapping of various memory stores. The various

Introduction

memory types (sensory, short-term, long-term) need not correspond to different neurological systems (Atkinson and Wescourt 1975). Monsell (1984:328) sets out against the 'near obsession with minimizing the number of stores hypothesized'. According to him, working memory, for example, is but a general category name for quite a few levels of representations only some of which are linked with each other, in the spirit of a modular view of the mind. Instead, we can think of the properties characterizing different memory storages (permanence, short-span, conceptually coded, phonetically coded, etc.) as features characteristic of different phases of activation of one and the same system. And activation of stored items should not be thought of as an all or nothing phenomenon (see Morton 1977, 1979). Memory nodes may be strongly or weakly activated. A recent accessing, for example, temporarily raises the activation of specific units, thus making them more prone to quickly react to subsequent accessing.

Thus, instead of grouping items in memory into different stores, we can characterize them either by the representational form we believe them to be in or by the degree of activation they happen to be in. The most accommodating view of memory regarding the linguistic findings to be outlined in this book is that of the Parallel Distributed Processing (PDP) models (see McClelland and Rumelhart 1986a in general, and especially their 1986b), whose view of memory is that it consists of modular units receiving and sending out signals to other such modules. Signals are weighted and hence the excitation they create in the various units differs, depending on the strength of the connection between the two units involved. Such strengths are acquired via a learning process, relying on frequency of use mainly. The difference between so-called episodic and semantic memories amounts to a difference between number of connections the relevant units have with other units. Semantic memory items are 'decontextualized', as it were, being associated with too many contexts. Episodic memory items, on the other hand, are very much context-bound. Each is connected to only a few, possibly even a single unit which can set it into an excitation phase. Such differences naturally affect retrievals from memory.

The model is in no need of geographic borderlines among memory storages. Short-term memory effects characterize items whose level of excitation is above a certain threshold. Long-term memory effects are due to the status of lower activation associated with most items. Retrieval in such a model is seen as a reinstatement of a mental state brought about by a cue sending

signals either from sensory sources or from within the memory system itself, due to activation of other, related units. The human memory system is content addressable, but it does not require a sequential search nor the consultation of an index. Every item is connected to all of its attributes and has mutually excitatory interactions with them. In principle, each one of these properties is a potential retrieval cue. Still, since these properties are also connected to possibly many other items, their ability to uniquely or significantly excite a single item varies, depending on the number of the items each is associated with, as well as with the strength of the connection. To take a concrete example, if one knows a few Janes, the property 'known by the name Jane' is not a highly efficient cue, but if one has been discussing a particular Jane for the last few minutes then the unit(s) corresponding to the specific Jane are highly activated and a bare name is after all a sufficient cue. The same goes for strong 'long-term memory' associations, i.e. even if one has not mentioned any specific Jane, one can trust one's addressee to pick out the right Jane provided there is a certain Jane whose corresponding memory unit has a clearly superior strength value connection with the property 'Jane'.⁸

References to retrievals of specific entities are rather rare in the PDP literature (an exception is McClelland 1981, as quoted in McClelland *et al.* 1986). In fact, most of the literature on memory retrievals has tended to concentrate on content word accessing. But extensions to 'leaner' cues (pronouns, gaps, etc.) are not very difficult to incorporate into the model. When used to retrieve from memory, such cues necessarily employ a criterion of activation degree, since they simply lack the content address characteristic of other, richer, referring expressions. Since PDP models in principle enable infinitely many distinctions in degree of activation, we need not in fact separate our treatment of content addressing referring expressions from that of the emptier expressions which necessarily rely on degree of activation. All can be said to point to different degrees of actual activation (current level of excitation) or potential activation (connection strength value). The thesis of this book is that such activation patterns determine the choice of the referring expression actually used.

Hence, the picture of memory drawn in the last few paragraphs is of a continuum of permanence and Accessibility. Items in memory are not locally defined, nor is the code used to store them (phonological vs. semantic) crucial in the classification. I believe that only if this is the view of memory adopted, can it

Introduction

(memory) be said to directly underlie the notion of Accessibility, developed in this book in order to account for context retrievals in discourse. A two- or even three-way division of memory (short-term working memory, episodic memory, and long-term memory) would not do, for, as I will argue in Parts I and II, degrees of Accessibility come in an extremely rich variety. Garrod and Sanford (1982), setting out to deal with similar phenomena, indeed suggest we enrich the memory system we assume. Since they note a difference between reference to explicit material as opposed to reference to implicit material, they propose to distinguish not only between static memory (i.e. long-term memory) and focused memory (short-term memory), but also between explicit and implicit focus, as well as between text memory and semantic memory. I will not take the same step and impose a new memory type for each degree of Accessibility I argue for. The rationale for this is that one can entertain different mental representations (patterns of activation) at very many differing Accessibility degrees. The advantage of Parallel Distributed Processing models for Accessibility theory is that an absolutely rigid memory division is not required any more. I believe that degrees of Accessibility correspond to different statuses within memory, where material may be extremely salient, i.e. highly activated, or, vice versa, unactivated or fading away.

Summing up our claims regarding possible retrieval sources, section 0.2 has argued against identifying various linguistic forms with specific 'geographically-defined' context material. Section 0.3, moreover, proposed that memory structure is most probably not even compatible with a location approach. The question of retrievability should not, therefore, be phrased as a 'where' (in context, in memory) question. Rather, the view I take is that retrievability is crucially dependent on degree of activation, or Accessibility. It is the specific degree of Accessibility of mental entities attributed by the speaker to the addressee which is the crucial criterion determining the forms of retrieval marking. An addressee is instructed to retrieve a mental representation which may be characterized by reference to the individual features associated with it ('wise', 'short'), but always also with a feature establishing its current Accessibility to him. In other words, a speaker signals to her addressee how easy/automatic the retrieval is. The various types of referring expressions, then, each represent different sets of instructions for the search process. We could almost say that they represent different 'price tags', indicating the processing effort (i.e. cost) involved in the retrieval of the intended entity.

0.4 Accessibility marking: General predictions

0.41 *The distributional pattern of referring expressions*

I suggest that a hypothesized connection between what I term Accessibility marking and the nature of memory should help us better understand what happens during discourse progression in terms of choice of referential expressions. Note that a context-type definition of these markers predicts that the only difference we should find is that speakers distinguish between initial and non-initial references. Whereas initial references must all be made to the extra-linguistic contexts (Physical Context or Encyclopaedic Knowledge), non-initial references should all be made to the text itself. If we translate this into actual distributional claims, we should expect to find proper names, definite descriptions, and deictics only initially, while pronouns and gaps should be restricted to subsequent mentions. On the other hand, on the Accessibility account, it is not so much the context-type which dictates what form to choose. Rather, it is the degree of Accessibility of the antecedent which is the crucial factor. Moreover, since memory tends to be transient, and to fluctuate with respect to the availability of items at different points in the discourse, we should expect a more complex distribution of markers, always reflecting the current status an antecedent is believed to have in memory.

In effect extending claims by Sanford and Garrod (1981), Yule (1981), Marslen-Wilson *et al.* (1982) and Givón (1980, 1983b), I have suggested (Ariel 1985a, 1988c) that forms initially used to retrieve from Encyclopaedic Knowledge (proper names, definite descriptions) should be analysed as Low Accessibility Markers.⁹ Hence, they should occur whenever their antecedents are not currently salient. Forms initially used to refer to the Physical Environment (deictics and demonstrative expressions) retrieve antecedents whose status of Accessibility is intermediate. Last, forms seemingly restricted to the Linguistic Context (pronouns, gaps) are to be used only when the antecedent is highly accessible.

Not only the invented examples [2–6] above argue against a ‘geographic context’ account for referring expressions’ distribution. An examination of real texts confirms that such an analysis is wrong, while supporting our Accessibility hypothesis. In actual texts, it is not the case that definite descriptions or proper names occur only initially. Indeed, when we examine texts where the three Accessibility marker-types (and not only pronouns and gaps) refer to entities explicitly mentioned in the text, we can

Introduction

clearly see the role of Accessibility in determining marker choice. The general picture that emerges from counts restricted to textual references (i.e. Linguistic Context) is that with respect to Distance from their antecedents, pronouns (High Accessibility Markers) are used predominantly in the shorter distances, demonstratives (Intermediate Accessibility Markers) in intermediate distances, and definite descriptions (Low Accessibility Markers) in the larger distances. Here are some statistics collected from four texts, each consisting of about 2200 words:¹⁰

Table 0.1 Breakdown of anaphoric expressions by text positions

<i>Referring expression</i>	<i>Text position</i>				
	<i>Same S</i>	<i>Previous S</i>	<i>Same paragraph</i>	<i>Across paragraph</i>	<i>TOTAL</i>
Pronoun	110=20.8%	320=60.5%	75 = 14.2%	24 = 4.5%	529 = 100%
Demonstrative	4 = 4.8%	50=59.5%	17=20.2%	13 = 15.5%	84 = 100%
Definite description	4 = 2.8%	20 = 14.1%	65=45.8%	53=37.3%	142 = 100%

Table 0.1 shows that pronouns favour a position where the antecedent occurs in the previous sentence. Demonstratives favour the same environment, so the difference between pronouns and demonstratives is mainly reflected in their secondary environments, that of pronouns being the same sentence, that of demonstratives further in the same paragraph. Definite descriptions favour the two most distant positions (same paragraph and across the paragraph). In fact, we can say that the majority of occurrences of each expression type (about 80 per cent) centres in those two positions in bold italic for each referring expression in Table 0.1. Table 0.2 analyses the same data from the perspective of textual positions, i.e. given a certain textual position, what likelihood there is for a certain referring expression to occur. Not surprisingly, co-reference in intra-sentential position almost always means use of pronouns (93 per cent). Previous sentence position clearly favours pronouns as well, but at a somewhat lower rate (82 per cent). Further in the paragraph position seems to favour pronouns and definite descriptions (89 per cent together). Finally, across the paragraph position is predominantly filled by definite descriptions, though quite a few pronouns occur in this position too:

Table 0.2 Popularity of anaphoric expressions in text positions

<i>Text position</i>	<i>Expression</i>			<i>TOTAL</i>
	<i>Pronoun</i>	<i>Demonstrative</i>	<i>Definite description</i>	
Same S	110=93.2%	4 = 3.4%	4 = 3.4%	118 = 100%
Previous S	320=82.1%	50 = 12.8%	20 = 5.1%	390 = 100%
Same paragraph	75=47.8%	17 = 10.8%	65=41.4%	157 = 100%
Across paragraph	24=26.7%	13 = 14.4%	53=58.9%	90 = 100%

With respect to pronouns, Table 0.2 seems somewhat of a counter-example. Even if we take into consideration, which indeed we must, that demonstratives (in English) are simply not very popular, the high percentages of pronouns in the two distant positions seems to go against our claim that pronouns mark High Accessibility. However, as will be mentioned below, Distance is not the only factor affecting Accessibility. Another is the salience of the referent, as related to its being a topic or a non-topic, for example. Indeed, once we leave out the anaphors referring to discourse topics in our counts, the picture changes quite dramatically. While the shorter-distance positions are hardly affected, the longer-distance positions now conform to the Accessibility claims. Table 0.3 presents the same data, except for references to the discourse topics (520 references out of the 755 in Tables 0.1 and 0.2):

Table 0.3 Popularity of non-topic anaphoric expressions in text positions

<i>Text position</i>	<i>Expression</i>			<i>TOTAL</i>
	<i>Pronoun</i>	<i>Demonstrative</i>	<i>Definite description</i>	
Same S	69=89.6%	4 = 5.2%	4 = 5.2%	77 = 100%
Previous S	189=73.1%	50 = 19.3%	20 = 7.7%	259 = 100%
Same paragraph	34 = 29.3%	17 = 14.7%	65=56%	116 = 100%
Across paragraph	2 = 2.9%	13 = 19.1%	53=78%	68 = 100%

Thus, when we neutralize the factor of topicality, we can clearly see that in short distances, anaphoric expressions of the High Accessibility type are most popular, or least marked. In larger distances, anaphoric expressions of Low Accessibility are most popular. Since demonstratives (Intermediate Accessibility Markers) are not prevalent in English, they never predominate,

Introduction

not even in the intermediate distance position, but as Table 0.1 reveals, its pattern of occurrence definitely shows that the majority of its occurrences fall in the two intermediate distances. Actual Distance was, of course, only partially taken into account in these findings. I preferred to consider sentence and paragraph boundaries, since textual unit boundaries are important factors in themselves, in addition to their indication of Distance. Memory scope is crucially interrelated with textual units. Obviously, at least at some unit-closures material is released from short-term memory.

Other researchers have presented findings which can be accounted for via Accessibility theory. We will quote Givón (1983a), Marslen-Wilson *et al.* (1982), and Clancy (1980) in more detail in Chapter 4. A few more specific findings will be mentioned now, however. Hobbs (1976) corroborates my findings for pronouns. He found that 90 per cent of pronoun antecedents occur within the same sentence. Eight per cent occur one sentence before, and only 2 per cent have antecedents further away. Yule (1981) has similar findings. He too reaches the conclusion that 'the use of more attenuated forms (e.g. *it*, \emptyset) is much more frequent for current entities' (p.49). Thus, the degree of attenuation increases after the first mention of the New entity, but it decreases after a while. Whereas 92 per cent of the references to non-recent entities in his data were performed by what I call Intermediate and Low Accessibility Markers, only 36 per cent of the references to current entities used Intermediate and Low Accessibility Markers. The numbers for High Accessibility Markers are a mirror image. Whereas in 64 per cent of the references made to current entities High Accessibility Markers were used, non-recent entities were referred to by High Accessibility Markers only in 8 per cent of the cases.

Clark and Sengul (1979) present experiments showing that people took less time comprehending a sentence when the referents of definite descriptions and anaphoric pronouns were mentioned in the previous clause, as opposed to two and three sentences back. An example for the kinds of sentences they tested is the following:

[12] Context:

- a A broadloom *rug* in rose and purple colours covered the floor.
- b Dim light from the small brass *lamp* cast shadows on the walls.
- c In one corner of the room was an upholstered *chair*.

Target:

d The rug / lamp / chair appeared to be an antique.

Subjects read the first three context sentences, and then they were shown one version of the target sentence. I emphasized the antecedents (which was not done in the original experiment, of course) in order to show the different distances separating each anaphor from its antecedent. Since the gap in response time between two and three sentences away was found to be small, but the one between one and two sentences large, Clark and Sengul concluded 'that independent of other factors, the last clause processed grants the entities it mentions a privileged place in working memory. They are readily available to be referred to by nouns and pronouns' (p.35). Indeed, comprehending a sentence containing an NP marked accessible took 17.8 per cent more time if the antecedent appeared three clauses away. Naturally, the time needed to comprehend further away antecedents will get longer and longer as the Distance measured is enlarged. Clark and Sengul assign no importance to the difference between the processing times of definite NPs and pronouns when antecedents appeared three sentences away. But still, their findings show that pronouns took 5 per cent longer than definite NPs when the antecedent was not very close. This is precisely what is predicted by a theory of Accessibility. A Low Accessibility Marker should be a better retriever under such circumstances.

Rochester and Martin (1977), who compared the use of 'phoric' NPs (= marked accessible) by normal (N) speakers and thought-disturbed (TD) speakers, found that the ratio of demonstrative vs. pronominal forms is significantly different between the two groups. TD speakers use many more Intermediate Accessibility Markers than N speakers. They use High Accessibility Markers significantly less, accordingly: a TD speaker uses two High Accessibility Markers for each Intermediate Accessibility Marker, whereas an N speaker uses four High Accessibility Markers for one Intermediate Accessibility Marker. Interestingly enough, the total number of entities marked accessible (of all types) is not really different for the two groups: 87.6 per cent of the NPs were marked accessible for the N speakers, and 86.3 per cent of the NPs were marked accessible by the TD speakers.¹¹ This means that marking as accessible is not sufficient. Specifically, preferring an Accessibility Marker, normally reserved for a Lower Accessibility rate, may sometimes work against the coherence of the text. In effect, the problem of

Introduction

the TD speakers is that they fail to recognize that as discourse is going on, information is constantly changing its status of Accessibility. They seem not to take advantage of short-term storage.¹²

Segmentation into paragraphs has an important role in decisions about the contents of current working memory. Indeed, Longacre (1979) notes that there are languages (Gurung of Nepal and Sanio-Hiowe of New Guinea), where back reference is restricted to paragraph scope. In other languages we find that initial paragraph position of texts whose discourse topics have long been established tend to mention the topic in a full (Lower Accessibility marking) NP form anyway, rather than in pronominal form. In three texts I examined (they were three Hebrew magazine portrait articles), containing a total of sixty paragraphs, fifty-three mentioned the continuing discourse topic in the first sentence of the paragraph:¹³ 75.5 per cent of these chose a Low Accessibility Marker, rather than a High Accessibility Marker.

0.42 Factors affecting Accessibility

A view of context retrievals as dictated by a scale ranging over High and Low Accessibility rates implies that some potential antecedents are more accessible than others (see also Lyons 1977; McCawley 1979; and Yule 1981). So far, we have concentrated on the recency of the mention (and textual unit boundaries) as determining ease of Accessibility. Though these are of extreme importance, they are not the only factors affecting Accessibility of antecedents. Hence, the correlation of High Accessibility Markers with highly accessible antecedents (and of Low Accessibility Markers with least accessible antecedents) can be further supported by other findings related to degree of Accessibility. Clark *et al.* (1983) demonstrate the importance of physical salience when analysing demonstrative references. Thus, in an experiment they performed, when subjects had to decide which physical entity was being referred to by an expression like *this flower*, the role of physical salience came out. In fact, the experimenter was pointing at a picture which contained four types of flowers. Nevertheless, when one type was more prominent (basically made larger in the photograph), most subjects were in agreement that the researcher had that particular flower in mind. Indeed, when subjects were asked to pick 'the most prominent or salient X', they tended to pick the same entity they chose as referent for the potentially ambiguous demonstrative reference.

In natural discourse, however, topics (mainly discourse topics)

constitute the most salient entities more often than not. It seems that topics occupy a privileged position in memory. Findings from anaphora confirm this hypothesis about the high Accessibility of topics. Broadbent (1973), for example, found that in ambiguous cases of pronoun reference assignment, preference was given to an interpretation of the pronoun as anaphoric to the discourse topic. Thus, in the following, potentially ambiguous, sentence, Broadbent was able to show that speakers understood *it* as referring to the discourse topic ('feedpipe'), rather than to the non-discourse topic ('chain'):

- [13] The feedpipe lubricates the chain, and *it* should be adjusted to leave a gap half an inch between itself and the sprocket.

Purkiss (1978), as reported in Sanford and Garrod (1981), measured reading times of passages where the antecedent was two to four sentences back. A comparison between a pronoun and a definite description shows the pronoun as a better clue to the antecedent, but this is only in subject / topic position. When the antecedent appeared in the comment (a direct object), it was the definite description which shortened reading time. Purkiss used sentences such as the following:

- [14] Context:
 a The *engineer* [topic] repaired the television set.
 b It had been out of order for two weeks.
 (c It was only a few months old.)
 (d It was the latest model.)
 Target:
 e He / the engineer took only five minutes to repair it.
- [15] Context:
 a The mother picked up the *baby* [non-topic].
 b She had been ironing all afternoon.
 (c She would not be finished for some time.)
 (d She was very tired.)
 Target:
 e It / the baby had been crying all day.

Results showed that Distance was always a factor influencing reading time. Thus, depending on whether sentences [c] and / or [d] were also included in the context, the target sentence took longer to read. But more interestingly, topic vs. non-topic antecedents proved to behave significantly differently too. Whereas reading time for topic antecedent sentences took 11–14 seconds

Introduction

(depending on Distance), reading time for non-topic antecedent sentences took 13–17.5 seconds (depending on Distance). These findings corroborate our assumption that topics have a privileged standing with respect to ease of accessing. Non-topics, on the other hand, which are not as available, are more drastically affected by the Distance, and therefore require a Low Accessibility Marker for ease of comprehension. Indeed, Purkiss' findings show that while pronouns were better retrievers for topics, definite descriptions were faster in retrieving non-topics, especially when these were two or three sentences away.

Levy (1982) in fact claims that the number of anaphoric references made to an entity helps addressees establish what the discourse topic is. Indeed, the discourse topic is the one most often pronominalized. Examining Redeker's (1985) findings from a narration experiment using two films shows that different patterns of reference occur even for different-order topics. Thus, whereas Global topics were referred to by pronouns in 61 per cent of the cases, local topics were referred to by a pronoun only in 47.7 per cent of the cases. In other words, local topics, the less salient type, were more often accessed using Low Accessibility Markers. Along the same lines, Anderson *et al.* (1983), comparing reading times, found a gap in reference resolutions involving main vs. secondary characters. Main characters were accessed significantly faster. Norman *et al.* (1975) present findings that identifying the antecedent according to the following rules produced a 90 per cent success:

- [16] a Search topic (= appeared in pronoun form already, or else served as the subject of the previous sentence).
- b Check number and gender agreement.
- c If no agreement is found, go back, and repeat [a] again.

Note that the following example, which violates the above, and requires reinterpretation, indeed delays processing:

- [17] The playwright Yehoshua Sobul [topic] learnt from conversations which he held with *the East-German Jewish writer Stephan Heim*, that *his* book . . .
(*Haaretz*, 14 May 1985, translated from Hebrew)

The italicized *his*, it turns out, refers to Heim, not to Sobul, even though Sobul is the better candidate for being the discourse topic, as introduced by the first sentence of the paragraph. Native speakers I have consulted take longer to determine the correct antecedent of this pronoun. The complete paragraph has

to be read before Heim can be established as the referent.

Saliency, however, is crucial for non-topics as well. The following experiment performed by Anderson (as quoted in Sanford and Garrod 1981), though unrelated to anaphoric possibilities, clearly shows that any prominence of a potential antecedent raises its chances of being referred to later. Subjects were asked to continue the following context, which came in two versions with regard to the description of the non-topic 'conductor':

[18] The Bus Journey

Mrs Grey was travelling by bus.

A (teenage) conductor collected the fares.

The bus jolted and rattled as it went.

After two hours joints still ached.

Of course, the overwhelming majority of subjects chose the current topic, 'Mrs Grey' to be the next topic. What is crucial to our point at present, however, is that of those who chose 'the conductor' to be the next topic there were more subjects who received the more elaborate description of the conductor as context. Potential topicality is obviously a graded concept further distinguishing among various candidates, a point argued forcefully by Givón (1983a).

Enc (1983) discusses Japanese and Turkish, which do not use regular pronouns in textual back references. She argues that in these languages there is a contrast between \emptyset pronouns and demonstratives used as anaphors. The same correlation we have mentioned repeats itself. \emptyset s (High Accessibility Markers) are used for continuing discourse topics. Intermediate Accessibility Markers (demonstratives) are used when a discourse topic is changed, i.e. when it is not the most accessible entity. Isard (1975) presents the following example, demonstrating the difference in the degree of salience of the antecedent of *it* (a High Accessibility Marker) and *that* (an Intermediate Accessibility Marker):

[19] a First square 19 and then cube *it* (*it* = 19 or 19²).

b First square 19 and then cube *that* (*that* = 19² only).

That, unlike *it*, refers to the non-topic (19²). Linde (1979) also found a very high correlation between topics (which she calls items in focus) and references by *it* on the one hand, and items outside the current discourse topic (focus) and references by *that* on the other hand.

However, *ad hoc* seemingly Low Accessibility entities, even

Introduction

ones not previously mentioned at all, may be assumed to be highly accessible to the addressee nonetheless (see again [5a] above):

- [20] (Mother to father of a newly-born baby):
She needs new diapers (*she* = their baby).

Other factors affecting the state of working memory, crucial for High Accessibility Markers, are change of scenery or frame (see Sanford and Garrod 1981), a considerable passage of time within the discourse world, as well as personal psychological factors, such as the amount or degree of information repression. Anderson (no reference given) as quoted in Sanford and Garrod (1981:147), compared reading times of sentences which contained an anaphor whose antecedent was within or without the same frame as the anaphor. For example:

- [21] Context

The Birthday Party

- a *The children* were all enjoying the party.
- b There was *an entertainer* to amuse them.
- c No expense was spared to make the party a success.
- d One / five hour(s) later energies flagged [time change].

Target:

- ei Organizing the games had exhausted *him* [= frame-dependent entity].
- ii Playing the games had exhausted *them* [= discourse topic].

Results showed that whereas the reading times of topic antecedent sentences were not affected by the frame / script boundary, sentences where the anaphors were related to antecedents outside their frame took longer if the relevant entities were frame-dependent. It seems that the Accessibility rate of such entities sharply decreases once a change in frame is indicated. Another, even more intriguing, case of degree of availability in working memory is argued by Mackay and Fulkerson (1979). They devised experiments showing that in the rare cases where subjects related an anaphoric generic *he* to females (this happened only in 13 per cent of the sample sentences), it took them a considerably longer time to do so (36.4 per cent more).¹⁴

Li and Thompson (1979), discussing the distribution of zero anaphora vs. pronouns in Chinese, suggest another factor. Their findings show that whereas unmarked anaphora in Chinese is realized by a \emptyset (an extremely High Accessibility Marker), a pronoun (a somewhat lower Accessibility Marker) is preferred

when the anaphoric NP occurs in a clause which is relatively independent from the preceding text. Thus, sentences prefaced by a semantic connective, especially one of contrast, more often induce the choice of a pronoun over Ø. They give the following as an example:

- [22] a This Wang-Mian was gifted.
 b Ø (= he) was not more than twenty years of age.
 c Ø (= he) had already mastered everything in astronomy, geography, and classics.
 d *However, he* had a different personality.
 e Not only did Ø (= he) not seek officialdom . . .

Fox (1987) discusses English patterns of anaphora in non-narrative natural conversations and in written expository prose. Generally put, her claim is that 'by using a pronoun the speaker displays an understanding that the preceding sequence has not been closed down' (p.18). If a speaker assesses that the proposition containing the antecedent is closed, she uses a full NP. Thus, while Li and Thompson consider the degree of conjoinability as predicting the plausibility of zero / pronoun occurrences in Chinese, Fox makes much the same point about pronoun / full NP distribution in English.

The specific markers, however, need not concern us here. The important point is that the nature of the connection between the clause containing the anaphor and the clause containing its antecedent plays a role in the speaker's assessment of the degree of Accessibility of an entity. Indeed, Posner (1980:195-6) contrasts the following English sentences, suggesting that 'the strength of the successivity suggestion' decreases from [a] to [b]. Note that the only difference between them is that [a] employs a pronoun, while [b] employs a proper name:¹⁵

- [23] a If Annie has married and if *she* has had a baby, grandfather will be happy.
 b If Annie has married and if *Annie* has had a baby, grandfather will be happy.

Presumably, such clause connectivity / independence functions quite like paragraph segmentations. Separateness is a cue for the potential introduction of a New frame, hence an appropriate point for releasing material from working memory. In fact, Zmira Heizner (p.c.) found that virtually all transfers from pronouns to definite descriptions or proper names in a few literary Hebrew texts she examined, were performed either at formally marked New segments, i.e. paragraph boundaries, or

Introduction

else, at what she termed 'pragmatic paragraphs', which she defined taking into account factors such as changes in point of view or consciousness, a considerable change of time, etc.

Another criterion determining the Accessibility of a particular antecedent is Competition, namely the relative Saliency of an entity when compared with other potential antecedents. Clancy's (1980) findings for Japanese referential choice can establish this point, while at the same time corroborate our previous claims from another language. Clancy studied the reference forms chosen for humans in twenty English and twenty Japanese narratives of the Pear Stories (see Chafe 1980), and claims that 'the overwhelming finding is that the distribution of inexplicit reference forms [High Accessibility Markers] are basically the same for both languages' (p.140). Clancy's findings will be discussed in some detail in Chapter 4. What is relevant at present is that when the number of intervening referents were counted, both languages tended to behave similarly. When there are no intervening referents, High Accessibility Markers predominate overwhelmingly. With one intervening referent, full NPs are slightly more popular, and after that they predominate, so that after five intervening referents, no High Accessibility Markers can be found.

Both in English and in Japanese, subjects tended to change to Low Accessibility Markers at episode boundaries and at points where there was a switch in grammatical subject (probably the topic as well). The same goes for change of discourse/real worlds, points of view, and digressions. High Accessibility Markers were reserved for central characters and/or characters the speaker empathized with. Thus, there was only one female in the Pear Story. Ambiguity of reference was therefore no problem in this case. Still, she was always referred to as *the girl*, rather than *she*, since she was a secondary character. Similar findings are reported in Clancy (1980) for various African languages (see also Gleason 1968; Ennulat 1978; and Perrin 1978). These findings corroborate suggestions by Marslen-Wilson *et al.* (1982) regarding the importance of narrative boundaries, such as episode, event, etc., in determining the choice of referring expressions.

To sum up, it seems that at least the following factors contribute to the assumed Accessibility status of an antecedent:

- [24] a Distance: The distance between the antecedent and the anaphor (relevant to subsequent mentions only).
- b Competition: The number of competitors on the role of antecedent.

- c Saliency: The antecedent being a salient referent, mainly whether it is a topic or a non-topic.
- d Unity: The antecedent being within vs. without the same frame/world/point of view/segment or paragraph as the anaphor.

In other words, two types of considerations determine the degree of Accessibility of a particular antecedent with respect to a particular anaphor. First, certain antecedents are inherently more salient to begin with (criteria [b] and [c] above), since they are more likely to be in a highly activated state in memory. Second, the nature of the relationship between the antecedent and the anaphor is also crucial. Being physically close [a] or coherently more connected [d] to the Accessibility Marker in question raises the chances of the memory unit corresponding to the antecedent to still be activated when the anaphor is reached. But [24a–d] above are not meant as a rigid definition for the psychological notion of Accessibility. They are factors which have been found operative in reference establishment, and I suggest that it is precisely because they all contribute towards determining the Accessibility of mental entities that they crucially dictate referential choices.

Part I will be dedicated to developing the Accessibility hypothesis with regard to discourse references. It will be suggested that the three-way distinction in degree of Accessibility as outlined above in fact represents only a simplified picture of actual referential options. The first three chapters of Part I will each be devoted to a different degree of Accessibility (Low, Intermediate, High), where more distinctions in marking degrees of Accessibility will be argued for. Chapter 4 will outline the general (and universal) proposal concerning accessing of NP antecedents in discourse. I will argue that all referring expressions in all languages are arranged on a scale of Accessibility. Although actual Accessibility marking systems are to some extent language-specific, for the most part they are all based on a principled connection between marker form and degree of Accessibility. The more informative, rigid (unambiguous), and unattenuated the marker, the lower the Accessibility it is specialized for, and vice versa. Part II is an attempt to show that even grammatically controlled NP linkings (sentence anaphora, zero subjects, etc.) are sensitive (also) to Accessibility considerations. Pro, for example, it will be claimed, is actually a cover-term for a variety of (extremely high) Accessibility Markers. The different distributional patterns characteristic of these so-called

Introduction

zero subjects will be shown to follow from the degree of Accessibility associated with each particular form. Last, Part III will outline a framework for a more general account for reference resolutions. The claim will be that it is Relevance (or else an alternative discourse theory) which actually controls NP accessing. Accessibility theory is but an efficient tool for the more general pragmatic theory which is responsible for accessing NP antecedents.

Part I

Discourse references

We have argued in the Introduction that context retrievals are in general sensitive to degrees of Accessibility of mental representations, rather than to the sources which introduce or justify the entertainment of these entities. Part I will provide a more detailed analysis of various referring expressions, which, it will be claimed, mark different degrees of Accessibility. We begin with Low Accessibility Markers (Chapter 1), to be followed by Intermediate Accessibility Markers (Chapter 2), and High Accessibility Markers (Chapter 3). However, the general principle argued for is that all these markers, taken together, form one continuous scale of Accessibility marking (Chapter 4). In other words, degree of Accessibility is not to be defined or measured independently for each marker. Rather, Accessibility Markers function relative to each other. Thus, each language is to some extent unique as to how it distributes the various markers along the Accessibility scale. The question of the universality of Accessibility marking will be addressed in section 4.2, suggesting predictable, as well as idiosyncratic, features of Accessibility marking.

In order to argue that specific linguistic forms mark certain degrees of Accessibility, it is in principle necessary to prove that the markers are sensitive to each of the four factors identified in the Introduction as affecting Accessibility (Distance, Competition, Saliency, and Unity). However, since on the one hand, some of the factors are hard to quantify over, and moreover, since different counts tend to reveal similar patterns on the whole (see Clancy 1980 and the various studies in Givon 1983a, to be discussed below), I will not argue the degree of Accessibility of the markers below using each of the factors. I will use the Distance criterion for all of them. For High Accessibility Markers I will mainly use Saliency (Topicality) in addition. For Low Accessibility Markers I will also use the Unity criterion.

This page intentionally left blank

Low Accessibility referring expressions

Low Accessibility Markers are those markers commonly defined as accessing material from Encyclopaedic Knowledge. They are also associated with existential (and uniqueness) presuppositions, but we postpone an account of the existential assumption till Part III, where contextual factors involved in reference determination are discussed. This chapter will argue that even within this category of Low Accessibility Markers, distinctions as to degree of Accessibility can be discerned. As we shall see, whereas definite descriptions (section 1.1) and proper names (1.2) do pattern similarly in discourse in that both are used to retrieve relatively inaccessible antecedents, they too can be distinguished as to the degree of Accessibility they mark. Moreover, different name types also signal varying degrees of Accessibility. At the end of this chapter (1.3) we shall therefore compare the Accessibility rate among Low Accessibility Markers.

In addition to Distance, I will mainly use as a criterion for defining the Accessibility rate of a Low Accessibility Marker its popularity as an initial referring expression. The logic behind this is as follows: antecedents may be located in the previous discourse, i.e. within the same mode, or else they may require the temporary abandoning of the current mode, accessing material from text-external sources. Because of the break, antecedents which are extra-linguistic should be less accessible, other things being equal. Hence, markers typically used to retrieve such entities must be lower Accessibility Markers. In other words, I am suggesting that the 'geographic' division of context is but one manifestation of the factor I have termed Unity. And this is a factor easily identified and measured. In fact, it is as important in Low Accessibility marking as Antecedent Saliency is in High Accessibility marking.

1.1 Definite descriptions

That definite descriptions are Low Accessibility Markers has already become manifest from the Distance findings presented in the Introduction (0.41: Table 0.1). There it was found that definite descriptions hardly ever refer to antecedents within the same sentence (2.8 per cent). They mostly refer to antecedents mentioned further away in the same paragraph (45.8 per cent), and even across the paragraph unit (37.3 per cent). This pattern of distribution, it was shown, was characteristic of definite descriptions, as opposed to both demonstratives and pronouns. The findings are hardly surprising. Unlike pronouns (and, to a lesser extent, demonstratives), definite descriptions can be extremely rich in information (e.g. *The first woman selected to be on the team of an American spaceship*). Even when the expressions are not that rich, they contain at least some clue as to the identity of the referent, thus constraining the number of potential candidates competing over the role of intended antecedent (cf. *the teacher, the child*, vs. *she, that*, for example). No doubt definite descriptions vary as to the degree of Accessibility they represent, depending on the amount of information they provide. We should note that the amount of guidance the addressee is supplied with stands in inverse relation to the degree of Accessibility. The more help there is, the less accessible the speaker is assuming the entity to be for the addressee. We will later substantiate to some extent this differentiation among definite descriptions, but on the whole, for simplicity's sake, we will treat all definite descriptions as if they constituted one homogeneous type.

The claim about the role of informativeness in the interpretation of definite descriptions should not be taken to imply that all that matters in the choice and interpretation of definite descriptions is the amount of information provided. Two other crucial conditions for the appropriate use of a definite description are that the choice of description will suit the addressee, and that it should be a Relevant description, given the content of the utterance. The latter requirement will be briefly discussed in Part III. As for suiting the addressee, as Strawson (1959) says, it makes sense to rely on a good match between the content of the definite description used and the addressee's perception of the referent. Otherwise, it is hard to expect the addressee to identify it. Though this is true of unmarked cases, there are marginal examples, such as Donnellan's (1966) ('The man drinking a Martini'), where there is a discrepancy between reality and the

description chosen. These depend on the ability (and willingness) of the addressee to ignore his own reality, in favour of the speaker's, or, to be more precise, the speaker's wrong assessment of the addressee's perception of reality. On the whole, however, a speaker should tailor her description in such a way that her description of the referent will enable the addressee to indeed access the intended memory item. We will not here discuss the principles guiding the speaker in preferring one description over another, since they are obviously not linguistic in nature.

In order to test for the Unity criterion with respect to definite description usage, four different types of texts were chosen: fiction writing (one and a half short stories), various short news items, popular academic texts, and two editorial articles.¹ Each data source consists of approximately 1300 words. Since references to the Physical Environment are quite rare, and, moreover, they constitute a mode break just as do references to Encyclopaedic Knowledge, I will present the numbers for the references to Encyclopaedic Knowledge and Physical Context together, as opposed to Linguistic Context:²

Table 1.1 Context accessed by definite descriptions

<i>Type of material</i>	<i>Encyclopaedic Knowledge + Physical Context</i>	<i>Linguistic Context</i>
Editorials	56 = 43.75%	72 = 56.25%
Semi-academic	51 = 39.2%	79 = 60.8%
News items	49 = 33.6%	97 = 66.4%
Fiction	24 = 18.6%	105 = 81.4%
TOTAL	180 = 33.8%	353 = 66.2%

Obviously, the function of the definite description is sensitive to the kind of discourse. In fact, not so much to the discourse genre, as to the amount of knowledge the speaker can assume to be available to the addressee. And this depends on the discourse topic more than on the text type. Thus, though the news items seem to be different from the fiction on the one hand, and from the editorials on the other, when, in a different study (Ariel 1985a), I divided the news items into Brand-New information (a piece on a robbery, for example) and the then current and hence repetitive news (pieces on the Lebanon war), it was found that the Brand-New news items pattern together with the fiction, while the two news items on Lebanon were closer to the editorial findings. Still, the highest numbers for Encyclopaedic references

Discourse references

were obtained in those pieces whose function is not to inform at all, but rather to express opinions about facts (the editorial articles). Hence the difference.

We turn now to examine proper names. Based on parallel counts we will be able to decide on the relative Accessibility of definite descriptions vs. various types of proper names.

1.2 Proper names

The central controversy concerning proper names has been whether or not they, like definite descriptions, carry sense, i.e. a conventional meaning shared by the speakers of a certain speech community regarding those names, over and above their referential power. Their 'rigidity of designation' has on the whole been taken for granted (unless, of course, they simply failed to refer). Now, though my claim is that all referring expressions are in principle non-rigid, i.e. they are context-dependent to some extent (see examples [2–6] in section 0.21 above), it is certainly true that proper names are markedly less so than other Accessibility Markers. Thus, Donnellan's (1972), as well as Nunberg's (1979), examples, which show that 'wrong' names may be used to refer successfully, are rather exceptional and rare, and are best accounted for via Relevance theory (see Part III). This rigidity, we will see, is crucially related to their degree of Accessibility.

What is the special status of proper names *vis-à-vis* 'sense'? An answer to this question should help us compare names and definite descriptions, for which 'sense' is the main clue as to their referent. It will in fact establish that names are lower Accessibility Markers. Strawson (1959:20) states that 'A name is worthless without the backing of descriptions which can be produced on demand to explain the application'. These backing assumptions were supposed by Strawson to consist of an intersection of the most important descriptions of the entity among the relevant group of speakers. Searle (1958, 1969) suggests a looser connection between a proper name and a referent. He contrasts names with definite descriptions on the one hand, and with deictic expressions on the other. Whereas definite descriptions specify the referents' characteristics, proper names do not. But, unlike deictics, proper names are assumed to be context-independent. We use proper names to refer while avoiding the problem of agreeing with our addressee on the proper description of the referent, but we do still assume that the addressee shares with us that the referent has certain properties.

Evans (1982:69–70) takes the extreme position, which denies that proper names possess any sense: ‘. . . ordinary proper names . . . are not associated with any particular way of thinking of their referents. Full competence with such an expression would seem to be exhausted by knowing which object it is the name of . . . it is just as vital to distinguish between the thought in the mind of the speaker, or hearer for that matter, and what the speaker is saying when he utters a sentence containing a name’. Thus, an appropriate use of a proper name is actually dependent on the addressee’s ability to *recognize* the referent, rather than to *recall* a set of features,³ and this, argues Evans, constitutes a strong argument against the model of identification by description. Thus, proper names are much more conventionalized than definite descriptions. They are more conventional in the sense that the match between a name and a referent is arbitrary to a large extent, and its representing a specific referent is not dependent upon the thoughts or attitudes of the speaker or the addressee. It relies on a *social* practice which establishes that a certain referent is known by a certain name. Naming, claims Evans, produces an arbitrary distinguishing feature which considerably eases the process of referent identification.

However, Evans does not deny that upon encountering a proper name clusters of information are normally generated. But, he says, there are many deviations from such paradigm cases. Sometimes, the associated information survives the loss of the recognitional ability. In other cases, objects are identified, but they only elicit a vague sense of familiarity, while any information associated with them has by then decayed. This seems to me right intuitively, although it is perhaps difficult to think of such individual cases of memory decay. I agree with Evans that ‘it cannot be generally required for communication that speaker and hearer identify the object by reference to exactly the same descriptions. While communication depends on a certain *overlap* between the information possessed by the speaker and the information possessed by the hearer – an overlap which the referential feature must exploit if the hearer is to *know* which object is meant – a considerable difference can exist in their information . . .’ (p.334, original emphases). In Part III we will suggest that Relevance theory should govern how large such speaker–addressee gaps may be.

Indeed, I think we should take Evans’ extreme position regarding proper names, although I believe that the point about ‘reference, but no sense’ is significant to varying degrees, depending on what type of name it is (see below). The reason we

can ignore the information associated with proper names in our account is that its generation and manipulation can, and should, be accounted for by pragmatic theory directly (see Part III). In other words, I hold that the derivation of 'sense' while accessing mental entities represented by proper names is not different in any significant way from the accessing of various additional assumptions in utterance interpretation in general. This accessing is not at all special to proper names or definite NPs even. It occurs when processing indefinites as well. Just as the mention of 'a bus' triggers a whole 'world', so does the mention of a proper name. The accessing is automatic, and quite insensitive to the form of reference chosen by the speaker.

However, unlike Evans, I believe that proper names do not in fact constitute a completely homogeneous type. And the extreme position is true only for extremely 'namy' proper names. It is not true of all proper names that they are merely arbitrarily related to their referents. In fact, even the distinction between definite descriptions and proper names is not always easy to draw. Smith (1975:18) claims that 'almost every proper name ever used has begun its history as a *meaningful* proper name . . .' (emphasis added). This process, whereby proper names become opaque, is like all historical changes, gradual, and not limited to the past. Thus, many definite descriptions are constantly in the process of becoming proper names, i.e. referring expressions which direct the addressee to identify a referent not by virtue of the content of the description they contain, but rather, by an arbitrary tie established between the referent representation and the name.

We clearly have here an ongoing change, whereby the 'namier' a definite description, the more likely it is to get shortened, and to occur without a definite article (The United States → United States, The Lebanon → Lebanon). Jespersen (1949) pointed to a similar phenomenon with common nouns designated for unique referents, such as *teacher*, *mother*, *Doc*, etc. Clark (1984) is an excellent example for the gradedness between definite descriptions and proper names. Clark had subjects refer to objects, when the circumstances were such that references had to be invented 'from scratch'. However, since subjects had to keep on referring to the same objects over and over again, the amount of descriptions used to refer to an object gradually shrank. In fact, it is not easy to determine when speakers have reached a 'dubbing' decision, but referential expressions certainly became 'namier' as more time elapsed. In other words, they became shorter, less descriptive, and more arbitrary. The same 'historical' gradation is manifest in the synchronic scale of

Accessibility to be proposed in section 4.1 below. The lower the Accessibility a marker is specialized for, the more it is a 'rigid' designator.

Now, although Strawson (1959), Donnellan (1972), and Smith (1975) make valid points when they each try to minimize the differences between proper names and definite descriptions, in reality, unmarked proper names and definite descriptions differ precisely in this respect, i.e. definite descriptions mostly refer by virtue of supplying an appropriate description, whereas proper names refer by relying on an unanalysed connection between the name and the mental entity. Names, especially full names, are almost always unambiguous in reference. Definite descriptions, on the other hand, often fit more than one antecedent, though this depends to a large extent on the amount of description supplied, and on the relevant universe of referents entertained. These differences show themselves in preferences for one or the other type of referring expression in various contexts. However, a choice only exists if we can assume that the addressee is actually familiar with the name assigned to the particular referent. If we cannot, a definite description is a better, in fact the only, retriever. Note [1], where a proper name seems better, vs. [2], where a definite description seems more appropriate:

- [1] We're having a birthday party for *Dana* / ??*your daughter* next week. Don't forget.
- [2] ??*Joan Smith* / *The Tyberias chief of police* has called up an investigation of the scandal.

The Unity criterion confirms the low Accessibility of proper names. The ratio of first vs. subsequent retrievals of full proper names is 63.8 per cent vs. 36.2 per cent in favour of initial retrievals (see Table 1.2 below for precise numbers and data sources). Another difference between proper names and definite descriptions is that the former can also refer to clearly inaccessible entities too. 13.4 per cent of all proper names in a few newspaper articles (*Haaretz*, 29 March 1985), totalling 1200 words, were not familiar.⁴ But ALL of them were adjacent to some other description, the latter preceding the proper names in most cases, thus making the names part of a more complex type of referring expression (to be briefly mentioned later). However, there are languages that distinguish between familiar and unfamiliar proper names. In German and in Old Greek (see Goodwin 1968 and Krámský 1972), for example, a definite article is prefaced to the proper name when the name is familiar.

Discourse references

Languages that do not impose a grammatical distinction between familiar and unfamiliar name-bearers dictate instead that unfamiliar proper names be accompanied by some other description.⁵ Hence [3a] below is a more natural phrasing of the facts than [3b] when the referent of the name *Joan Smith* is not familiar (= inaccessible) to the addressee. The opposite is true when 'Joan Smith' is a known referent:

- [3] a Joan Smith, an IBM engineer from Tel-Aviv, was recently accused by the company of theft.
b Joan Smith was recently accused by IBM of theft.

But before we can discuss such combinations of names plus definite descriptions, we need to distinguish between three name types (at least).

Given that names, though not definite descriptions, normally require some degree of familiarity with the referent, we can move on to the next question, i.e. do all names pattern identically? We tend to attribute intimacy to first name calling, but the origin for the particular choice (of first names for intimate contexts) is, I suggest, due to the fact that first names are not as 'rigid' as full names, or even last names alone. They are not such good disambiguating tools. Hence, they must refer to relatively highly accessible entities, ones which are more accessible than those referred to by definite descriptions or full names. Indeed, the claims made on proper names in the previous paragraphs pertain more to full names than to partial ones. Now, men are hardly ever referred to by first names, at least in the Israeli papers, where I collected my data. Women are often called by their first names, but this is almost always as a second mention, i.e. when the mental entities representing them are already highly accessible due to the previous mention (but see Part III for a discussion of references to women). Indeed, the statistical data to be presented shortly as to the distribution of various names in discourse suggest that within proper names, all of them Low Accessibility Markers, full names are lowest on the Accessibility hierarchy, last names follow, and first names signal relatively high Accessibility.⁶

Note [4c] below, taken from a newspaper article on Victorian writers' marriages, which strikes the reader as a rather bizarre way of referring to a highly inaccessible discourse entity:

- [4] a Paragraph 1 ends by introducing the couples to be discussed. Among them, Charles Dickens and Catherine Hogarth.

- b Paragraphs 2–9 do not mention either Charles Dickens or Catherine Hogarth. When referring to the other couples, they are first introduced by a full name or by a last name.
- c Paragraph 10 opens with:
After *Catherine* had borne Dickens 10 children, Charles Dickens published a letter in the newspapers, beginning with the words . . .
(*Haaretz* 18 November 1983)

Of course, despite the above, very familiar or salient entities can be referred to by first name, even discourse initially (e.g. *Golda* [Meir]). This distribution is parallel to that of pronouns, which normally require a linguistic antecedent in order to possess the right degree of Accessibility, but which can sometimes, when their referents are extremely salient, appear discourse-initially, as exemplified in the Introduction (example [5] in section 0.21). The difference between such salient antecedent uses of pronouns and first names is the frequency with which it is used, and it is substantially different. Whereas entities are rarely salient enough to warrant a first retrieval by pronoun, named referents in fact got their names since they were deemed important, and hence, possess a salient and privileged status for us. Pronouns, unlike first names, are ‘bad’ retrievers. They are much more ambiguous, i.e. less rigid, than even first names. Indeed, this is what makes names lower Accessibility Markers than pronouns.

1.3 Degrees of Accessibility within Low Accessibility Markers

Although all Low Accessibility Markers refer to entities currently not highly activated, distinctions do exist as to how accessible the entity is at the particular stage of the discourse. The less accessible the entity, the more lexical information is required from the marker in order to retrieve it. Immediately accessible entities do not require so much wording for the entity to be evoked. With respect to names, this entails a distinction between full names on the one hand and partial names (first / last) on the other. However, definite descriptions and (full) proper names are not clearly comparable in such terms. Based on the nature of the tie between the referent and the referring expression used to represent it, we should expect the rigid proper names to be better retrievers in cases of lower Accessibility. But this should be corroborated by empirical data, before such a gradation can be assumed.

Discourse references

In order to establish the degree of Accessibility of definite descriptions relative to proper names, I examined their actual distribution in discourse. Two kinds of distributional facts help us establish the degree of Accessibility in this case: the ratio of intra- vs. extra-text antecedents (the Unity criterion), and the distance between the referring expression and its antecedent (the Distance criterion). Low Accessibility Markers are predicted to be able to refer outside the text, and when they retrieve intra-textually they should refer back to further away antecedents. The results of the first criterion are presented in Table 1.2, those of the second criterion in Table 1.3:

Table 1.2 Contexts referred to by definite descriptions and full proper names (see again note 1 for sources)

<i>Expression</i>	<i>Context type</i>	
	<i>Encyclopaedic Knowledge + Physical Context</i>	<i>Linguistic Context</i>
Definite descriptions	180 = 33.8%	353 = 66.2%
Full proper names	118 = 63.8%	67 = 36.2%

I checked two articles and the opening section of a short story for the following data:⁷

Table 1.3 Distribution of definite descriptions and full proper names in various textual positions

	<i>Same S</i>	<i>Next S</i>	<i>Further in same paragraph</i>	<i>Across paragraph</i>	<i>TOTAL</i>
<i>Definite descriptions</i>					
Text I	Ø	24 = 33.3%	12 = 16.6%	36 = 50%	72 = 100%
Text II	Ø	25 = 50%	20 = 40%	5 = 10%	50 = 100%
Text III	6 = 14.3%	11 = 26.2%	10 = 23.8%	15 = 35.7%	42 = 100%
TOTAL	6 = 3.6%	60 = 36.6%	42 = 25.6%	56 = 34.2%	164 = 100%
<i>Full proper names</i>					
Text I	2 = 10%	4 = 20%	8 = 40%	6 = 30%	20 = 100%
Text II	Ø	6 = 23%	4 = 15.4%	16 = 61.5%	26 = 100%
Text III	Ø	2 = 16.7%	3 = 25%	7 = 58.3%	12 = 100%
TOTAL	2 = 3.4%	12 = 20.7%	15 = 25.9%	29 = 50%	58 = 100%

The averages reveal that full names are lower Accessibility Markers than definite descriptions. Table 1.2 shows that the

percentages of intra- and extra-text references are virtually reversed for full names and definite descriptions. The former serve for Encyclopaedic (and Physical) Context retrievals much more often than the latter. Indeed, it seems intuitively clear that a first-mention definite description is marked, when context determines that a proper name could have been chosen.⁸ Such special, 'impolite', uses, according to Evans (1982:310), will be discussed in Part III. Table 1.3 shows that though both markers can and do in fact refer back to distant entities (compare with the Distance of reference of pronouns and demonstratives, as presented in Table 0.1 in section 0.41 above), more proper names refer across paragraphs, whereas more definite descriptions refer to an entity in the previous sentence.

Applying the measurement of ratio of first-retrieval to a combination of a proper name and a definite description (no matter in which order) determines that these are the lowest Accessibility Markers. Indeed, only a negligible percentage of these occur in subsequent retrievals, even if their percentage among first-retrieval Accessibility Markers is not particularly high (ranging from 9.1 per cent to 25 per cent in the three texts examined). Indeed, a special VIP introductory expression, consisting of a proper name and a certain free relative which I have identified for Hebrew (see Ariel 1983), is specifically constrained to first retrievals. The referring expression in [5] below is a typical example. As my data confirm, it could never occur as a subsequent reference to Moynihan:

- [5] *daniel petrik moynehan, mi she haya shagrir*
Daniel Patrick Moynihan, who (that) was the ambassador
arcot-habrit ba um, megale be sifro . . .
(of) the US to-the UN, reveals in his-book . . .
(*Yediot Ahronot*, 10 November 1978)

Given that the richness of the expression is crucial to its degree of Accessibility, we should expect to find differences among definite descriptions of different lengths. This is precisely what my data reveal, though I have limited the distinction among definite descriptions to those consisting of one to two content words, as opposed to those descriptions which were longer. Table 1.4 presents the results comparing the ratio of internal to external text references (see again note 1 for sources used):

Discourse references

Table 1.4 Context types retrieved by long and short definite descriptions

<i>Expression length</i>	<i>Context</i>	
	<i>Encyclopaedic Knowledge + Physical Context</i>	<i>Linguistic Context</i>
Long definite descriptions	96 = 65.3%	51 = 34.7%
Short definite descriptions	84 = 21.8%	302 = 78.2%

But now, comparing the results of long definite descriptions with full proper names (see again Table 1.2) shows them to be quite similar. This is precisely as we should expect it to be. Once a certain level Accessibility Marker is significantly enriched, it should reach a lower degree of Accessibility. The explicit details provided by the long definite descriptions make them as good retrieval devices as the rather shorter full names. If, on the other hand, we were to distinguish between unequivocally ‘namy’ names (*Joan Smith*, for example) vs. less archetypal names (*The Alliance*), full ‘namy’ proper names would, no doubt, come out marking lower Accessibility than long definite descriptions.

We did not check this hypothesis, but we did examine differences between types of names. It is quite clear that proper names themselves must be distinguished as to degree of Accessibility. First names are shortest, they are therefore more equivocal. They are normally used when the referent is not only familiar, s/he is an intimate, and hence always highly ‘accessible’.⁹ Last names are intermediate. They are less ambiguous than first names, and they do not imply intimacy. The lowest Accessibility Markers are full names, normally used to refer to long-term memory entities first retrieved (or at the beginning of a paragraph, etc.). A typical paragraph would start with a full description or a full name, often both, and then change to a last name alone (a higher Accessibility Marker), and afterwards a pronoun.¹⁰ The following are typical examples:

- [6] a i ha + maxazay, yehoshua sobul, . . .
 The playwright, Yehoshua Sobul, . . .
 ii sobul . . .
 Sobul . . .
 iii hu . . .
 He . . .
 (*Haaretz*, 14 May 1985)

- b i ha +sofer ha +yehudi ha +mizrax-germani,
 The writer the Jewish the East-German,
 stefan haym.
 Stephan Heim.
 (The East-German Jewish writer, Stephan Heim . . .)
- ii haym . . .
 Heim . . .
- iii . . . sifro . . .
 . . . his-book . . .
 (*Haaretz*, 14 May 1985)

A statistical examination of the same three texts mentioned above indicates clearly that proper names differ in degrees of Accessibility, such that full names are lowest, and first names are highest. Table 1.5 shows the percentage of each name type in initial retrieval position:

Table 1.5 Name types in initial position

<i>Full name</i>	<i>Last name</i>	<i>First name</i>	<i>TOTAL</i>
132 = 85.2%	23 = 14.8%	Ø	155 = 100%

Comparing distances between the names and their co-referring entities (i.e. when names are used in subsequent mentions) confirms the above on the whole:¹¹

Table 1.6 Names in textual positions

<i>Name type</i>	<i>Same S</i>	<i>Next S</i>	<i>Further in same paragraph</i>	<i>Across paragraph</i>	<i>TOTAL</i>
Full name	2 = 3.4%	12 = 20.7%	15 = 25.9%	29 = 50%	58 = 100%
Last name	Ø	31 = 39.2%	24 = 30.4%	24 = 30.4%	79 = 100%
First name	3 = 6.1%	21 = 42.9%	20 = 40.8%	5 = 10.2%	49 = 100%

Summing up Low Accessibility marking, the findings suggest that a combination of a proper name with some modifier represents the lowest Accessibility. More substantial evidence was presented showing that full names are lower on the Accessibility scale than definite descriptions, though the latter can themselves be distinguished as to various degrees of Accessibility, depending on the amount of lexical information they contain. We have also examined comparisons within proper names, the conclusion of which was that full names are lower Accessibility Markers, last

Discourse references

names are somewhat higher, and first names are higher yet. We have not yet made explicit the relative degree of Accessibility of definite descriptions vs. the two types of partial names, but we have the relevant data above. Thus, if we compare the findings on definite descriptions' Distance from their antecedents, presented in Table 1.3, with the parallel findings for first and last names in Table 1.6, it is clear that definite descriptions are lower Accessibility Markers than first names. However, though they seem to rate quite similarly with last names, I believe the latter should be established as higher Accessibility Markers, because the entities they retrieve tend to be inherently more salient (topics or famous people). Hence, the fact that they can refer to similar Distances as definite descriptions indicates that actually they mark a higher degree of Accessibility. In other words, this would predict that Given non-topic, non-VIP antecedents, last names should be more limited in the Distance they can retrieve from.

Intermediate Accessibility referring expressions

Intermediate Accessibility Markers are those markers usually termed deictic or indexicals. Their interpretation, it is claimed, is dependent on reference to the speech situation. The traditional categories of indexical expressions are presentatives (*behold*, French *voilà*), demonstrative pronouns (*this*, *that*), personal pronouns (*I*, *you*), and time and place adverbials (*here*, *there*, *now*, and *then*). However, although there is an overlap between Intermediate Accessibility Markers and indexicals, since they all seem to derive their interpretations relying on the speech situation, not all indexicals are in fact Accessibility Markers. In other words, salient entities from the physical surroundings are not necessarily assumed to be represented by accessible mental representations. They are sometimes presented as New, without taking for granted the addressee's awareness of them. Presentatives, for example, introduce New information. Demonstrative pronouns, personal pronouns, and time and place adverbials introduce accessible entities.¹ We begin with personal pronouns (section 2.1), to be followed by demonstrative pronouns (2.2), and a comparison between various Intermediate Accessibility Markers (2.3).

2.1 Personal pronouns

First- and second-person pronouns are commonly distinguished from third-person pronouns, even though they do function within the same inflectional paradigm: first- and second-person pronouns correspond to assigned roles in conversations, while third-person pronouns refer to any person, excluding the above two. This is why whereas first- and second-person pronouns can and indeed do refer exophorically, third-person pronouns are endophoric on the whole. Indeed, the distinction between the Saliency of the referents of first- and second-person pronouns as

opposed to those of third-person pronouns manifests itself in rules governing personal pronoun distribution. For instance, many languages have the option of zero pronouns. Though some can drop all pronouns, for many it is possible, or at least considerably more common, to only do away with first- and second-person pronouns. Hebrew is a typical example. In Hebrew, one commonly omits first- and second-person pronouns, but not third-person pronouns, certainly not initially. This distinction is perhaps best explained grammatically (by the presence of an Agreement element), and we will come back to it when we discuss zero subjects in Part II. However, since zero pronouns are certainly not obligatory, Accessibility theory can directly predict when they should be preferred. It turns out that speaker and hearer are such salient referents that languages that permit zero pronouns do use these pronouns occasionally, but then only when they are somewhat less accessible than usual, i.e. when they are marked for contrast and / or when the clause they occur in is not tightly related to the previous clause(s) (the Unity criterion).

The following data were collected from written versions of oral / colloquial speech.² Originally, I had chosen the data sources to be interviews and short stories told in the first person, in order to make sure that they contained a substantial number of speaker and addressee references. But it soon became clear that Hebrew first- and second-person pronoun distribution (in fact third-person pronouns as well – see below) is crucially dependent on speech style. Formal Hebrew has fewer such pronouns, while colloquial Hebrew has them more frequently. The data we have referred to reflect a mixed style, though it is certainly closer to the written convention. Out of the 204 references to first and second persons where there was a zero pronoun option available (subject position of an inflected verb basically), only 10.8 per cent contained pronouns. Most of these occur in the short stories, where the translator made an attempt to somewhat simulate colloquial speech.

Still, the pronoun occurrences are not at all arbitrarily distributed in the texts. [1] is a typical example, where a pronoun is preferred because of the contrast involved:

- [1] ani manixa she + hem xashvu she + shodedim
I guess (that) they thought (that) 'burglars'
ganvu et ha + kesef she + buba hexzik ba +
had stolen acc. the money that bubba kept in his

kasefet, aval *ani* asiti zot.

safe, but I had it.

(A. Walker (1971), translated by R. Giora)

Note the following examples, both taken from the same story (Walker, *ibid.*):

[2] a ze haya davar shel ma bexax bishvil yalda o
 It was nothing for (a) girl or
 isha le + heanes. *ani acmi* neenasti,
 (a) woman to get raped. I myself was-raped,
 kshe + Ø hayiti bat shtem-esre. ima af-paam
 when 1st-pers.-was twelve-years old. Mama never
 lo yadaa, u + meolam lo Ø siparti le
 not knew, and never not 1st-pers.-told to
 + ish.

(a) person.

(my Mama never knew, and [I] never told anybody)

b hu pashut himshix le + nasot le + alec oti la +
 He just kept trying to make me (to)
 cet ito, ve + lifamim, mi + tox hergel,
 go with-him, and sometimes, out of habit,
 ani xoshevet, Ø halaxti ito. gufi asa
 I guess, 1st-pers.-went with-him. My-body did
 ma she- + shulam she + yaase.
 what (that) was-paid that it-would-do.
 (what it was being paid to do)

ve + ima meta. ve + *ani* haragti et buba.

And Mother died. And I killed acc. Bubba.

I have italicized in both examples those environments where the grammar allows a zero pronoun option. It is clear that throughout the story the speaker is extremely salient, since she is the one telling the story, constantly referring to herself. Indeed, in three of the five cases, the translator chose the zero pronoun option. In fact, it is the pronouns that do occur which require some explanation. The occurrence of the pronoun in [2a] is due to emphasis. The more interesting case is the pronoun in [2b], which is to be motivated by the Unity criterion mentioned in the Introduction.³ Note that the last two clauses of [2a] and [2b] virtually constitute a minimal pair. In both, it is the mother who is the previous sentence topic, with the speaker not even mentioned. The reason for the explicit pronoun in [2b], but not in [2a], cannot, therefore, be attributed to Distance or Topicality effects. It is the different relation of the last clause to what

precedes it, which dictates the difference. Subjectless clauses are often so because they are subordinate syntactically, as well as pragmatically. They are thus closely related to and dependent on some more dominant clause for their interpretation. In order to reflect the independence and hence the weight of the proposition announcing the killing act, the translator preferred to insert a first-person pronoun in this case.

Findings from a natural conversation between intimates confirm the above.⁴ 82.5 per cent of the first- and second-person pronoun / zero slots of past tense verbs were actually empty. The seven pronoun occurrences (17.5 per cent) can all be accounted for in terms of Unity or contrast. The following is a typical example:

[3] Previous Words (in translation):

. . . he [Heyworth-Dunne] writes there . . . ah . . . brings all sorts of people who said things about Abbas . . . [part deleted] . . . that Nubar thought that he was this and that. [Speaker pauses, and then continues]:

az *ani* halaxti ve +katavti et ha +amud pashut.

So I went and wrote acc. the page simply.

az \emptyset katavti . . .

So [I] wrote . . .

Changing the topic from Heyworth-Dunne's writing and quoting what people said about Abbas to what the speaker did in his own work calls for the insertion of the first-person pronoun. Not only did the speaker change the topic, he also has not referred to himself for a few sentences. Note, however, that following the first sentence of the new segment, that is once the speaker has established himself as the New topic, he immediately switches back to \emptyset first-person pronouns. First- and second-person pronouns are, then, used only when speaker or addressee are less than highly salient, even when the \emptyset option poses no problem in terms of referent identification (verbs are inflected in Hebrew). Thus, in languages where there is a zero vs. personal pronouns option, pronouns, I claim, are lower Accessibility Markers.

That first and second pronouns represent higher Accessibility than proper names or definite descriptions is difficult to prove empirically, since there are hardly any circumstances which allow a free choice among these referring expressions. A potential case in point is a telephone call, where a speaker is allowed a choice between 'it's *I/me*' and 'this is *Jane*'. The former are reserved for intimates, where the identification of the caller can be made

based on her voice. When such identification is less likely, since the specific voice does not make salient a unique referent, a proper name must be employed.

2.2 Demonstrative pronouns

Not all languages have a definite marker, but all have at least a demonstrative form (see Anderson and Keenan 1985). Chinese, Turkish, and most of the Slavic languages only have demonstratives. Hebrew, English, and French, to name a few languages, have separate markers for definiteness and demonstratives. Paradigmatic uses of demonstratives refer addressees to the Physical Context, and are accompanied by some bodily gesture or gaze, which help establish that referent (Lyons 1977; Maclaran 1980; Tanz 1980; Clark 1978),⁵ but see Clark *et al.* (1983), for the actual complexity involved in the process. Demonstratives are quite often divided into proximal and distal ones, and a language may have a system of marking quite a few degrees of proximity and distance. English *this* vs. *that*, Hebrew *ze* vs. *ha + hu*, manifest such differences. Note that the proximity factor is not limited to spatial distances. In [4] below (originally from Fillmore 1975:71) the preference for *this* or *that* depends on the tense, present perfect (closer to 'now') favouring *this*, simple past favouring *that*:

- [4] a *This* / ?*that* has been an interesting course.
b ?*This* / *that* was a brilliant lecture.

Although Intermediate Accessibility Markers can and do refer to entities from the physical surroundings, they are commonly used as anaphoric expressions. Halliday and Hasan (1976) found that in the last two chapters of *Alice in Wonderland*, which they checked, only 20 per cent of *this*, *that*, *these*, and *those* were exophoric. It seems that exophoric references are not common in general. Thavenius (1982), who examined eight natural conversations, found that only 10.7 per cent of all references were exophoric. Kurzon (1981) argues that legal texts do away with exophoric references, and *this* and *that* are only endophoric. As we shall see, however, the proximal–distal distinction mentioned above is relevant for non-indexical uses as well. This is only to be expected under an analysis of Accessibility, as opposed to that of 'geographic context'. Thus, more accessible entities are referred to by the proximal marker. Less accessible ones will be referred to by the distal ones. Note [5] (originally from Lakoff 1974:74):

Discourse references

- [5] a A: Dick says that the Republicans may have credibility problems. This / that is an understatement.
b A: Dick says that the Republicans may have credibility problems.
B: *This / that is an understatement.

As explanation for the above distribution Lakoff proposes the following: '*This* is restricted to comments on remarks that are "close to the speaker" in the sense that they are made by him' (p.74).

Fillmore (1975:71) claims that 'in a number of . . . languages – including French and German – the proximal demonstrative [is] used to mean "the latter", the distal demonstrative . . . to mean "the former"'. Lyons (1975) contrasts Latin *ille*, German *jener*, Spanish *ese*, French *celui-la*, and Turkish *o*, which are distal demonstratives, with their respective proximal analogs (Latin *hic*, German *dieser*, Spanish *este*, French *celui-ci*, and Turkish *bu*). In Turkish and Latin, for example, the pronouns *he* and *she* in [6] would be rendered by demonstratives. However, a distinction would be drawn so that the more remote entity (the one mentioned first) will be referred to by the distal demonstrative. The recent entity (the second one in this case) will be referred to by the proximal demonstrative:

- [6] John₁ and Mary₂ came into the room. He was laughing but she was crying.

Thus, English *he* would turn into Latin *ille* and Turkish *o*, meaning 'that one'. English *she* would turn into Latin *haec*, Turkish *bu*, meaning 'this one'.

Examinations of English texts show that *it* and *that* are systematically used differently, even when they are used anaphorically. Linde (1979:350) found that whereas *it* refers to entities in focus (our 'topic'), *that* mostly refers 'to accomplish reference to items out of the focus of attention'. Grosz (1981) has similar findings, thus corroborating our distinction between topics and non-topics. Schiffman (1984) also compared *it* and *that*, and found that the largest gap in popularity rate is in third to penultimate repeated references. *It* is 4.5 times more popular in such highly accessible environments. But, claims Schiffman, 'Given a context with a marked antecedent . . . the anaphor is far more likely to be the demonstrative' (p.354) (three times as much). Thus, though the division of labour between pronouns and demonstratives is not necessarily identical among languages (compare English and Turkish), relative Accessibility does play a

role in all. We turn next to discuss degrees of Accessibility within Intermediate Accessibility Markers.

2.3 Degrees of Accessibility within Intermediate Accessibility Markers

As we have already seen, Accessibility marking depends on the ease of retrieving the intended referent. High Accessibility Markers imply minimal effort, while Low Accessibility Markers imply greater efforts in recovering the antecedent from memory. Accordingly, *that* should be categorized as a lower Accessibility Marker than *this*, and so should all distal and proximal demonstratives. Note that in English, for example, *that* requires identifiability by both speaker and addressee, whereas *this* sometimes refers to objects accessible only to the speaker. This is how Fillmore (1975) explains cataphoric uses of *this*, which *that* does not share. Certainly, if speaker is being 'egocentric' she is referring to entities upmost on her mind. Hence the conventionalization of the higher Accessibility Marker *this*, rather than *that*. Claiming that *that* is lower on the Accessibility scale than *this* also fits the fact that it is *that* and not *this* in English, *ille* and not *hic* in Romance, *az* and not *ez* in Hungarian (as well as many other languages) that developed into a definite article. It is the distal demonstrative which tends to develop into a Low Accessibility Marker (more on this in section 4.1).

Since the more informative the marker the more help it is in retrieving less accessible information, we should also distinguish between *this* and *that* used as substantives on the one hand, and as adjuncts on the other (*this / that* vs. *this / that book*). In fact, once the speaker adds more information, for instance in the form of a relative clause, Intermediate Accessibility Markers turn into full-fledged Low Accessibility Markers:

[7] *That holiday we spent in Cyprus* was really something.

Now compare [7] with [8], where *the* substitutes for *that*:

[8] *The holiday we spent in Cyprus* was really something.

[7] and [8] are both acceptable, but it seems that they are used under slightly different circumstances. In [7] *we* probably refers to the speaker and her addressee, both activating a common memory (and even more so if *this* is used rather than *that*). In [8] *we* can refer to the speaker and some other person.⁶

Hebrew has more of an option using either the proximal or the distal demonstrative, when adjacent to a relative clause for low

Discourse references

Accessibility uses, although normally the distal demonstrative is hardly ever used. In fact, although the distal demonstrative (*ha + hu*) is quite marked in Hebrew, it was preferred by native speakers over the unmarked *ze*, 'this', when the context was described as 'a long-forgotten trivial episode':⁷

- [9] zoxer et ha + shoter *ha + ze/ha + hu* she + rasham
Remember acc. the policeman this/ that who wrote
lanu duax be + kikar pikadili? kama she
us (a) ticket in circus Piccadilly? How that
+ caxaknu be + histerya?
we-laughed in hysteria?
(Remember this/that policeman who gave us a ticket in
Piccadilly Circus? How we laughed hysterically?)

In other words, in Hebrew the proximal–distal distinction is carried over to cases where Intermediate Markers are enriched, so that they actually become Low Accessibility Markers, and retrieve from long-term memory. This is so despite the high markedness of the distal demonstrative. Still, English and Hebrew do have in common that when Intermediate Markers refer to entities of lower Accessibility, I believe they refer to what is dubbed 'episodic memory', rather than to 'semantic memory'. Using an Intermediate Marker (*this* or *that*) rather than a Low Accessibility Marker (*the*) in [7] above, seems to raise into consciousness 'livelier pictures' of the said holiday. *The holiday* seems to retrieve that event from the Encyclopaedic Knowledge of the addressee. Hence, the addressee may not have been part of the holiday in Cyprus. *That holiday* seems to bring to life the event 'itself', with the feelings attached to it. Such information is probably stored in 'episodic memory', arranged as a diary (referable to by a single retrieving cue), and not as in our encyclopaedia, arranged according to topics, entities being retrievable using a whole variety of cues.⁸

In sum, paradigmatic uses of Intermediate Accessibility Markers connect discourse to accessible entities representing physically present objects. However, since most references are actually made to textual antecedents, Intermediate Markers often function anaphorically. As such, they mark less accessible information than pronouns or zeros, High Accessibility Markers with which they seem to be in contrastive distribution. Empirical data on the distribution of Intermediate Accessibility Markers were presented in the Introduction (Tables 0.1, 0.2, and 0.3). The same conclusions have been reached in this chapter, when comparing first- and second-person pronouns with zero pronouns

in Hebrew, and the use of *it* vs. *that* in English. It would not make much sense to try and establish an Accessibility hierarchy between personal pronouns and demonstratives, since they are probably never interchangeable. Still, since *I* and *you* are considerably less ambiguous than *this* or *that*, they should theoretically be able to refer to less accessible entities. This, of course, is never the case, since speaker and addressee are probably always highly accessible. A more important and better substantiated distinction has been drawn between proximal and distal demonstratives, and between richer and poorer expressions. Thus, distal markers signal lower Accessibility than proximal markers, and richer expressions signal lower Accessibility than poorer expressions.

High Accessibility Markers

High Accessibility Markers are mainly those which the 'geographic' definition would claim to be text-dependent. Thus pronouns and gaps belong in this category, though, as we will see, these markers are also appropriate when referring to extra-textual information. Such cases, of course, strengthen our preference for the Accessibility theory over the 'geographic context' account, since the governing condition again turns out to be High Accessibility, rather than a specified context (Linguistic Context, in this case). Unlike lower Accessibility Markers, for which Accessibility is quite often the only grammatical condition on appropriate use, languages normally have additional grammatical constraints on High Accessibility Markers. Thus, though obeying the correct degree of Accessibility is a necessary condition for a High Accessibility Marker, it is not a sufficient one.¹ In Part II we will suggest that in fact, many of the so-called syntactic factors governing anaphora are to a significant extent a reflection of Accessibility considerations.

The original question posed by linguists with respect to pronouns, the paradigmatic High Accessibility Markers in English, concerned the conditions (whether syntactic or semantic) under which one can use a co-referring pronoun. Such a phrasing of the question in effect presupposes that full NPs are unmarked and free to occur in every environment, whereas pronouns are restricted. Bolinger (1979:290), writing on pronoun use in discourse, poses a neutral question: 'At x location, what reason might the speaker have for using a word that is leaner in semantic content rather than one that is fuller or vice versa?' I completely agree with Bolinger's phrasing of the problem. It is a central proposal of this book that at each location in the discourse the speaker has to evaluate the availability to the addressee of the material about to be referred to. The speaker

should then choose the referring expression accordingly. So-called full NPs should be preferred when retrieval is not automatic, as in first retrievals, or when some time has passed since the entity was last mentioned, and it is no longer highly activated. So-called anaphoric expressions should be used when an addressee has immediate access to the antecedent.

Such immediacy is most often due to the recent mention of the antecedent in the discourse, in fact, usually in the previous clause. References by pronouns are, moreover, the most common ones. This is only natural in the light of the fact that discourse topics are referred to by High Accessibility Markers, since they are considered highly salient. We should then expect to find many High Accessibility Markers simply because discourse topics are repeatedly referred to. But of course, not only discourse topics are thus marked. In the following example, the non-topics ('Rose' in [a], 'house rules' in [b]) are so salient that they too are accessed using pronouns:

- [1] a Bill had a new manuscript he wanted to publish. He decided to go see Rose and discuss with ?Rose/her what to do about it. Perhaps ?Rose/she could give him some good advice about it.
- b They_i have a few, for example, house rules_j that THEY_i decided on them_j, that THEY_i created them_j, and that they_j are known, . . . And that's why about THEM_j they_i are strict, even though they_i are really nice, they_i say that . . .
(Spontaneous conversation in Hebrew, in translation. Upper-case letters represent stressed word.)

Thus, it turns out that all things being equal, High Accessibility Markers should be preferred in subsequent mentions. Indeed, the data I collected, presented in the Introduction, shows that 70.1 per cent of all Accessibility Markers were High Accessibility Markers. Only 29.9 per cent were Intermediate and Low Accessibility Markers. In English this translates to use of pronouns.² About 93 per cent of referring expressions in intra-sentence position were pronouns. Within the next sentence, it goes down slightly, to 82 per cent. The rate of High Accessibility Markers significantly drops only when the antecedent is further away, but then the majority of anaphoric relations are established between entities either in the same sentence, or else between two adjacent sentences (67.3 per cent in my data). Of these, 84.6 per cent are made using High rather than

Low or Intermediate Accessibility Markers. Yule (1981) has a lower percentage (58 per cent), but his data come from a laboratory task, in which subjects had to instruct other subjects to produce a certain drawing. Very many entities were constantly being introduced, and hence the percentage of Low Accessibility Markers is higher than in my data – 27 per cent. But still, the most common Accessibility Markers for current entities were High Accessibility Markers (*it* and \emptyset). This was reversed, as in my data, for what he terms ‘displaced’ entities, i.e. less salient ones.

Thus we see that, in general, High Accessibility marking is the most common one, although its rate may vary quite significantly, depending on the nature of the discourse. Consequently, whereas Bolinger (1979) turned the question to be dealt with from ‘why pronouns?’ to ‘why full NPs and why pronouns?’, the question most of us face when speaking is mainly ‘why full NPs?’ in subsequent retrievals. In other words, pronouns (in English) and, in general, High Accessibility Markers, are the unmarked forms in discourse. We shall begin our short discussion of High Accessibility Markers with ‘Deep Anaphora’ (section 3.1), to be followed by third-person pronouns (3.2). We end with an attempt to grade degree of Accessibility within High Accessibility Markers (3.3), concentrating on the difference between stressed and unstressed pronouns. We postpone dealing with questions of what is basically sentential anaphora (zero subjects, Resumptive Pronouns, Switch-Reference markers) till Part II, though all of these markers certainly fall within the category of (Extremely) High Accessibility Markers.

3.1 ‘Deep anaphora’

Hankamer and Sag (1976) and Sag and Hankamer (1984) suggest that we distinguish between syntactically controlled anaphora, i.e. one which requires a coherent syntactic antecedent, and pragmatically controlled anaphora, which requires that the recovered entity only be semantically coherent. ‘Deep Anaphors’ are personal pronouns, sentential *it*, and null complements. ‘Surface Anaphors’ are VP Ellipsis, Sluicing, Gapping, and Stripping. This division, of course, corresponds to the ‘geographic’ division of referring expressions into those requiring a linguistic antecedent as opposed to those relying on the Physical Context. Deletions, argue Sag and Hankamer, are normally restricted to superficial syntactic identity control. They are never pragmatically controlled. They are interpreted by a copying

procedure from L(ogical) F(orm).

'Deep Anaphors', on the other hand, are interpreted by reference to 'constructs of the understander's discourse model' (1984:335). The discourse model, in turn, may contain entities evoked both by the discourse situation (i.e. the Physical Context) and by what the speakers have been saying recently (the Linguistic Context). Hence, 'Deep Anaphors' are not limited to pragmatic references only. Note the following examples ([2a] is originally Sag and Hankamer's 1984 [32]). I have italicized both the anaphors and their antecedents:

- [2] a Paul *Painted* Harry *all over* with *tincture of iodine*, and Mary did *it* to me with strawberry jam.
 b Paul *Painted* Harry *all over* with *tincture of iodine*, and Mary did *it* / \emptyset too.
 c *Paul *Painted* Harry *all over* with *tincture of iodine*, and Mary did \emptyset me with strawberry jam.

Note that the 'Deep Anaphor' (*did*) *it* can refer (in [a]) to an antecedent which is not at all a linguistic constituent, relying on the addressee's ability to construct the relevant corresponding entity in his discourse model. Though both types of expressions ('Surface' and 'Deep' Anaphors) can refer to previous linguistic units (in [b]), 'Surface Anaphors' are unacceptable when the intended referent is not a coherent LF constituent [c].

Although this claim is true to a large extent, it cannot account for all deletions. I suggest that a better formulation for Sag and Hankamer's basically correct intuition that deletions differ from explicit anaphoric expressions, is the claim that deletions require a higher degree of Accessibility than explicit anaphoric forms. Thus, zeros are only allowed when referring to a non-textual antecedent, provided that that entity is extremely salient in spite of the fact that it has not yet been represented in the discourse itself.³ This is how I propose to account not only for zero subjects in Chinese-type languages, but also for the 'horrors' Sadock (1974) found in his medicine chest.

Sadock (1974:608) presents examples such as [3], where 'in many cases the referent of the deleted object is the physical object upon which the sentence is written':

- [3] a Shake \emptyset before using.
 b \emptyset contains methanol.

Bonnie Gilden (p.c.) indicates that in her dialect one can delete under the following circumstances:

Discourse references

- [4] (In the process of buying a cassette tape recorder)
Do the batteries come with Ø?

Such deletions, however, are not restricted to reference to the physical situation, as [5] shows:

- [5] a Place egg whites in a saucepan. Beat Ø until foamy.
(Sadock's [34])
b Here's some syrup for you. Shake Ø before using.

These examples with gaps are, of course, very marginal, and only occur when the pragmatic controller is extremely salient. However, since they do occur we cannot totally agree with Hankamer and Sag (1976).⁴ Rather, we must conclude that gaps simply require extremely highly accessible antecedents. These are short-term memory items, where the entities stored are, for the most part, those recently mentioned in the discourse. They are also represented verbatim, probably. However, under some (*very restricted*) circumstances, clearly salient physical entities can control gaps, which is what we find in [4] and [5] above, and also in [7] below. Moreover, note that sometimes the Physical Context makes a referent more accessible than the Linguistic Context does. [3b], which is acceptable on the basis of a pragmatic controller, is considerably less acceptable when the controller is a linguistic entity:

- [6] (A telegram from a doctor to a distant patient)
??Recommend Cortadin for leg. Careful! Ø contains Hydrocortisone.

In fact, though English is far from being a pro drop language, zero pronouns do occur from time to time:

- [7] a Are you coming with Ø [Ø = us].
(reported by Bonnie Gilden, p.c.)
b Ø LOVE YOU.
(printed on a postcard)
c What is he doing? Ø Taking photographs.
(from Halliday and Hasan 1976:169)
d And *Stragways's* friends at his club say *he* was perfectly normal. Ø left in the middle of a rubber of bridge – Ø always did when it was getting close to his deadline. Ø said *he'd* be back in twenty minutes. Ø ordered drinks all round – again just as *he* always did – and left the club dead on six-fifteen, exactly to schedule.
(I. Fleming 1958 *Dr. No*, p.26, from Brown 1983)⁵

Thus, when the antecedents are extremely salient, even English allows zeros. This explains the 'missing NPs' discovered by Sadock (1974), as well as the examples involving zero pronouns in [7]. Such gaps are more frequent with first- and second-person pronouns – referring to more salient referents – than with third-person pronouns (note that [7c,d] have linguistic antecedents), but I am confident that if we look hard enough, \emptyset third-person pronouns can also be found in English in spontaneous speech, even if only marginally so. Brown (1983) found many examples on the pattern of [7d] in an Ian Fleming book he examined.

3.2 Third-person pronouns

In languages which do not have a free \emptyset pronoun option, pronouns are the unmarked type of referring expression. Since third-person pronouns were used to substantiate the initial claim that degrees of Accessibility constitute the relevant condition dictating choice of referring expressions, their textual distribution will not be further discussed now. The reader is again referred to Tables 0.1, 0.2, and 0.3 in the Introduction. Table 0.3 presents statistical counts which show that pronouns referring to non-discourse topics mainly retrieve either from the same sentence, or else from the one preceding it. Table 0.2 shows that references within a sentence and across one sentence are overwhelmingly performed by pronouns rather than by other referring expressions.

In the next section I will draw a distinction between stressed and unstressed pronouns, arguing that they differ as to degree of Accessibility. Here I merely wish to point out the possibility that treating even unstressed pronouns as a homogeneous phenomenon is probably unwarranted. In my spontaneous conversation data, various pronouns were sometimes garbled. They were shortened, even though all third-person pronouns in Hebrew are only one-syllable long. The examples in [8] below are typical. The attenuated pronouns in [b] and [c] refer to the discourse topics, after they have been mentioned a few times (see [a] in translation to English). After a while, though, the speaker returns to the full pronunciation [d] (capitals indicate stressed words):

- [8] a The Press . . . them . . . They also . . . They are . . .
They published . . . their house-rules . . . they talk
about . . . They have . . . THEY started . . . THEY . . .
they . . . they . . . THEY . . . THEY . . . them . . .

Discourse references

- b *h*+ *mociim* [= *hem* *mociim*] et ze kaxa . . .
 They publish acc. this like-this . . .
- c *aval hem* madgishim . . . *h*+ *notnim* [= *hem* *notnim*]
 But they emphasize . . . They give
kama . . .
 a-few . . .
- d *od* *davar she* + *hem* *asu* . . .
 Another thing that they did . . .

The speaker of [8], having made numerous references to the press people as *hem* ('they', see [a]), switches to the contracted *h(m)* in [b]. After he uses the full form following a *but*, he again shortens the pronoun in [c]. He then goes back to the full form in [d], which begins a New topic. Example [9] is even more interesting. In [a] the discourse topic ('Cameron') is referred to by a full pronoun, whereas the non-discourse topic ('Nubar') is referred to by name. In [b], the speaker reverts to another strategy, since the non-discourse topic is by now extremely salient as well, and hence requires a pronominal reference. In order to maintain the distinction between the two referents, the speaker implements the full vs. contracted forms to distinguish between the topic, referred to by *h*, as opposed to the non-topic, referred to by the full pronominal forms (*hu* 'he', *oto* 'him'):

- [9] a Cameron_i . . . HE_i . . . he_i talked to Nubar_j . . . Nubar_j
 said . . . Nubar_j was still . . .
- b *h_i* [= *hu*] *pashut diber ito* . . . *hu_j*
 He simply talked with-him . . . He
xashav kshe +hu xai adayin . . . *hu_j* *xashav* . . .
 thought when he lived still . . . He thought . . .

Though the data should be analysed using much more sophisticated machinery before we can reach any definite conclusions, examples [8] and [9] are at least suggestive. We may also note that a similar phenomenon occurs with first- and second-person pronouns in Hebrew. Givón (1983b) claims that, actually, unstressed pronouns in English should be analysed as clitics. In fact, such cliticizations of pronouns are probably responsible for the historical development of many verbal inflections in the first place (see Part II). Thus, their occurrence in fast spontaneous speech should not come as a surprise. Harnessing them to help in reference interpretations is accounted for by Accessibility theory, dictating that the more attenuated the form the higher the Accessibility attached to it (see Chapter 4 below).

In the remainder of this section I would like to merely mention a few other pronouns belonging to the category of High Accessibility Markers, though they will not figure in the discussions to follow for lack of space. Note the following (originally from Halliday and Hasan 1976:146, 150):

- [10] a This is a fine hall you have here. I've never lectured in a finer *one*.
b Here are my two white scarves. Where are *yours*?

Both of the markers in the examples above require highly salient antecedents, usually provided by the immediately preceding Linguistic Context, as it is indeed in [10]. Occasionally, when the topic under discussion is known, even though it has not yet been mentioned explicitly (or at least not recently so), such pronouns can be pragmatically controlled as in [11]:

- [11] (Two friends arrange to meet at a certain antique shop in order to buy a desk for one of them. Having greeted each other outside, they proceed to enter the shop, where they immediately face a desk. Either of them is then likely to utter [a] or [b]):
a What an awful *one*!
b I would like *yours* to be much nicer (than this one).

What is special about these pronominal forms is that they require that a specific sense be accessed, but not necessarily a specific referent. This is so in [10a,b] and in [11b]. This special processing procedure is probably responsible for the higher Accessibility requirement imposed on them. Note that the lower acceptability of the antecedent in [12], where *a desk* does not occur in the immediately preceding clause drastically reduces the appropriateness of a *one* pronoun:

- [12] A: I finally managed to buy a *desk* for my new office.
B: Good for you. What about Jane?
A: I don't know about her. She's so particular!
B: ??Maybe I ought to buy a new *one* myself.

Example [13] shows that a regular pronoun in the same environment is natural enough. Not so the possessive pronoun. Just as a full reference (*a new desk*) would be more appropriate in [12], so it would improve [13] if we substituted *mine* with *my / the manager*:

Discourse references

- [13] A: I finally managed to get hold of the manager and ask her for a raise.
B: What about John?
A: I don't know about him. He's not that interested.
B: Do you think I ought to try to talk to *her* / ??*mine* too?

Another type of pronominal reference we should mention is restricted to textual references, and is usually reserved exclusively for written registers. Thus, English *the former*, *the latter*, *the above mentioned*, etc. are reminiscent of the Latin and Turkish 'this' / 'that' distinction, employed to mark previously mentioned entities as to their Accessibility. Note that while *the former* and *the latter* refer to very recent entities, *the above mentioned* marks antecedents at some distance. Hebrew *hanal* (acronym for 'the above mentioned'), for example, has been extended beyond written discourse, and is used orally as well. It was even found to be used pragmatically, i.e. as a 'Deep Anaphor':

- [14] Notice on a Xerox Machine:
na lo le + hishtamesh bli reshut.
Please (do) not (to) use without permission.
ha + nal rexush prati.
The- above-(mentioned) (is) property private.
(Please do not use without permission. The above-mentioned is private property.)

The pronouns mentioned in examples [10–14] are quite marginal, and hence were not discussed in any detail. However, they are interesting in that they exemplify yet another degree of Accessibility distinction. Though they can refer across sentences, they all require antecedents which are more accessible to the addressee than those antecedents referred to by regular pronouns. In Part II we will analyse those anaphors which require antecedents of even higher Accessibility, which are said to be limited to sentence scope. We end the section on High Accessibility Markers with a comparison between stressed and unstressed pronouns. The latter, I will claim, mark higher Accessibility.

3.3 Degrees of Accessibility within High Accessibility Markers

Translating Accessibility Markers from one language to another is not too difficult when Low Accessibility Markers are concerned. If the semantic (and syntactic) properties of the marker are identical, most probably so will be the degree of

Accessibility. Of course, some languages simply do not have the corresponding forms (definiteness, for example), but if they do, they will be 'presuppositional' in all cases (see Annamalai and Levinson, as quoted in Levinson 1983). Intermediate Markers are a somewhat different case. Some languages make many more distinctions than others as to the relative proximity of the object and/or to the source of perception, etc. (see Anderson and Keenan 1985). High Accessibility Markers are the hardest to correlate cross-linguistically. Even when literal translations exist, they are often differently spaced on the Accessibility scale. However, whereas every good dictionary will (try to) explain the differences among Intermediate Accessibility Markers, probably no dictionary tackles the question of differences among High Accessibility Markers. We will exemplify this in section 4.2 below, taking as an example the difference between English and Japanese pronouns, as well as in Part II. Here we limit ourselves to English, in fact to one specific distinction – the difference between stressed and unstressed pronouns.

Most pronouns are unstressed. In fact, the third-person pronouns I have referred to so far are all unstressed. But note the following (capitals indicate a stressed word):

- [15] a Jane_i kissed Mary_j, and then SHE_j kissed Harry.
b Jane_i kissed Mary_j, and then Harry kissed HER_i.

If we compare [15] with [16], where the pronouns are unstressed, we get a different co-reference pattern. Note:

- [16] a Jane_i kissed Mary_j, and then she_i kissed Harry.
b Jane_i kissed Mary_j, and then Harry kissed her_j.

Schmerling (1976) explains this difference by pointing to the different syntactic status of the pronoun and its antecedent in the stressed case. Whereas in [16] the pronouns and the antecedents are of the same category (subject in [a], object in [b]), in [15] the antecedent and the pronoun are of different syntactic categories. Bardovi-Harlig (1983) modifies this account, claiming that when the semantic (rather than syntactic) roles change, the pronouns are stressed:

- [17] John_i hit Bill_j, and then HE_i was hit by Ira.

In [17], *John* and *HE* are both subjects, but *HE* is still stressed. Bardovi-Harlig explains it by pointing out that whereas *John* is an agent, *HE* is a patient. Since stressed items normally convey New information, she concludes that although stressed pronouns

refer to contextually Given entities, they are 'new in addition to given' (p.20).

In fact, we can capture the above findings in one generalization (see Stenning 1978; Solan 1983). Stressed pronouns refer to marked antecedents, i.e. those not automatically accessed under the circumstances. In other words, stressed pronouns refer to referents of lower Accessibility. They are lower Accessibility Markers. I suggest that lower Accessibility is marked by stress, usually reserved for focus marking, because both have in common the indication that the referent intended is not the one to be expected. In 'truly' contrastive contexts, the set of candidates for the role of intended referent is rather large, and the candidate actually picked has to compete with quite a few other candidates. In this sense it is unexpected and unpredictable. In the cases above, the intended referent is only chosen out of two candidates, hence the marked difference in the effect of stressing for contrast and stressing for an Accessibility lowering.⁶ But still, in [15] and [16] it is the less likely, more marked referent which is picked.

An explanation in terms of markedness can account for other interpretations guided by stress, besides the one undermining the parallel structure strategy. Note that in [18a] General Knowledge (or Relevance, to be argued for in Part III) and not the parallel function strategy determines unmarked co-reference relations. This is reversed once the pronoun is stressed, as in [18b]:

- [18] a John_i criticized Bill_j because he_j talks too much.
b John_i criticized Bill_j because HE_i talks too much.

The same goes for examples such as [19], where [a] does not have a co-referential reading, but [b] does:

- [19] a *John_i bought a book for him_i to read.
b John_i bought a book for HIM_i to read.

Chomsky (1981) and Reinhart (1983b, 1986) suggest ways to account for why it is that [19a] lacks a co-referential reading, quite compatible with Accessibility theory, but we will ignore this question for the time being (see Part II). What is crucial about [19] is that in the [b] case co-reference is allowed (as is indeed any other reference assignment), provided the antecedent is not the one most immediately thought of. This is due to the use of a stressed pronoun, which signals a preference for a marked antecedent.

Finally, that stressed pronouns are marked / lower Accessibility Markers is supported by two kinds of psycholinguistic findings.

The first is that sentences containing stressed pronouns are acquired later. Maratsos (1973) found that children aged 3–5 did considerably better at understanding sentences with unstressed pronouns than sentences with stressed pronouns (Chomsky (1971) found that children aged 6–10 demonstrated complete mastery of stressed pronouns). The other piece of evidence comes from measuring processing times. Dahl and Gundel (1981) found that sentences containing stressed pronouns took subjects 10.6 per cent longer to process. Similar findings are reported by Terken and Nootboom (1988:158), who conclude that ‘when hearing a deaccented expression, he [the addressee] tries to map it only to the set of activated discourse entities. Because this set is very restricted, the intended referent can be identified quickly, and comprehension will be facilitated’. That (de)accentuation by itself is not a facilitative device is supported by their findings which demonstrate that while highly accessible elements are better comprehended when unstressed, less accessible elements are better comprehended when stressed.⁷

However, there is another class of stressed pronouns. When a pronoun is stressed and accompanied by some paralinguistic feature – a pointing gesture of some sort – the pronoun refers deictically (see Lyons 1977; Bardovi-Harlig 1983; and others). It can, then, be considered a full-fledged Intermediate Accessibility Marker (although I do not in fact think that too much significance should be attached to the three-way division of Accessibility). Though unstressed third-person pronouns can refer deictically (in principle, any marker can refer to any context, under Accessibility theory), such references are limited to cases where the referent is extremely salient. Note the following, which are only appropriate under the restrictive circumstances specified in the examples ([20b] is originally Lyons’ 1977 [12], p.672):

- [20] a (In the middle of a meeting, someone suddenly gets up and leaves):
Did *she* have to leave, or what?
- b (Uttered to a friend whose wife has recently passed away):
I was terribly upset to hear the news: I only saw *her* last week.

But [21] below should normally be accompanied by a nod in order to be acceptable, though this obviously depends on the Saliency of the referent to a large extent:

- [21] Who’s HE?

Discourse references

Summing up, the various pronouns do not mark a single rate of Accessibility. Stressed pronouns plus a paralinguistic gesture are relatively Low Accessibility Markers. Next come stressed pronouns, pointing to a non-automatic reference assignment. Following the latter in degree of Accessibility is the unmarked (English and Hebrew) High Accessibility Marker, the full unstressed pronoun. Other pronominal forms briefly mentioned above (possessive pronouns, etc.) probably mark a higher Accessibility rate, and cliticized pronouns are at the other end, very close, in fact, to cases of zero subjects. These will be considered in Part II, where we discuss grammatical anaphora, i.e. those referring expressions marking extremely high Accessibility.

The Accessibility scale

4.1 Constructing the Accessibility scale

The conventional pragmatic definition for the classification of referring expressions (as well as other context-retrievers) is by reference to certain contexts, believed to be the sources from which entities are evoked when referred to. I have claimed that, on the whole, this approach should be rejected in favour of Accessibility theory, arguing that, in fact, the choice of a referring expression is dependent on the Accessibility status the mental representation of the referent is assumed to have for the addressee at the current stage of the discourse. Many examples were marshalled in the Introduction, as well as in the preceding chapters, showing that virtually any marker can retrieve from any context, provided a speaker is sensitive to the degree of Accessibility involved. However, as argued in the Introduction, we must not conclude that the conventional wisdom concerning context retrievals is baseless or accidental, nor that it lacks any explanatory power. In effect, the classification into three context-types, and hence into three types of Accessibility Markers (High, Intermediate, and Low), is an adequate description of *unmarked* usage in *initial* retrievals. Thus, when employed to retrieve entities (rather than to introduce them) for the first time, markers can be divided as to unmarked context-types. The various names and definite descriptions, for example, retrieve entities stored in our Encyclopaedic Knowledge, deictics and demonstrative pronouns retrieve entities originating from the physical surroundings, while pronouns and zeros retrieve entities arrived at via the Linguistic Context.

This is represented by Table 4.1, where I have tried to map various Accessibility Markers as to the *initial unmarked* context they evoke. The vertical line indicates memory storage type, which in the case of unmarked initial references, corresponds to

Discourse references

the context-type. The importance of the context-type initially responsible for the availability of the referent will be shown to be quite crucial for the pragmatic interpretation of such expressions. It plays a role in Relevance assessment, and in the processing of the potential 'presuppositions' attached to some but not all of these expressions (see Part III). The horizontal line indicates the degree of Accessibility marked by the specific marker, for even those markers specialized for the same context differ as to the Accessibility they point to:

Table 4.1 Initial Accessibility marking

		Accessibility					
		Low					High
M E M O R Y ↑ ↓	Long-term	<i>KC:</i> Joan Smith the president	Joan Smith	The president	Smith	Joan	
	Middle-term	<i>PC:</i> This/that hat we bought last year.	That hat	This hat	I/You/That	This	
	Short-term	<i>LC:</i> SHE	she	Hers	The former/ latter	Herself	∅

KC = General Knowledge Context, PC = Physical Context, LC = Linguistic Context

Table 4.1 captures the fact that unmarked initial retrievals are sensitive not only to the context-type (the three layers placed one on top of the other), but also to the Accessibility of the referent, in comparison with other referents originating from the very same source. The order in which they appear in Table 4.1 is based on the conclusions reached in the previous sections. The two arrows in Table 4.1 indicate that I could not decide on the unmarked position on the chart of the said markers. Had we made reference to paralinguistic gestures in Table 4.1, the issue of the status of stressed pronouns would have been immediately settled. Stressed pronouns accompanied by some bodily gesture clearly belong in the Intermediate block. Those which are not belong in the lower block, since they indicate a marked choice of a (usually) linguistic antecedent. The status of modified demonstrative expressions is somewhat different. The richer the expression the more likely it can retrieve from Encyclopaedic Knowledge, but I should not like to even try to pin-point where precisely the borderline crosses, especially since the generalizations as formulated in Table 4.1 only reveal a partial picture – that of unmarked initial retrievals.

We now move on to incorporating initial and subsequent referential acts together under one generalization, i.e. a generalization about degree of Accessibility, disregarding where the material originated from, as well as whether the retrieval is initial or non-initial. This unification can be made, since both context and Accessibility are each consistently related to specific memory statuses. Once the connection between context-types and degrees of Accessibility is recognized (see again the Introduction), we can then account for why certain forms seem so tightly bound to certain contexts on the one hand (namely, in initial retrievals), while, at the same time, they seem oblivious to context-type on other occasions (namely, in subsequent retrievals). We should note, however, that even when the context factor in expression choice is neutralized, it is Accessibility which explains why the very same gradation of marking is maintained. In other words, if a marker *x* is to the left, say, of a marker *y* in a given context range (as depicted in Table 4.1 above), then under those circumstances when the two are used to retrieve from a 'marked' context, they will maintain the gap in the degree of Accessibility they point to, so that *x* will signal lower Accessibility than *y* under such circumstances as well.

Hence, for example, when names or definite descriptions (unmarked initial context = General Knowledge) retrieve linguistic entities, the latter must not be too available, or else a pronoun would have been employed. The antecedent in such cases is either rather distant or else there are a few competing candidates, etc. (in accordance with the factors affecting Accessibility, as proposed in the Introduction). However, it is not only the relative degree of Accessibility distinguishing between names and definite descriptions on the one hand, and pronouns on the other, which is maintained because of the different unmarked contexts they are each associated with. The relative Accessibility between members of the same unmarked context is also maintained, so that the distribution of names vs. definite descriptions, for example, should reflect the same relative difference when they retrieve from the marked context, as when they retrieve from their unmarked context. This is precisely what we showed in section 1.1 above. The same goes for the more marked and less frequent cases, where a marker of a 'lower' context (in terms of Table 4.1) is used to retrieve (initially) from 'higher' contexts. For example, both stressed and unstressed pronouns can retrieve extra-textually initially, when the referent is highly accessible. This is so only under condition that due to the extreme Accessibility of the referent, a lower

Accessibility Marker (e.g. *that woman, Joan (Smith)*) is not suitable. But the relative degree of Accessibility distinguishing between the two pronoun types when they retrieve textually remains when they refer outside the text, thus dictating that referents accessed by unstressed pronouns be more salient than those referred to by stressed pronouns.

The general claims made in the last paragraphs above have been made in greater detail in the previous sections. For the most part, they were also backed up with empirical data. Since I have concluded each section with the relative Accessibility signalled by the markers of each of the three major categories (High, Intermediate, and Low Accessibility Markers), all that remains to be done is to combine the conclusions reached separately for each marker into one continuous scale. The scale below shows the three-way division of Accessibility, as in Table 4.1, to be quite unnecessary. It also makes no reference whatsoever to markedness. Indeed, the marked/unmarked distinctions made above actually pertain to states in the world, rather than to linguistic patterns. In other words, it is common (therefore unmarked) that entities from our Encyclopaedic Knowledge are relatively inaccessible. It is therefore common (= unmarked) to refer to them by Low Accessibility Markers. On the other hand, it is quite rare (= marked) that such entities are highly accessible. Hence, initial retrievals using High Accessibility Markers seem marked.

But the Accessibility marking system need not take into consideration such factors, for, linguistically speaking, there are no marked vs. unmarked rules or strategies for the use of referring expressions. There are only appropriate vs. inappropriate uses, i.e. uses complying with Accessibility theory, namely relying on Accessibility distinctions and appropriately marking them, as opposed to ignoring such conventions, as children are often blamed for doing (see the examples quoted by Piaget 1924:103; and by Flavell *et al.*, as cited in Brown 1965:342). Note that the scale in [1] is continuous, without any divisions into three sub-categories of markers. This reflects the fact that gaps separating between same- vs. different-context retrievers are not necessarily different from those distinguishing between Accessibility Markers which share an initial unmarked context:

[1] Accessibility Marking Scale

	↑	Low Accessibility
a	↑	Full name + modifier
b	↑	Full ('namy') name
c	↑	Long definite description
d	↑	Short definite description
e	↑	Last name
f	↑	First name
g	↑	Distal demonstrative + modifier
h	↑	Proximal demonstrative + modifier
i	↑	Distal demonstrative (+ NP)
j	↑	Proximal demonstrative (+ NP)
k	↑	Stressed pronoun + gesture
l	↑	Stressed pronoun
m	↑	Unstressed pronoun
n	↑	Cliticized pronoun
o	↑	Extremely High Accessibility Markers (gaps, including pro, PRO and <i>wh</i> traces, reflexives, and Agreement – some of which will be discussed in Part II).
	↓	High Accessibility

Support for the validity of the Accessibility scale in [1] for English can be found in various works, though none make reference to so many expression types. Cornish (1986:221) briefly discusses the relation between various referring expressions and entities in focus (translatable to our degree of Accessibility, I believe). He states that

... unstressed independent third person pronouns match discourse referents with high or medium focus; stressed ones correlate with low-focus discourse referents; demonstrative pronouns with low- or zero-focus ones (i.e. latent discourse entities); and definite NPs and Proper Names either with low- or zero-focus discourse referents within the current context space, or with ones bearing a medium or high focus-level within a previous, though still accessible, context space. Stressed third person and demonstrative pronouns, as well as Proper Names and definite NPs, may also serve to signal the transition from one context space to another.

Marslen-Wilson *et al.* (1982) reach similar conclusions on referring expression choice, based on a (rather limited) set of data derived from an experiment performed at their laboratory. The experimenters had one subject read a twenty-page comic-

book, and later tell it to another subject. The story was about two main characters, and 88 references were counted and classified as to their textual position. Their findings correlate definite descriptions and names with the 'least embedded' level of the narrative (the story-line), and zeros and pronouns with an 'embedded' position within the narrative (episode or event level). Thus, while names + definite descriptions occur at the beginning of the narrative, almost all the pronouns (and zeros) occur within a single action sequence containing their antecedent.¹

Givón (1980, 1983b) proposes a gradation of referring expressions (interwoven with syntactic configurations) very much in the spirit of [1] above ([2] below is Givón's 1983b [10]):²

- [2] Most continuous / accessible topic
- ↑ zero anaphora
 - ↑ unstressed/bound pronouns or grammatical agreement
 - ↑ stressed/independent pronouns
 - ↑ R-dislocated DEF-NPs
 - ↑ neutral-ordered DEF-NPs
 - ↑ L-dislocated DEF-NPs
 - ↑ Y-moved NPs ('contrastive topicalization')
 - ↑ cleft/focus constructions
 - ↓ referential indefinite NPs
- Most discontinuous/inaccessible topic

Brown (1983) and Givón (1983d) confirm our distributional claims for written English and spoken English respectively. They in effect reach the following hierarchy with respect to the criteria of Distance and Competition (i.e. when there is more than one potential antecedent):

- [3] $\emptyset > \text{Unstressed Pronouns} > \text{Demonstrative Pronouns} > \text{Demonstratives} + \text{NP} > \text{Names / Definite Descriptions} > \text{NPs following Possessives}$ ³

Other studies have already been mentioned. Yule (1981) would support the following scale, based on his findings (laboratory experiments):

- [4] $it > \emptyset > that > this + NP > that + NP > the + N > the + \text{predicate} + N$

Note the strange finding on \emptyset vs. *it*. It is hard to imagine those 8 per cent of cases of 'displaced' entities (i.e. non-current, and hence less accessible) referred to by \emptyset s in his data. Indeed, Yule himself, when drawing a diagram describing reference progression (Fig. 1, p.49), reverses the order of *it* and \emptyset . Last, a few

studies concentrate each on a contrastive pair of referring expressions. Sanford and Garrod (1981, 1985), testing reading times, establish what I would term an Accessibility difference between pronouns and definite descriptions. Isard (1975), Linde (1979), Grosz (1981) and Schiffman (1984) make the same point about *it* vs. *that*.

Yet, the Accessibility scale presented in [1] should not be taken as a conclusive claim in two respects. First, strictly speaking it is not universal, for it obviously does not cover the full range of referring expressions in all languages, not even all the possibilities found in the one language we concentrated on, namely English. Thus, we can think of other combinations of referring expressions, for instance, a conjunction of a last or a first name with a modifier, stressed vs. unstressed demonstratives, definite descriptions and names (and not only pronouns). Moreover, presumably different modifiers can also play a role in determining the Accessibility rate (compare *silly John* with *John who used to work at the grocery store*). Bentivoglio's (1983) findings for Spanish, for example, are that NP + Relative Clause retrieves from larger distances than other modified NPs. In fact, we did not even exhaust all the 'atomic' expressions clearly attested for English. Additional options include, for example, reference by nickname, and the popular academic references, i.e. last name plus year of publication. But we can predict that nicknames signal high Accessibility (among other things), and that the full academic reference (e.g. *Chomsky 1986*) marks lower Accessibility than the last name on its own. Indeed, a quick look at any academic piece of writing reveals that the full reference is reserved for text-initial retrievals, as well as for paragraph-initial retrievals. Inside the segment we tend to omit the year of publication.

I next wish to argue that it is possible to predict with significant accuracy the degree of Accessibility associated with a Given referring expression, even in a language unknown to us. This is due to a principled association of specific forms with specific levels of Accessibility, an association which holds across numerous languages, many of which are not at all related. This is the second respect in which [1] cannot be taken as the most general claim on Accessibility marking. It is these principles, to be discussed below, which also constrain the extent of the idiosyncrasy allowed for each language. Basically, the prediction is that although the precise Accessibility rate attached to a specific referring expression may vary from one language to another, no language having counterparts (in the relevant senses, to be

indicated below) of the expressions listed in [1] can arrange them in a different order of Accessibility. It may use them under different circumstances (not pertaining to Accessibility), it may not have some of the expressions listed in [1], it may have others English does not have, but it is predicted not to violate the principle that degree of Accessibility dictates formal choices. We turn now to an examination of the universal status of the Accessibility scale presented above.

4.2 The universality of the Accessibility scale

We begin our discussion of the potential universal status of the Accessibility scale with studies of languages other than English, supporting it. We then propose a set of principles underlying the Accessibility scale in [1], arguing against competing accounts for the distribution of referring expressions. The principles argued for will then account for a variety of apparent divergences from the scale in [1]. I will argue that these seeming counter-examples actually do conform to Accessibility theory, though not necessarily to the particular scale in [1], which is specifically English. Thus, it is not the specific scale in [1] which is claimed to hold universally. Rather, it is the principles underlying Table 4.1 and the scale in [1] which, I claim, characterize the use of referring expressions cross-linguistically, although of course some conventionalization, i.e. arbitrariness, is also involved in the codification of Accessibility into marking systems of natural languages. Moreover, the principles proposed always interact with language-specific facts to generate the specific scale of Accessibility actually operative in the language.

Clancy's (1980) comparative study of English and Japanese discourse references has already been alluded to in the Introduction. An examination of where the two languages used full NPs vs. pronouns or gaps, shows them to be very similar. In both languages, a referential noun, where the antecedent is one clause behind, is typically realized as a High Accessibility Marker. Starting with a distance of two to four clauses, Low Accessibility Markers are more and more popular, until they are the only forms that occur. Similar results were obtained when the number of intervening referents were counted (the Competition criterion). When there are no intervening referents, High Accessibility Markers predominate overwhelmingly. With one intervening referent, full NPs are slightly more popular, and after that they predominate, so that after five intervening referents, no High Accessibility Markers can be found. Hinds

(1978b) confirms our claims as to the difference between pronouns and zeros with respect to Japanese, while Hinds (1983), like Clancy, is a more general survey.

Hinds (1983) is part of a larger quantitative cross-linguistic study of topic continuity (Givón 1983a), which is probably what I would term discourse references (see again note 2). Givón (1983a) is a collection of parallel counts for Japanese (Hinds 1983), Amharic (Gasser 1983), Ute (Givón 1983c), Biblical Hebrew (Fox 1983), Latin-American Spanish (Bentivoglio 1983), written English (Brown 1983), spoken English (Givón 1983d), Hausa (Jaggar 1983), and Chamorro (Cooreman 1983). They all support the Accessibility theory. Hinds finds that the average Distance, counted by the number of clauses between the last reference made to the same (animate) entity as the current subject/topic, is different for ellipsis (1.9 clauses), pronouns (5.8), and full NPs (7.8).⁴ Gasser (1983) claims that the Distance criterion as well as the Competition criterion (in my terms) have provided him with the following scale for written Amharic ([5] is a modified scale based on the one Gasser provides on p.138):

[5] Zero-Anaphora > Verb Agreement > Independent
Pronouns > Definite NPs > Contrastive Definite NPs

Givón (1983c) finds that Ute clitic pronouns and agreement tend to occur when functioning as direct objects more often than when they are subjects, but that the reverse is true with respect to zero anaphora. In other words, subjects, which are so often topics as well, are commonly marked by the higher Accessibility Marker (Ø). Fox discusses the Early Biblical Hebrew difference between verbal agreement and full pronouns, showing that the latter are used to indicate a marked co-reference pattern. We have mentioned similar findings for Modern Hebrew, and we will come back to it in Part II, where we discuss Agreement. Eid (1980) argues that, in Arabic, subject pronouns are generally omitted (but, of course, verbs are inflected, as in Hebrew). In case an embedded clause has a pronoun subject, it will most likely be interpreted as non-co-referential with the main clause subject. Similar points have been made about Italian (see Bates *et al.* 1980), and more generally about the free zero-option languages, Chinese and Japanese (see Li and Thompson 1979; and Hinds 1978a respectively).

Bentivoglio (1983) establishes the following scale for colloquial Spanish, based on both Distance and Competition:

Discourse references

- [6] Agreement Clitics < Stressed Pronouns < Definite NP < NP + Modifier < Names < NP + Relative Clause

Jaggar (1983) finds Distance correlations, justifying the following distinctions for Hausa referring expressions:

- [7] \emptyset > Unstressed Pronouns > Stressed Pronouns > Definite NPs > Names

Finally, Cooreman (1983), discussing Chamorro, finds that although in terms of Distance, \emptyset s and unstressed pronouns are not distinguishable, Competition shows pronouns to be better retrievers, i.e. lower Accessibility Markers. Cooreman thus establishes the following hierarchy:

- [8] Verb Agreement / \emptyset > Independent Pronouns > Full Definite NPs

Another collection of articles on discourse anaphora is Hinds (1978a). The studies there do not pose a single question as the Givón (1983a) collection, but still, those studies which are relevant do corroborate our claims, thus Levinsohn (1978) on Inga Narrative Discourse, Creider (1978) on Kalenjin, Chang (1978) on Korean, and Tai (1978) on Chinese.

Krámský's (1972) detailed analysis of definiteness marking systems in the world's languages supports another aspect of the scale in [1], the 'gradedness' inherent in the Accessibility claim. This comes out not from distributional counts, as in the above, but rather from his attempt to classify potential markers as to their 'geographic' context, so that he can determine whether they are demonstratives or definite markers. Krámský keeps encountering difficulties in his classification, since he finds it hard in fact to draw a clear-cut distinction between demonstrative pronouns and definite markers. Lyons (1977) makes the same point. Numerous etymological studies (see Greenberg 1978; Cassirer 1953; Harris 1978; and Ariel 1985a) clearly show that quite often the origin of a definiteness marker is a demonstrative. Moreover, it is the distal demonstrative (i.e. the lower Accessibility Marker among demonstratives) which tends to turn into a definiteness marker. The same goes for other markers. Many personal pronouns also contain deictic elements, for example, and Hinds (1986:108) claims that 'the border between noun and pronoun in Japanese is not easy to define'. But we will only exemplify some etymological findings for the Intermediate and Low Accessibility Markers.

Though no definiteness marker can be identified for Proto-

Semitic, many Semitic languages developed their definiteness marker out of one of the three deictic roots *n*, *l*, or *h*, never out of the two other deictic roots *d*, and *k*. Presumably, the latter two were specialized for higher Accessibility already at the common stage (but this is only our hypothesis). Indo-European had (at least) three stems used as demonstratives: *to-* / *so-*, **kio-* / *ko-*, and *eno-* / *ono-*. Two show up in later definite descriptions: West-Germanic languages and Greek developed a definite marker out of the *to-* stem, while the Norse languages used the **-eno* stem for the same purpose. Most of the Slavic languages possess no definite article, but in Polish and Czech, the demonstrative pronouns *ten* / *ta* / *to* are close to being definite articles, according to Krámský (1972). The Romance definite article is traced by Harris (1978) to *ille*, a demonstrative of third proximity in Latin. Among the many examples where a demonstrative (in form) serves as a definite article as well, are Tahitian (Tryon 1970), Akan (an African language, see Welmers 1973), Lahu (a Sino-Tibetan language, see Matisoff 1973), a few Australian languages (see Dixon 1980), and the following, all listed in Krámský (1972): Swahili, Central Dardic languages, Tatar and Uzbek (both Turkic languages), Yazghu Lami (an Iranian language), Hungarian, Mazaratian and Suluk (Indonesian languages), Kurdish, Bira, and Ngada.

4.21 Formulating the Universal Accessibility Claim

Given the supporting evidence for a scale of Accessibility marking in such unrelated languages, we should now address the question of what it is about the Accessibility scale in [1] which makes it a potential universal. Note that two questions are actually involved. The first one, which we will not here attempt to answer, is why mark Accessibility at all? Based on the nature of memory (see section 0.3 above), we have claimed that context retrievals depend on storage 'depths', affecting the degree of Accessibility different mental representations have. It then follows that natural languages should enable speakers to signal to the addressees the Accessibility status of the intended referent, so that they can more easily retrieve the correct one. But granted that, we remain with a second question, namely, why the arrangement as in [1]?

The answer for the second question is that the form-function correlations expressed in Table 4.1 and the Accessibility scale in [1] are not accidental. To the extent that they are accidental, they are indeed not universal, and we will in fact bring a few

examples later in support of this point. What then characterizes the association of a particular form with a specific degree of Accessibility (or initial context)? I will suggest three criteria. The most important criterion determining the potential Accessibility signalled by a specific linguistic form is its Informativity. Thus, the lower the Accessibility Marker, the more lexical information it normally incorporates. Looking at [1], we have empty forms at the bottom, while at the top we have quite a lot of information in expressions such as *Joan Smith*, and *the president*. In between are *this / that hat*, *this / that*, and even *she* (where at least person, number, and gender are marked).

It is only natural that lower Accessibility Markers should contain more information. After all, they are retrieval devices which refer addressees to less accessible sources, where there are many competitors too. In order to be effective, the marker has to be a good search-guide. The more information it imparts the better retriever it is – other things being equal, of course. In contradistinction to Low Accessibility Markers, High Accessibility Markers are emptier semantically. Since the entities referred to are highly accessible, the guidelines need not be as informative in order to guarantee a successful retrieval. But even there, additional information may prove itself useful. Brown (1983) found a significant difference between the distribution of \emptyset s vs. unstressed pronouns in English when the referents were human, but not so for non-humans. He attributes this finding to the fact that pronouns referring to humans encode the sex of the referent, and are thus of more help than the undistinguished *it*.

The criterion of Informativity predicts many of the differences in the Accessibility marking system: \emptyset vs. pronoun, \emptyset and pronoun vs. a full demonstrative (i.e. demonstrative+N) and a definite description, a bare demonstrative vs. a full demonstrative, first and last name vs. full name, and in general, any form with as opposed to without a modifier, as well as richer vs. poorer modifiers. However, it fails to predict a different value for the following pairs of expressions: a definite description vs. a full demonstrative, proximal vs. distal demonstratives, stressed vs. unstressed forms, verbal agreement vs. cliticized pronouns and vs. full pronouns. Moreover, it predicts different relative Accessibilities between pronouns and demonstratives in Chinese, Hebrew, and English. Whereas Chinese demonstratives are more informative than pronouns, since the former combine with noun classifiers, Hebrew pronouns and demonstratives are equally informative (distinct forms distinguish

for gender and number in both expressions). English pronouns, on the other hand, are actually more informative than demonstrative pronouns, for they have distinct forms for the two sexes and another for inanimates. We will have more to say about such differences later.

Another factor affecting the degree of Accessibility of a marker is Rigidity, i.e. how close it is to pointing to one entity unequivocally in a potentially ambiguous context. Of course, the ability to pick out a unique referent unambiguously is heavily dependent on the number of competing antecedents, but that is a contextual problem which we will ignore. On the whole, since lower Accessibility Markers are 'better retrievers' we should expect them to be less ambiguous. Indeed, Rigidity overlaps with lexical richness (the Informativity criterion) to a certain extent.⁵ Naturally, the richer the information provided by the referring expression, the easier it is to winnow out competing candidates right away. But this is where the near-Rigidity of names plays a role. All names are much more unequivocal in their referral. This criterion can therefore distinguish between names and definite descriptions and also between the various names, dictating that, at least in western society, full names are less ambiguous than last and first names, and last names are less ambiguous than first names. This is so, since we tend to have a much larger variety of last names than of first names (see Part III). Indeed, normally, when we apply the Distance and Competition criteria to a piece of discourse with respect to some Accessibility Marker, a similar scale of Accessibility marking emerges, but this is not always the case with respect to definite descriptions as opposed to names. For example, Givón (1980) and Brown (1983) find definite descriptions to average a larger Distance than names, but then, names can retrieve in a more ambiguous context.

A third criterion which seems to play a role in fixing degree of Accessibility with respect to a specific form is its degree of Attenuation, a concept akin to Givón's (1983b) Phonological Size. Again, it correlates to some extent with the Informativity criterion. The more informative the expression the more wording it takes, other things being equal. But the additional distinctions introduced by this third criterion are between stressed and unstressed forms (hence my preference for Attenuation over Phonological Size), and between shorter and longer forms which do not entail any difference with respect to amount of information or ambiguity. It can thus establish the differences, so far only briefly mentioned, between \emptyset , agreement, cliticized pronouns, and full unstressed pronouns. These extremely High

Accessibility Markers form the subject of Chapter 6, so we will leave it at that for now. We should, however, note that the three criteria suggested above are to be viewed as mediators between the cognitive concept of Accessibility and its conventionalized linguistic dress. In this respect, the proposal at hand differs from other proposals which have recently been put forward to account for similar distributional intuitions.

We will discuss the importance of the Relevance assessment associated with various markers in Part III, but we should at this point note that the fact that Informativity, Unequivocality, and Phonological Size play a role in Accessibility rate is predictable by Relevance theory. Thus, it would seem only natural to assume that the speaker interested in a successful referential act would supply her addressee with the optimally Relevant expression, i.e. one where processing cost is not unjustifiably high and the contextual implications gained make it worth the addressee's while to process. Long, detailed descriptions would only delay discourse progression without any benefit gained if the addressee is able to retrieve the right mental entity given a shorter expression. It is therefore conceivable that the three criteria above, Informativeness, Rigidity, and Attenuation can actually be replaced by a Relevance theory account, possibly rendering Accessibility theory redundant, in fact. Indeed, Kempson (1988, forthcoming) has argued that Relevance by itself can be relied upon to motivate the right choice of referring expressions, presumably that reflected in Table 4.1 and the scale in [1]. Since the general principle of Relevance theory is that a speaker should use the most economical method to get a sufficiently 'rewarding' message across, it would predict that a speaker should prefer the shortest forms whenever possible. It is only worth her while to elaborate on a description, thereby prolonging processing time, if there is no other choice, or if she is after additional contextual implications (see Part III).

Before we present our arguments against using such a general theory to account for the distribution of referential expressions in natural discourse, we should mention another proposal in the same spirit – that of Levinson (1985). Elaborating on a proposal by Sacks and Schegloff (1979), Levinson argues that two opposing forces are involved in referential form preferences (indeed in all linguistic formal decisions). A speaker is on the one hand pressured to conform to a Minimization principle (a speaker-based 'least effort' principle), pushing for preferences for shorter forms, but on the other hand, she should take into account 'the recipient design', i.e. she should make sure that the addressee

can in fact recognize who the referent is. Levinson's point then is that although recognition takes precedence over Minimization, 'Minimization is only relaxed step by step until recognition is achieved' (p.25). In other words, Levinson envisages discourse as a 'trial and error' process, where 'one can try a minimal form and see if it works, if not escalate' (p.45). What Levinson has in mind are examples such as the following (his [40]):

- [9] A: Hello
B: 'Lo
Is *Shorty* there?
A: Ooo jest- Who?
B: Eddy?
Wood / / ward?
A: Oo jesta minute

While I agree with Levinson (and see also Horn 1984) that there are two conflicting pressures in communication, his 'trial and error' proposal seems implausible. Even in conversations, such repairs as in the example above are not as common as Levinson would have us believe. They probably occur from time to time, mainly in initial retrievals, though they are certainly not exclusively related to initial references. I suggest that they stem from a wrong assessment on the speaker's part as to the Accessibility of the specific entity to the addressee. 'Mistakes' in the opposite direction, where we assume that some entity is less accessible to our addressee than it actually is can also be found, although less commonly so perhaps. These are not as often repaired as mismatches in the direction pointed to by Levinson, since they are harmless, not causing any communication breakdown.

Relevance theory can be seen to set out from a similar (though more complex) conflict as that discussed by Levinson. For Relevance, the conflict is between processing cost (an *addressee*-based 'least effort' principle) and implicational gain (an addressee's recognition of the referent, in our case). Relevance theory then proceeds to outline a more plausible solution than Levinson's 'trial and error' mechanism. According to Sperber and Wilson, an addressee is guaranteed by the speaker that the form she chose strikes the right balance between the two pressures. My point here, however, is that even this commonsensical suggestion is not sufficient as a full account of choices among referential expressions in discourse. Note, first, that the two proposals above can in fact be supported by quite a lot of empirical evidence. To a large extent, it seems to be the case that Relevance or Levinson's Minimization principle can account for

the distributional patterns we have outlined above, where preferences for leaner forms predominate. Initially, when 'there is no choice', a speaker takes the trouble and produces fuller forms, those I term Low Accessibility Markers, for only they can assure her of the correct retrieval by the addressee. Whenever she judges that an addressee can easily identify the referent, she opts for the shorter forms, \emptyset s, pronouns, etc. Textual counts certainly support this claim. Most retrievals are indeed made using High Accessibility Markers. Levinson's account for it is that leaner forms are not only effortless, they also ensure the most informative interpretations, by which he presumably means uniquely determined references. Another prediction directly made by Relevance is that a speaker should use the rigid expressions when she judges that the addressee may be entertaining a few entities equally suitable to be the intended antecedent. This is also true on the whole (see the references to 'Nubar' in [9a], Chapter 3 above).

But the fact is that Relevance theory, and Levinson's Minimization principle, as well as the three principles above, cannot account for the distribution of referring expressions without the mediation of Accessibility theory. Though the criterion of Attenuation can motivate the difference between stressed and unstressed forms, Minimization and possibly Relevance too cannot distinguish between the two (it is Phonological Size which is crucial for them).⁶ Neither proposal can distinguish between proximal and distal demonstratives (used anaphorically), and between full demonstratives (proximal and distal) and definite descriptions. In fact, note that in English and Hebrew, as well as in many other languages, it is the definite article which is shorter / more attenuated, and therefore actually predicted to be the higher, rather than the lower Accessibility Marker (the more informative marker, in Levinson's terminology).

The problem with principles like Minimization or our Attenuation is that formal minimality / Attenuation is not only a function of ease of interpretation. Higher degrees of Attenuation are also characteristic of unmarked forms as opposed to marked ones. And markedness is often dictated by frequency of occurrence, rather than by ease of interpretation. Thus, since the definite article is much more common in use, it tends to get shorter than the demonstrative. In Semitic languages it tends to be cliticized, for instance. Other problems that result from the attempt to reduce reference usage to a set of principles without conventionally tying them to a concept of Accessibility are not necessarily related to the gap between markedness and Informativity. A clear contrast

that is missed, at least by Relevance and Minimization, possibly by Attenuation as well, is that between Hebrew *hu*, 'he', vs. *ze* 'this male one', which are equally short and informative (though perhaps they differ as to degree of stressing).

As to actual textual distribution, an unintuitive result that is unavoidable if we do not make reference to a notion of Accessibility, is that both Relevance and the Minimization principle should in effect push for an over-use of proper names, especially partial ones (even more so when they are monosyllabic), since these are both rigid and relatively short. However, a sequence of utterances where reference to the same entity is repeatedly performed by name (*Bea*, for example, which is as long as *she*) usually sounds bizarre, unless there is a good reason for it, due either to identification problems, or else a speaker who is seeking some special effect (see Part III). Worse than that, languages like Italian or Hebrew, which do allow references relying on agreement markers, and/or cliticized pronouns, and/or unstressed pronouns are predicted to always use the shortest forms available (i.e. agreement inflections), since longer forms, being no more informative than shorter forms in this case, cannot possibly better disambiguate among referents. In other words, unless one assumes that agreement markers, cliticized pronouns, and unstressed pronouns designate different rates of Accessibility, we cannot justify the occurrence of the longer forms at all. Also, we should expect to find a different distribution for nicknames created by lengthening, as opposed to nicknames created by shortening (*Ginatush* vs. *Gin*, as nickname for a girl named *Ginat*), but this is certainly not the case in Hebrew (and see Wierzbicka 1986 on a similar pattern of nicknaming in Australia). Last, reflexives which are invariably longer forms than pronouns mark higher Accessibility (in my terminology), and they are more informative (i.e. unequivocally interpreted) according to Levinson. A direct mapping between form and distribution cannot therefore be established.

All the problems listed above are traceable to one source. The Relevance and the Minimization accounts assume that in reference retrievals a speaker guides an addressee by making sure he picks the right antecedent based on eliminating 'wrong' choices of competitors. This elimination process is based on the content addressability of memory items. However, as we have argued, the linguistic marking system reveals a sensitivity to non-informationally based features. Where two forms are indistinguishable as to the amount of information they impart, the accounts given by Relevance and Minimization are at a loss to

explain why the more costly version is ever used.⁷ Accessibility theory, on the other hand, can refer to the difference in the degree of Accessibility they signal in order to motivate the distributional differences. Also, where form–function correlations are not perfect (definites are shorter than demonstratives, pronouns are shorter than reflexives, etc.) Accessibility theory can claim that conventionalized Accessibility markings exist in language. No such solution is open for the other two accounts.

Given the above discussion, what, then, is the relation between Relevance, Accessibility, the principles above, and Table 4.1 and the scale in [1]? The only point crucial at present is that Relevance (and certainly not Minimization) cannot in and of itself control reference markings. The question of the relation between Accessibility and Relevance will be addressed in Part III. Briefly, I believe that Relevance, or a functionally equivalent pragmatic theory, operates at a much more general level than Accessibility. Relevance is an attempt to provide a maximally general principle at work in natural discourse. Accessibility theory, I suggest, should be seen as subordinate to any overall discourse theory. It can be viewed as a system natural language devised in order to aid addressees in processing for Relevance (see Blakemore 1987, who first argued this point specifically with respect to Relevance theory). Thus, since processing for Relevance calls for a heavy reliance on context retrievals, languages have evolved a highly detailed system for making these retrievals easier, more automatic.⁸ Hence, the Accessibility marking system can be viewed as a useful tool serving Relevance assessments. We are concentrating on referring expressions in this book, but see Ariel (1985a,b, 1988b) for similar claims with respect to other context retrievals.

A somewhat different relation of subordination holds between Accessibility and the principles of Informativity, Rigidity, and Attenuation. These principles serve as rather commonsensical criteria for the translation of the basically cognitive concept of Accessibility into linguistic dress. Actual Accessibility marking systems are in effect attempts to verbally express minute distinctions of relative psychological Accessibility. Now, most form–function correlations in language are probably arbitrary, but in this system it is only minimally so. Still, Accessibility marking systems establish conventions of use, and, as such, they must impose some arbitrary assignments. The formal differences between definites, proximal demonstratives, and distal demonstratives (as well as the Hebrew distinction between *hu*, ‘he’, and *ze*, ‘this-male-one’), which we could not account for

using either Relevance or the three principles, presumably do derive from such arbitrary decisions connecting some forms with certain degrees of Accessibility.

But this is the exception rather than the rule. The reason is simple enough. The system of Accessibility marking is not frozen machinery. It is extremely flexible, allowing an extensive amount of productivity. Names are constantly being created, precisely by conforming to the principles of Attenuation (they usually get shortened) and Rigidity (they become opaque and unequivocal). In fact, a speaker can employ these principles to vary almost endlessly, generating more and more distinctions. Using the criterion of Informativity (and Rigidity) we can produce forms we hardly mentioned in our account, such as *your red thing*, *your thing*, *the thing / whatchma call it*, as opposed to the more canonical form, *the pen*, for example. I therefore suggest that it is these three principles which account for the potential richness of the Accessibility marking system. Thus, the principles above should be seen as synchronically productive mechanisms, rather than as a diachronic account of how Accessibility marking systems arose.

As to the status of Table 4.1 and the scale in [1], these simply represent an approximation to the English codification of the concept of Accessibility. Thus, though most of the associations made by Table 4.1 and scale [1] between linguistic forms and the degrees of Accessibility entailed by them can be motivated, some elements are quite arbitrarily assigned specific degrees of Accessibility. We should thus expect that other languages may also reveal some arbitrariness, not necessarily to the same extent, and not necessarily in the same pairs of markers as English. But before we turn to discuss a few variations on the English coding system of Accessibility, we should say a few words about the relation between Accessibility theory and another account of discourse references, Foley and Van Valin's (1983) typology of reference tracking systems. Foley and Van Valin propose to classify reference tracking systems into four types (plus some allowed and disallowed combinations of them):

- [10] a Pragmatic Pivots, accompanied by voice oppositions. In such a system, 'junctures are formed on the basis of coreferential Pragmatic Pivots, which are normally realized by zero anaphora in the linked units'. (p.322)
- b A Switch-Reference System, where verbal morphology signals (non-)co-reference of specific semantic arguments.

Discourse references

- c Gender Systems, which divide nouns and mark them as part of nominal groups, the classifications usually relying on inherent features of the entities designated by the nouns. Anaphors can only relate to nouns of the same category.
- d Inference Systems, characterized mainly by the lack of the above systems. Zero anaphora is used extensively, and as a result, an addressee is required to use much more inferencing.

Foley and Van Valin's typology is obviously of great value, given the vast amount of varied data they can thus generalize over. But it concentrates so much on each of the formal systems of reference listed above that it fails to bring out the common facts about reference tracking mechanisms. I believe that this is also partly due to Foley and Van Valin's focus on only those forms which I would call High Accessibility Markers. They are thus missing a comprehensive view of the reference picture. Occasionally, they do note how a language reference system compensates for difficulties inherent in its system (any one of the four listed above), by resorting to what I would call lower Accessibility Markers. They find that Yimas, for example, complements its gender system by using a 'distal deictic plus the adjective concord endings' (p.332), when the gender system is not rich enough to draw the required distinctions. In terms of Accessibility marking in referential acts, we can then conceive of Foley and Van Valin's typology as exemplifying the extent to which languages differently codify (high) Accessibility distinctions. Such differences do not at all undermine the universalist approach underlying Accessibility theory. For example, English is classified by Foley and Van Valin as a language of type [a]. But surely English also makes use of a restricted gender system, of inferencing (see Part III), and presumably, one could even argue that stressed vs. unstressed pronouns form some kind of a Switch-Reference system.⁹

We turn now to a few observed differences in systems codifying Accessibility. These, as I have suggested above, simply manifest different versions of the translation of a cognitive concept of Accessibility into a linguistic marking system. Again, I believe that the very same principles of Informativity, Rigidity, and Attenuation are used cross-linguistically (in addition to a few arbitrary signifier-signified relations). The differences we actually find are therefore mainly due to differences in the *number* of lexical forms. Certain languages may have more or

fewer lexical options than others, but, more often perhaps, languages severely limit the usage of specific forms, classifying them as 'extremely marked', thus, in effect, reducing the referential options of the language. They then space their unmarked options somewhat differently, each covering more ground, so to speak, i.e. used in more environments. In English, this is clearly the case for \emptyset (= marked) versus pronoun (= unmarked). In Japanese, as we will see, it is just the opposite (\emptyset = unmarked, pronoun = marked). Other differences, which we will not go into, pertain to additional appropriateness conditions, unrelated to Accessibility, imposed on certain markers in some but not all languages.¹⁰

In order to prove our point about the inherent similarity, we concentrate on a comparison between English and Japanese, two extremely different languages. This is precisely the topic of Clancy's (1980) study, who indeed concludes that 'the overwhelming finding is that the distribution of inexplicit reference forms is basically the same for both languages' (p.140). Still, Clancy found that all in all, Japanese speakers used more full NPs than English speakers (26 per cent vs. 15.7 per cent of all NPs). Presumably, she claims, because English has two other options, pronouns and ellipsis (though the latter is syntactically and semantically much more constrained), whereas in Japanese only ellipsis is used. English and Japanese pronouns are not really counterparts of each other in terms of the position on the scale of Accessibility they possess in each language. As Hinds (1978b) claims, pronouns in Japanese presuppose a personal relationship between the speaker and the referent. This, then, accounts for the fact that third-person pronouns, though attested for Japanese, were not used by Clancy's Japanese subjects.

Interestingly enough, though, we also have the following difference. In Japanese, the proportion of High Accessibility Markers and Low Accessibility Markers in \emptyset clause Distance and in \emptyset intervening referents is very different from English. Whereas in English there are over seven High Accessibility Markers for one Low Accessibility Marker in \emptyset referent intervening cases, in Japanese there were less than two High Accessibility Markers for one Low Accessibility Marker. More dramatically, within the same clause, where English used a pronoun, Japanese chose full NPs quite often. Clancy explains this difference by arguing that in Japanese, in order to establish a New referent (and the narration of the Pear Story involves a few such acts), it is preferable to repeat it twice. In English and Hebrew, I suspect, a similar strategy is not uncommon in openings of long articles,

where the first two mentions of the human discourse topic will be by proper names (a Low Accessibility Marker), perhaps alternating between a full name and a last / first name.

Another difference from English is the lack of a definiteness marker. In fact, many languages do not have a definiteness marker as such. However, Japanese does have a particle system which to a certain extent overlaps with definiteness. Moreover, speakers have the option of leaving out the noun particle *-wa* (marking continuous topics), thus creating a contrast between *-wa* vs. \emptyset . This distinction is then brought into play in Accessibility marking. Hinds (1983) therefore finds the following hierarchy ([11] is based on Hinds' Table VI, p.64):

[11] $\emptyset < \text{Noun} / \text{Pronoun} + \emptyset < \text{Noun} / \text{Pronoun} + wa^{11}$

Note that as expected, it is the fuller forms which retrieve from larger distances. The marginality of pronouns in Japanese discourse (they seem to parallel stressed pronouns in English, both functionally and in terms of frequency) is probably due to their much lower position on the Japanese Accessibility scale. Lower markers are not used as commonly as higher ones, hence their rarity as compared to English. Also, as befits a lower marker, Japanese pronouns, etymologically derived from full nouns, can actually be modified. Last, unlike English, Japanese has an honorific marking system. But apparently, unlike gender systems, it does not seem to constitute an efficient identification strategy according to Hinds (1978b).

English and free zero option languages like Japanese and Chinese turn out to be quite similar despite the fact that while \emptyset is extremely limited in English, pronouns are quite rarely used in Japanese and Chinese. Thus, though the 'absolute' Accessibility associated with each form in the two types of languages is quite different, each language positions the very same referring expressions in the same order on the scale (namely, pronouns mark lower Accessibility than \emptyset). Note that both systems abide by the three principles underlying Accessibility marking, maintaining relative degrees of Accessibility as these predict. The only difference is that English singles out \emptyset s to be marked, whereas Japanese and Chinese single out pronouns as marked. Thus, though the result is that these markers are not translations of each other, they all remain within the restrictions imposed by Accessibility theory.

We will not go into any other total-system comparisons. We will make do with noting a few scattered examples from various other languages. As to pronouns, Longacre (1979) mentions a

few languages which seem to be the mirror image of Japanese with respect to pronouns. In Gurung of Nepal and Sanio-Hiowe of New Guinea, pronouns are restricted to paragraph-scope. On the other hand, in languages with highly 'informative' verbs (i.e. inflected for person), such as Hebrew, Arabic, or Italian, pronouns seem to occupy a lower position on the scale than in English (see Eid 1980, 1983; and Bates *et al.* 1980 for pronoun distribution in Arabic and Italian respectively). It was asserted above that English stressed pronouns correspond to regular pronouns in Japanese, and the same applies to Arabic (see Eid 1983), and possibly to Chinese as well. Lujan (1986:256) confirms our claim (Ariel 1985a) regarding the relativity of Accessibility markings when she states that 'our crosslinguistic data indicate that the overt/null pronominal opposition of languages like Spanish corresponds to the stressed/unstressed contrast in languages like English'. When comparing English stressed pronouns with their Hebrew counterparts, they appear to correspond to Hebrew *ze* forms (demonstratives), rather than to stressed pronouns. In Polish and Irish this contrast is again not expressed by stress, but rather, by a form derived, and hence longer and less attenuated than the regular pronominal form (Polish *go* vs. *jego*, Irish *e* vs. *eisen*). Judging by the Spanish examples quoted in Montalbetti (1984:121-3), it seems that inverted pronouns are associated with what we would term lower Accessibility than non-inverted ones. Montalbetti notes that this, however, is not true for Italian. Differences can also be discerned for different stages/registers of the same language. Biblical Hebrew and Written Modern Hebrew, for instance, use subject pronouns in the future tense only when they refer to marked antecedents (see Fox 1983 for Biblical Hebrew), whereas colloquial Hebrew has now virtually abandoned the possibility of \emptyset subject pronouns in the future.¹²

Another, final set of examples is provided by name types. Having a last name is a particularly new and western invention.¹³ However, those communities not in the habit of explicitly or conventionally labelling a person according to one's father (this is what a last name is, after all), make do with other expressions attached to the given name, thus solving the ambiguity problem that last names are used to resolve in western societies. Many societies commonly add a modifier to the person's name. Often, it is the place where the person comes from (*David ha-lahmi*, 'David, the Bethlehemite', i.e. David from Bethlehem). Many modern names are in fact such expressions which have by now become frozen, and even opaque

(*Toledano*, i.e. from Toledo, Spain). Other possibilities are the attachment of some salient feature of the person to her / his name. This is also a recognized source for many of our last names. In the Amish society, for example (see Enninger 1986), this is still productive, and indeed, very much needed, for Amish first names are pulled out of an extremely restricted set of names, so that confusion between people easily arises. Apparently, the solution is to attach some description to the name. In Ottoman society, such conventions were also used, and in fact, in some cases they have survived the temporary circumstances which prompted their initiation in the first place. In due time they too have frozen into 'namy' names, so that a certain leader of a famous revolt, known at the time as *uzun hasan*, 'the tall Hasan', is still today referred to in the same fashion. Not only has the description as 'tall' remained, it has become part and parcel of the name proper, and is appropriately capitalized when written down.

4.3 Concluding remarks

The characteristics of the distribution of referring expressions, as discussed in Part I only pertain to degree of Accessibility, but, of course, different markers have additional use conditions associated with them, some of which will be discussed in Part III below. The central claim of Part I has been that all languages define the appropriate distribution of their referring expressions based on a cognitive concept of Accessibility. Moreover, all languages employ the same three principles (Informativity, Rigidity, and Attenuation) in translating the concept of Accessibility into an actual linguistic marking system. This principled procedure is responsible for the richness of the system, as well as its ongoing creativity, constantly adding and instantly improvising new Accessibility Markers. Only marginal instances were found where the form-function correlations were arbitrary, i.e. due to a conventional association of a specific marker with a certain degree of Accessibility.

As argued above, the scale constructed by the three principles can only predict *relative* Accessibility, since most languages constrain at least some of the options, either by forbidding their occurrence (they are ungrammatical), or by drastically reducing their freedom of distribution (grammatically or pragmatically). It is for that reason that an automatic translation procedure among languages regarding such markers is often impossible. All this notwithstanding, discourse in all languages is governed by the

very same Accessibility principles. All are predicted to favour Low Accessibility Markers in initial retrievals, and a transfer to higher and higher Accessibility Markers as discourse progresses, though at certain predetermined environments (long Distance from antecedent, high Competition, segment-initially, etc.) speakers are expected to take into account potential decreases in the Accessibility of various mental entities. Moreover, all languages should employ those forms used for initial unmarked retrievals from Encyclopaedic Context to mark Low Accessibility in general, forms used for unmarked Physical Context retrievals as Intermediate Accessibility Markers, and those forms used for unmarked reference to the Linguistic Context as High Accessibility Markers. We have only briefly mentioned a subset of High Accessibility Markers so far. We have quoted a few findings supporting our positing zero and agreement at the bottom of the scale in [1]. Part II, however, is devoted to a discussion of such extremely High Accessibility Markers.

This page intentionally left blank

Part II

Sentence-level anaphora

This page intentionally left blank

Applying Accessibility theory to sentence-level anaphora

5.1 General predictions

Thus far I have limited the discussion of the application of Accessibility theory to discourse anaphora. Part I has been dedicated to arguing that a set of Accessibility principles is responsible for appropriate discourse-level anaphoric links. However, if, as I believe, Accessibility is a cognitively based concept guiding anaphoric choices, we should expect it to be functional at the sentence level too, perhaps even partially reflected in the grammar itself. In fact, I shall argue that discourse anaphora and sentence-level anaphora are rather alike. Specifically, they are both subject to Accessibility considerations.

Note that the claim that Accessibility theory is involved in the more restricted linguistic domains can be understood in two ways. According to the first, more extreme version, which I will not adopt in this book, although sentence-level anaphora is to a large extent a grammaticalized system, the cognitive rationale behind it, specifically, behind the NP typology currently assumed, consists of the same Accessibility principles which we have isolated in previous chapters.¹ In other words, it is degree of Accessibility which differentiates between the various nominal expressions (anaphors, pronominals, and names) subjected to Binding principles. Note that the basic Binding rules seem very much in the spirit of Accessibility theory, as they distinguish between three NP types, differing with respect to their anaphoric interpretations. These NP types are easily seen as Accessibility Markers varying in the degrees of Accessibility they signal:

[1] Binding Conditions (from Chomsky 1982:20):

- A: An anaphor is bound in its governing category.
- B: A pronominal is free in its governing category.
- C: An R-expression is free.

Sentence-level anaphora

Intuitively, the Binding conditions specify that reflexives and reciprocals, which cannot (usually) have an independent reference, must be linked to an antecedent within a minimal domain, normally the clause they are in, in order to get an interpretation. This would be a natural distribution for an extremely High Accessibility Marker. Pronouns, on the other hand, can be either independently referential (deictic) or referentially dependent on a linguistic antecedent (anaphoric). Accordingly, they are lower Accessibility Markers, and should follow a different distributional pattern. Indeed, according to [B] above, when they are anaphoric, they cannot be co-indexed with a C-commanding antecedent within the same minimal domain. They can only be co-referent outside their Governing Category. Principle [C] determines that full NP forms (names, definite descriptions), obviously referential on their own, cannot be bound by the grammar at all. In Accessibility terminology, what this amounts to is that within the heavily restricted context considered grammatically relevant, i.e. the sentence, we should not expect names to be anaphoric. Assuming for the moment that this is true, principles [B] and [C] can be seen as conventions banning the use of too Low Accessibility Markers within a highly restricted domain, where the referent's Accessibility is bound to be rather high.

Supporting this stronger claim regarding the role of Accessibility in sentence-level anaphora requires a highly complex argumentation. I will therefore leave it for future research. This part, instead, will be mainly dedicated to arguing a weaker version of the role of Accessibility in sentence-level NP linkings, namely that Accessibility theory constrains possible grammaticalization processes involving pronominal forms. In addition, it is Accessibility theory which governs whatever optional decisions are left by the grammar concerning sentential anaphora. It will be shown that Accessibility theory can account for at least some of the classical questions relegated to pragmatics, i.e. so-called free-variation and marked-unmarked distributions, even of forms governed by the grammar. At the focus of Chapter 6 are the properties associated with specific Accessibility Markers, zero vs. pronoun subject preferences. Its main point will be that the form-function correlations argued for in Chapter 4 above hold true for pronoun and agreement marker types as well. In other words, it is again Informativity, Attenuation, and Rigidity which dictate specific Accessibility assignments to potential linguistic markers. These assignments, in turn, determine the actual distribution characteristic of each of

them. The focus of Chapter 7 is the criteria determining the degree of Accessibility an antecedent has for any anaphor (the criteria of Antecedent Saliency and Unity). As a matter of fact, we will mainly refer to linguistic choices which are to be accounted for by our Unity principle (Switch-Reference systems, Resumptive Pronouns and backwards anaphora).

Before we move to reviewing actual data, we should briefly outline the predictions made by Accessibility theory regarding the distribution of (grammaticalized) anaphoric expressions. The general anaphora picture is that the same mechanisms operative in discourse reference assignments form the basis for sentential anaphora. As will be remembered, our claims pertain to how degree of Accessibility is determined on the one hand, and to correlations of marker form and degree of Accessibility function on the other. Beginning with the first claim, the degree of antecedent Accessibility at the point where the anaphor is reached depends on two criteria: first, Antecedent Saliency (its Prominence, the amount of Competition it has with other potential antecedents), which can be determined either grammatically or contextually. Second, the relation between the anaphor and the antecedent – the Unity criterion (the Distance between the antecedent and the anaphor, the degree of Cohesion among the units involved).

The form–function correlation that we have argued for is that emptier forms (less Informative, less Rigid, more Attenuated) retrieve more accessible entities. I will suggest that the same applies to sentence-level anaphoric expressions. Sentential anaphoric expressions form a scale of Accessibility, divided into more than three types. A richer version of the following scale will be argued for in Chapter 6 (where ‘rich’ and ‘poor’ refer to degree of Informativity):

- [2] Full Pronouns > Cliticized Pronouns > Rich / First- and Second-Person Agreement > Poor / Third-Person Agreement > Zero Agreement

Assuming that this scale is indeed supported in terms of language use, what, if at all, is its grammatical status? Note, first, that languages may differ as to the precise slot on the Accessibility hierarchy they each assign to their anaphoric expressions (e.g. reflexives in English vs. Korean), as well as the variety of markers (e.g. Dutch and Turkish double system of reflexives, as opposed to English). This follows from our perception of the NP typology as a grammaticalized instantiation of Accessibility theory.² Grammaticalization, of course, may take a somewhat

different version in different languages, although, as we have argued in Chapter 4, there are specific constraints as to what variability is to be expected. Another language variability we predict is that different expressions may grammaticalize using slightly different constraints. This is relevant with respect to the choice of opaque domains, i.e. domains where an antecedent is highly accessible to the anaphoric expression. Last, it is also possible that one and the same rule may be fully grammatical in one language or one environment, but only a pragmatic tendency in another.

However, the many fine distinctions among grammatical anaphoric expressions and among relevant contexts to be offered below do not in and of themselves constitute a counter-argument to current grammatical theories. Binding theory and other syntactic theories will have to be modified only to the extent that they undergenerate. But to the extent that they overgenerate, they need not be modified since they can rely on Accessibility theory to account for so-called optional preferences for one but not another anaphoric expression under various circumstances. Indeed, the chief principle responsible for compensating for the overgeneration of Binding, the 'Avoid Pronoun' principle, will be seen as a special case of Accessibility theory.

Still, the grammar / non-grammar borderline advocated here is in line with Kasher (1984) and Sperber and Wilson (1986), rather than with current assumptions of syntacticians. Reference to non-linguistic factors as is entailed by Accessibility theory does not in and of itself render a phenomenon extra-grammatical. Only those aspects of linguistic communication which are accountable by an appeal to overall principles such as Rationality (Kasher) or Relevance (Sperber and Wilson) fall outside the linguistic module, for they need not make specific reference to actual linguistic forms. Conventions governing specific linguistic markers usage – Accessibility Markers in our case – should, I believe, form part of our grammatical theory. Hence, in as much as the use principles to be argued for below will be seen to be coded into specific linguistic markers, I will suggest that they do in fact form part of the grammar of natural languages. It is in this sense that I will argue for the grammaticality status of the scale of Accessibility marking above.³

5.2 Replacing the 'Avoid Pronoun' principle with Accessibility theory

GB proponents have always acknowledged that at least in some

cases the grammar should be complemented by a pragmatic explanation. The 'Avoid Pronoun' principle was invoked by Chomsky (1981) to account for those cases where the grammar left unspecified the choice between a pronoun and a zero form, although the zero option seemed to be preferred. In English the zero option can only be PRO, since it normally has no pro, but in other languages it can also account for pro preferences over overt pronouns. Typical examples are English [a] and Hebrew [b]:

- [3] a Noga wants PRO / ?for herself to win.
b pro / ? ani kamti meuxar ha + boker
I got-up late this morning.

Later proposals (Bouchard 1983; Montalbetti 1984; Hermon 1985) have claimed that some such principle can account not only for optional, pragmatically triggered preferences, but also for obligatory, i.e. grammaticalized marker choices as well. As Bouchard (1983) notes, the failure to use PRO in French does not merely create a less acceptable sentence. The result is simply an ungrammatical sentence:

- [4] a * Je veux que j' aille voire ce film.
I want that I go to see that movie.
b Je veux PRO aller voire ce film.
I want to go see this movie.

The same effect occurs in Imbabura Quechua. Hermon therefore suggests that the 'Avoid Pronoun' principle is actually composed of two parts. The preference for pro over an overt pronoun is probably a true pragmatic phenomenon. The preference for PRO, however, may grammaticalize in some languages, as it has in French and Imbabura Quechua. Interestingly enough, it is pragmatically controlled in other Quechua dialects.

In line with Accessibility theory, I would like to suggest that the 'Avoid Pronoun' principle is more apparent than real. Where it does seem to be at work it naturally follows from the more general theory of Accessibility. Where it does not work, proponents of such a principle have offered no explanation for its non-application. Accessibility theory, on the other hand, can account for all uses quite naturally. We shall first mention a few of the cases noted in the literature where zero and overt pronouns differ in distribution. We shall then propose that Accessibility theory can account for such facts in a more general way.

Mohanan (1983) claims that backwards anaphora, for

example, is restricted to *pro* in Malayalam. He also notes that though *pro* is not restricted to sentential antecedents, if it does have a sentential antecedent, the latter C-commands it. Overt pronouns are not thus restricted. McCloskey and Hale (1984) claim that Irish, like Hebrew, has richer (synthetic) and poorer (analytic) inflections. Where free variation exists, preference is given to the zero + synthetic form, presumably due to the working of an 'Avoid Pronoun' principle. However, unlike Hebrew, there is no co-occurrence of overt pronouns with synthetic forms. Moreover, a synthetic *pro* can be conjoined to an overt pronoun, and it can serve as a relative clause head. Irish *pro* is probably the closest to confirming the original claim that *pro* is merely a phonetically unrealized pronoun, although, as noted, it is still not the case that the two are always interchangeable. Welsh *pro* marks higher Accessibility, to use our terminology. Like Hebrew *pro*, it co-occurs with synthetic forms, and it is more prevalent in the standard literary language. Pronouns are hardly ever omitted in colloquial varieties, claim McCloskey and Hale. Hermon (1985) supports the preference for zero over pronoun in Imbabura Quechua. In matrix sentences, where there is overt agreement, *pro* is the preferred style. Even when there is no agreement, if the antecedent is a salient discourse entity, pronouns are not obligatory, and a true zero is allowed. Another distinction between *pro* and a pronoun is the preference for a disjoint reference interpretation if a pronoun is chosen over *pro* in embedded clauses.

Montalbetti (1984) proposes a most pervasive use of the 'Avoid Pronoun' principle in Spanish. A simplified version of his Overt Pronoun Constraint (OPC) states that overt pronouns cannot be bound when they occur in contrastive distribution with *pros*. In other words, preference is given to *pro* for bound readings. Thus, though where *pro* cannot occur, a pronoun can have a bound reading, when both are grammatically allowed, the pronoun must be interpreted as free, or as co-referential where possible, but not as bound. Montalbetti supports this claim in a few other languages, and then proposes to parameterize his OPC over different languages. Japanese, Chinese, and Catalan forbid such pronominal readings under all circumstances. They thus seem to obey a more radical version of the OPC.

Note that the 'Avoid Pronoun' principle in general, as well as the specifically Spanish OPC, is always formulated only in one direction, favouring the zero form, constraining the overt pronoun. If preferences are only unidirectional as such analyses suggest, it is not clear at all why pronoun avoidance should ever

apply optionally rather than obligatorily. Given that speakers are Rational (Kasher 1984) / opt for Optimal Relevance (Sperber and Wilson 1986), if they can achieve the same goal with less effort (obviously zero is less of an effort than the pronunciation of an overt pronoun), why should they ever produce the overt forms?⁴ The problem is especially acute with regard to *pro* in inflected languages, since no more information is supplied by the speaker in choosing an overt pronoun over its so-called zero counterpart. Hence, on the face of it, anaphor resolution seems to be in no way facilitated for the addressee when overt pronouns occur rather than *pros*. Given the observed occurrence of overt pronouns in *pro* drop languages, it is quite clear that the 'Avoid Pronoun' principle cannot be made responsible for the whole phenomenon of *pro* / pronoun distribution.⁵

I suggest that the only reason GB linguists have concentrated on the 'Avoid Pronoun' aspect of Accessibility Marker choice, for the large part ignoring the other side of the coin dictating a preference for a pronoun, is that they have concentrated on minimal units, clauses, Governing Categories. Limiting themselves to such small-scale units, no wonder they only noticed the preference for the higher Accessibility Marker, namely zero. When antecedent and anaphor form part of such a restricted unit, antecedent must be highly accessible at the point where reference is again made to it. Hence the preference for *pro*, the marker of extremely high Accessibility. Preferences for lower Accessibility Markers are not usually discussed. I suggest that parallel to the observations above on *pro* preferences over pronouns, one finds cases which point in the opposite direction, namely, a preference for the overt pronoun form. The so-called 'unmarked' preference for *pro* over pronoun is simply an artifact of the limited contexts considered by grammarians. Statistically, across-sentence co-references are the unmarked case, sentential ones occurring much less frequently. Indeed, when we examine whole texts we can see that certain environments (change of topic, paragraph initial position and in general, less than highly cohesive units) show clear preferences for fuller forms, although \emptyset anaphoric expressions across S boundaries are allowed.

The deeper generalization behind the 'Avoid Pronoun' principle is that marker choice should be sensitive to the Accessibility of the antecedent at the point of uttering the anaphoric expression. Accessibility theory predicts that preferences can go in either direction, depending on the Accessibility rate, as assessed by the speaker. Note that the *pro* preferences noticed in the literature are not at all random. It is not the case that languages

simply impose some specialization on their pronouns and pros, once they have both in contrastive distributions. Montalbetti is right when he rejects such a simplistic specialization as an explanation for the initiation of his OPC. But Montalbetti's rejection of cognitive or pragmatic motivations for the OPC does not carry over to the more general Accessibility claim. What Montalbetti failed to appreciate is that all languages have something in common when they distinguish between pro and pronouns. They invariably relegate the more dependent interpretation (the higher Accessibility marking function, in our terms) to pro. In Hebrew, Malayalam, Chinese, and Korean it is backwards anaphora which favours pro, not forwards anaphora. In Imbabura Quechua, in Hebrew, and in Spanish it is co-reference vs. a deictic reference which is assigned to pro. Finally, it is the bound reading which dictates pro over pronoun employment in Spanish.

I suggest that the OPC, and in general, any version of an 'Avoid Pronoun' principle as such is both unnecessary and incorrect. Where it appears to be operative, its application can be attributed to Accessibility theory, as can preferences in the opposite direction, which are left unexplained by the principle. Last, I also find no justification in distinguishing between pro vs. pronoun choices, cliticized pronoun vs. full pronoun choices, reflexives vs. pronoun choices, as well as pronoun vs. definite description vs. proper name, etc. choices, as discussed in Part I. Thus, [5a] is superior to [5b] (although the grammar allows both options), for the same reason, namely, the high Accessibility of 'John' makes the reference by a pronoun better:

- [5] a Jokes about John upset him.
b Jokes about John upset John.

In fact, Montalbetti himself notes that the same OPC effects are common to the Japanese reflexive *zibun*, for example. My claim is that governing anaphoric expressions use a general 'Avoid an Inappropriate Accessibility Marker, be it too low or too high' principle.

My claim, then, is that use preferences as well as codification processes along the Accessibility marking scale always take into consideration similar factors, namely those relevant to antecedent availability at the point where the anaphoric expression is uttered. The only distinction which must be drawn is where such preferences are fully grammaticalized. While such grammaticalizations as we have mentioned above, e.g. the ban against bound pronouns in Spanish, or PRO in French and Imbabura

Quechua, are cognitively motivated by Accessibility theory, they have a different status when compared to cases where such principles are merely optional. Only in the latter case can the speaker take into account additional context-dependent factors which intervene and modify the Accessibility with which the antecedent is available to the addressee at the point of uttering the anaphor. Note that grammaticalizations favouring higher over lower Accessibility Markers may turn out to be exclusive to reflexive/pronoun, pro/pronoun, and PRO/pronoun choices. In fact, condition [C] of the Binding principles which can be seen as an 'Avoid a Lower Accessibility Marker' strategy has been argued by Reinhart (1983b, 1984) to belong outside the grammar proper. Moreover, neither Principle [B] nor Principle [C] can be taken to be fully grammaticalized because they can be overridden by pragmatic considerations.

Zero subjects

The GB NP classification assigns *pro*, i.e. the subject gap occurring in tensed clauses, the status of a pronominal, the only difference between it and regular pronouns being its lack of a phonetic matrix. However, the typical co-occurrence of *pro* with rich inflectional systems was noticed right away (see Taraldsen 1980; Rizzi 1982; and Chomsky 1982), and the account given was that *pro* is only licensed by a rich enough INFL(ection) node, richness normally dependent on the presence of a person specification. Hence, *pro* was seen as obligatorily requiring proper government (by the AGR(eement) node). The differences between a non-null subject language like English and a null subject language like Italian or Spanish, is that only in null subject languages is the INFL node a proper governor for the subject. The rationale behind this is intuitively clear. A rich inflection can help identify the subject, while a poor one cannot. Due to the different morphological systems, subjects are 'recoverable' in Italian, while they are not so in English.

However, empirical work, especially on Chinese *pro* distribution (Huang 1984) seems to shake this intuitive assumption that zero subjects are dependent on some morphological marking. It has clearly been shown that these languages allow zero subject occurrences rather freely, though they are even less inflected than English. Many of these zeros, it was decided, cannot be accounted for by syntactic means. Loyal to their belief that non-linguistic factors are not allowed to play any role in the grammar, the first step taken by GB linguists was the separation of zero subjects into what has come to be known as *pro* drop on the one hand, and zero topics on the other. Since zero topics are sometimes governed by pragmatic considerations, no attempt should be made to account for their distribution. Others are treated as variables. As for the lack of inflection in Chinese, Borer (1985) has postulated an abstract anaphoric AGR in

Chinese. Limiting herself to *pro* in embedded clauses (matrix ones are zero topics), Borer claims that this AGR is co-indexed by any C-commanding argument in the matrix, then transmitting the identifying features it receives from its binder to *pro*. This seems to account for Huang's data regarding embedded *pros*, though not for the many examples where the zero subject is topic bound. The technical details of Borer's analysis need not concern us here. The current assumption that Chinese possesses an abstract AGR node, however, is directly relevant to the question we have posed in this part. Whereas hypothesizing an abstract AGR node may be a legitimate step in the GB framework, the theory developed in this book cannot accept such an account as an explanation. Even granting that this is an appropriate syntactic solution, we should still ask what it is that stands behind this 'abstract AGR'.

The classification of zero subject phenomena we shall adopt in this book is different from that of current approaches. While their classification depends on the different accounts they can offer (*pros* vs. variables, syntactic vs. pragmatic solutions), our classification will be more typologically oriented, i.e. based on the formal properties of the linguistic phenomena under discussion. Viewed from this point of view, a different classification emerges, where again a so-called null subject does not at all constitute a unitary phenomenon. Although in all cases the position of the grammatical subject is empty, other formal differences can be discerned. Accepting the only commonsensical claim that the subject *pro* is often interpreted via the AGR element, we should examine the nature of the AGR element. As we shall see, this element is not invariant across languages, nor is it one and the same within the same language even. Given that we have various types of AGR elements, we prefer to classify zero subject occurrences according to the AGR type which legitimizes each. In other words, we should determine the degree of Accessibility associated with each AGR type. We will then be able to draw out distinctions within what seems to be one phenomenon, namely having no subject.

Accessibility theory makes three types of predictions regarding anaphor marking systems. The first is related to the anaphor type, the second to the antecedent type, and the third pertains to the antecedent-anaphor relation. Taking the anaphor-related factors first, we should distinguish between a true zero AGR Accessibility Marker (when AGR is null, or abstract, as in Chinese), a poor AGR Accessibility Marker (e.g. Hebrew present tense, to be discussed below), and a rich AGR Accessibility

Marker (e.g. the Italian AGR). We should therefore expect that though languages may differ as to how 'liberal' they are with their zero subjects (there can be languages with a rich inflectional system – German and French, for example – that do not allow zero subjects at all, or only restrictively so), language-internal choices should still be governed by the above differences regarding marker richness. In other words, we should not find a language which licenses zero subjects to co-occur with the more impoverished Accessibility / Agreement Markers, but not with richer ones.

The next factor is the nature of the antecedent. The more salient the antecedent, the easier it is to allow an impoverished, more attenuated Accessibility Marker. Given that certain linguistic entities carry some special Prominence, we should expect them to have a privileged status. Potential antecedents which have competing or distracting candidates are less salient, for example. Subjects, humans, topics, etc. are more salient than non-subjects, non-topics, etc. Non-linguistic (discourse) antecedents may also vary in their Saliency, affecting Accessibility Marker options. It seems that the most salient discourse entities are the speaker and the addressee, although discourse topics and other extremely salient objects present at the discourse setting are also potential non-linguistic salient antecedents. Again, given Accessibility theory, we should expect some arbitrary, language-specific decisions, determining how far a language can stretch the use of its various emptier Accessibility Markers. However, language-internally, we should find a reflection of Accessibility theory, or at least no counter-examples to it. We expect no language to allow poor Accessibility Markers with less salient antecedents but not with more salient ones. For example, no language should allow third- but not first- (and second-) person referents to be marked by zeros. No language should allow non-subjects to bind *pro* / AGR (in embedded clauses) but not subjects, etc.

Finally, a third set of predictions concerns the relation obtaining between antecedents and anaphors / Accessibility Markers. Though Accessibility theory cannot predict whether or not such contextualized conventions should be grammatical rather than extra-linguistic, it can still rule out some possibilities. For instance, given a relatively short Distance between the antecedent and the anaphor, or that antecedent and anaphor both belong to a relatively cohesive unit (embedding vs. conjoining for example), etc., marker choice should favour the use of the higher rather than lower Accessibility Marker. I propose to test the

above hypotheses by examining the facts of Hebrew zero subjects, since Hebrew seems to have a variety of AGR types. This chapter is therefore mainly dedicated to the analysis of Hebrew data, supporting the Accessibility theory view of zero subjects as dependent on different AGR elements. Section 6.2, however, makes a few observations on Chinese zero subjects.

6.1 The Accessibility status of AGR types: Focus on Hebrew

Borer (1983, 1985, 1986) claims that matrix sentences allow *pro* only in certain tenses and persons. In fact, however, the true generalization of when *pro* drop is allowed or disallowed goes beyond a mere specification of tenses (past and future) and persons (first and second). Borer's claim is that those inflections enabling *pro* drop are 'rich' inflections, i.e. ones where the morphology specifies the grammatical person referred to, and not just number and gender. Her examples are of the following sort:

- [1] a \emptyset / at rait / tiri et ha + seret shalosh
 \emptyset / You saw-you / will-see-you acc. the movie three
 peamim.
 times.
 (You have seen/will see the movie three times.)
- b * \emptyset / hi raata / tire et ha + seret shalosh
 \emptyset / She saw-she / will-see-she acc. the movie three
 peamim.
 times.
 (She has seen/will see the movie three times.)
- c * \emptyset / ani / at / hi roa et ha + seret kol boker.
 \emptyset / I / you / she sees acc. the movie every morning.

Borer observes that the Hebrew inflectional paradigm is not perfectly symmetrical. As [a] shows, when grammatical person is specified, *pro* drop is allowed. [b] shows that unlike first- and second-person past / future tense inflections (first-person inflections are not actually exemplified in [a]), third-person inflections in past and future tenses are not marked, and hence pronouns are obligatory.¹ [c] shows that since present tense has no person marking whatsoever, *pro* drop is disallowed, no matter what the grammatical person is.

However, as Borer notes, the ban against third-person *pro* is not maintained in embedded clauses, where *pro* / AGR can find a matrix antecedent. Any matrix argument will then do (the

Sentence-level anaphora

following are Borer's [16a,b]):

- [2] a *Talila* amra le + itamar she + \emptyset hiclixa.
Talila said to Itamar that succeeded-fem. sg.
b Talila amra le + *itamar* she + \emptyset hicliax.
Talila said to Itamar that succeeded msc. sg.

This possibility, however, is only open to past and future tenses. The following example (based on Borer's [17a,b]) demonstrates that present tense AGR cannot allow such matrix identification:

- [3] *Talila_i amra le + itamar_j she + $\emptyset_{i/j}$
Talila said to Itamar that
maclixa/macliax be + bxinot.
succeeds (fem./msc.) in tests.
(Talila told Itamar that she/he succeeds in tests
(habitually).)

In order to distinguish the now three-way AGR distinctions (past / future first and second persons, past / future third person, and all persons in present tense), Borer suggests that first- and second-person *pro* is an (empty) pronominal, and third-person past / future AGR is anaphoric, whereas present tense AGR simply lacks a person slot. In our terminology, it should probably not be defined as any Accessibility Marker at all, while the former two mark different degrees of Accessibility. To support the decision to view the third-person past / future AGR as anaphor, and first- and second-person past / future *pro* as pronominal, Borer quotes the following pair (her [16c] and [24a]), which shows that only 'pronominal' AGR (the term is mine, not Borer's) can take a split antecedent:

- [4] a *Talila_i amra le + itamar_j she + \emptyset_{i+j} hiclixu.
Talila said to Itamar that succeeded-pl.
(Talila told Itamar that *(they) succeeded.)
b Dina_i lo sipra le + xa_j she + \emptyset_{i+j}
Dina not told to -you that
huzmantem la + mesiba.
were-invited-2nd pl. to-the -party.
(Dina did not tell you that you were invited to the party.)

It is my belief that the register most appropriately described by Borer's intuitions is written Hebrew, to be distinguished from both literary and colloquial Hebrew.² However, even here, it seems that Borer did not notice that she probably based one of

her claims on the exception rather than the rule. To prove the anaphoricity of third-person past/future AGR, Borer cites examples such as [4a] above, where reference to a split antecedent seems impossible. But note the following sentences:

- [5] a *noga* bikra et *shimon* al maamaro ha-
 Noga criticized acc. Shimon on his-article the
 +shovenisti kshe + Ø- nasu li +yrushalayim.
 chauvinist when - went-pl. to Jerusalem.
 (Noga criticized Shimon on his chauvinistic article when
 (they) drove to Jerusalem.)
- b *Noga* biksha mi +*shimon* she + ha +paam Ø
 Noga asked from Shimon that this -time
 yecu la + mesiba ba +zman.
 will leave-pl. for-the party on-the time.
 (Noga asked Shimon that for once (they) should leave
 for the party on time.)³

I suggest that it is the type of verb which blocks the split antecedent reference in the examples quoted by Borer (although [4a] could be improved on to allow *pro* in a complement embedded even under *amar*). Complements of *amar*, 'say', do not share the status of other embedded clauses in terms of degree of cohesion to the matrix. Although formally, of course, they are equally embedded, such complements do not form a highly cohesive unit with the matrix (cf. the status of indirect discourse complements with jussives in Foley and Van Valin's (1983) hierarchy quoted in Chapter 7 below). In fact, they are often perceived as constituting the Dominant part of the utterance (in the sense of Erteschik-Shir and Lappin 1979), a status which grants them greater independence and separateness from the matrix. This lack of cohesion, I suggest, accounts for the inability of third-person AGR to be anaphoric to the 'inferior', less salient, split antecedent.

Even conjoined sentences, which are less of a unified domain, sometimes allow for third-person *pro* drop and split antecedents, a possibility not mentioned by Borer. [6a-d] are all acceptable, though the similar [e] examples are not. The reason is that the conjoined clauses in [a-d] are semantically much more related (the Unity criterion):

- [6] a hayom *noga* hitxila im shimon, u- le +
 Today Noga made-a-pass at Shimon, and- according
 daati maxar Ø tatxil im david.
 to my opinion tomorrow will-make-a-pass at David.

Sentence-level anaphora

- b *noga* arza et ha + mizvada be-itivyut, ve+ laxen
 Noga packed acc. the suitcase slowly, and- so
 axshav le + caara ha + rav Ø tealec
 now to- her-sorrow the great will-have-fem. sg.
 la + ruc le + taxanat ha + rakevet.
 to -run to -the-station -of the- train.
 (Noga packed her suitcase slowly, and so, now, much to
 her chagrin, (she) will have to run to the train station.)
- c *noga* dibra im *shimon* yafe, ve + laxen Ø
 Noga spoke to Shimon nicely, and -so
 yaazor la li + sxov et ha + mizvada.
 will-help-msc.-sg. her to -carry acc. the -suitcase.
- d rak lifney xodesh hitxatna *noga* im
 Only before month got-married-fem. sg. Noga with
shimon, u+ xvar ba + shavua she + avar Ø
 Shimon, and already in-the -week that -passed
 hitgarshu.
 got-divorced-pl.
 (Only a month ago Noga married Shimon, and last week
 (they) already got divorced.)
- e i ?*noga* dibra im shimon, ve + Ø
 Noga spoke with Shimon, and
 taazor lo.
 will-help-fem. sg. him.⁴
- ii **noga* dibra im *shimon* yafe, ve + Ø
 Noga spoke with Shimon nicely, and
 yaazor la li + sxov et ha
 will-help-msc. sg. her to -carry acc. the
 + mizvada.
 -suitcase.
- iii **noga* dibra im shimon, ve + Ø -yisxavu
 Noga spoke with Shimon, and will carry-pl.
 et ha + mizvada be-yaxad.
 acc. the suitcase together.

[a], [b], and [c] show that when conjoined sentences are clearly related (in [a] we have a parallel reading, in [b] and [c] the second clause is explicitly marked as a consequence of the first), the zero subjects can be identified by the adjacent clause subject. Other matrix arguments can also control zero subjects in such cases, as witnessed by [c]. [d] demonstrates that a split antecedent is also acceptable. [ei], however, shows that less of a

cohesion between the clauses reduces the acceptability of cross-sentential control, and non-subject control in such cases is quite impossible [eii]. The same applies to split antecedent control [eiii].

Literary Hebrew offers additional counter-examples to Borer's empirical assumptions. In some cases, third-person zero subjects seem to be the norm in matrices. In a story I screened, I found 117 third-person past / future slots.⁵ In 103 (88 per cent) of them the zero option was used. Though some of these occur in embedded clauses, most of them do not. The following are typical examples:

- [7] a *sof sof* \emptyset *nishtaxnea* . . .
 Finally became-convincd-fem. sg.
 (Finally (she) became convinced . . .)
- b *ba-shenit* \emptyset *lo ciyet*
 For-the second [time] not obeyed-msc. sg.
le-xukey ha-higayon . . .
 to the rules of the logic . . .
 (For the second time (he) did not obey the rules of logic.)

Unlike the non-markedness of the above examples, the following are a few obviously marked and rare examples of zero subjects with present tense or in a nominal sentence [b]:⁶

- [8] a *af-paam lo* \emptyset *moce kan klum li-shtot*, . . .
 Never not find-msc. sg. here anything to- drink, . . .
 ([I] never find one here, . . .)⁷
- b *hu mitxaten. buba shel baxura. \emptyset hayta sham*
 He is marrying. Adarling girl. was-fem. sg. there
yaxad ito . . . beten shtuxa – \emptyset ulay bat
 together with-him. . . tummy flat maybe of-fem. sg.
22, aval niret bat 17.
 22, but looks-fem. sg. of-fem. sg. 17.
 (He's marrying. A darling girl. (She) was with him . . . little
 tummy – (she) must be twenty two, but (she) looks
 seventeen.)
- c *ani nimlat le-veiti, otem zixroni.*
 I escape home, shutting my-memory.
shvuayim tmimim \emptyset nimna mi-le-vakram.
 A whole fortnight avoid visiting-them.

- d ko gadol haya shuv ha -merxak benehem. Ø
 So large was again the distance between-them.
 medabrim be +milim teomot u +mexavnim
 speak-pl. in words compatible and mean
 li +dvarim axerim.
 different things.

Colloquial Hebrew provides another finding unpredictable by Borer's thesis.⁸ In this corpus, surprisingly enough, no pro drop occurs with a future tense inflection (except where future inflections function as imperatives). Although one can certainly not claim that such pro drops are ungrammatical, it seems significant that this option was never employed in this corpus, while the unmarked past tense first and second persons used zero subjects (82.5 per cent). In fact, even the literary data somewhat distinguish between the two tenses (90 per cent zeros with past tense, 76.5 per cent with future tense). However, upon carefully listening to the recordings I made, I found out that well over half of the future sentences with overt pronouns actually contained a garbled/shortened version of the pronoun. I referred to these cliticized pronouns in Part I, but an example may still be illustrative:

- [9] ani xoshev . . . *an-oci* [= ani oci] oto be +yom sheni . . .
 I think . . . I- will take out it on Monday . . .
 (I think . . . I will take it out on Monday . . .)

In addition, a marginal percentage (6.1 per cent) of non-anaphoric 'non-pronominal' AGRs (present tense AGR) co-occur with zero subjects (note that intonational breaks make it clear that the verbal forms below are in fact present tense rather than participles, which in Hebrew take the same form):

- [10] a ba +zman ha-axaron *ani* mitoreret be +sheva.
 In-the-time the-recent I wake-up at -seven.
ani menasa li +shon. bederex-klal Ø
 I try-fem.sg. to -sleep. Usually,
 mityaeshet.
 give-up-fem. sg.
 (Recently I wake up at seven. I try to sleep. Usually,
 (I) give up.)
- b az *hu* kotev sham . . . e . . . Ø mevi
 So he writes there . . . eh . . . brings-msc. sg.
 kol miney anashim . . .
 all sorts of people . . .

Summing up the counter-examples brought forth, it seems that,

for the most part, zero subjects, whether they are *pro* drops or zero topics, are more prevalent than Borer assumes. Anaphoric AGR was found bound by split antecedents, and across conjoined clauses (in written Hebrew), it occurs unbound by a sentential antecedent quite commonly (in literary Hebrew), and, rather marginally, a zero subject even occurs with the non-anaphoric present tense AGR (in literary and colloquial Hebrew). Finally, despite Borer's claim that future first- and second-person *pro* is 'pronominal', its actual distribution often fails to manifest such behaviour (in colloquial speech).

The distinctions Borer draws are certainly the relevant ones. AGR types, I would like to claim, do vary in the Accessibility they mark. There is no doubt that 'pronominal' AGR permits zero subjects much more freely than anaphoric AGR, and that non-anaphoric (non-'pronominal') AGR hardly ever permits zero subjects. But the point is that, as everywhere in the GB NP classification, the actual markers allow for much more flexibility than the theory predicts. Before I present my account, it should be noted that Borer's classification of the different AGRs, if used to predict the potential distribution of the various zero subjects, is insufficient.⁹ First, classified as 'pronominal', 'pronominal' AGR should not differ from a full or a cliticized pronoun, since in GB terms *pro* and pronoun only differ in that the former lacks a phonetic realization. Second, future and past tense third-person AGRs, both anaphoric AGRs, should also not differ in zero subjects availability. Third, there should be no differences between first- / second-person AGR and third-person AGR over and above such differences that are the result of pronominal and anaphoric AGR. Last, present tense AGR should never allow zero subjects. All of these conclusions are debatable, I have argued, certainly when a variety of Hebrew registers is taken into consideration.

However, it is not my goal in this book to argue against Borer's syntactic analysis of *pro* drop. The linguistic phenomenon relevant for Accessibility theory is zero subjects, rather than merely *pro* drop.¹⁰ Moreover, there is no doubt that Borer's analysis can rather easily accommodate itself, at least to most of the new data presented above. Instead, I shall proceed to outline the general picture of zero subject distribution as Accessibility theory predicts it to be. Note that while for the kind of theory Borer is proposing, so-called optional choices are totally irrelevant, Accessibility theory purports to account for so-called stylistic variations as well. Hence, it is not enough to simply allow for zero subjects. Given that zero subjects occur

Sentence-level anaphora

rather often in Hebrew, such zeros seem to be in contrastive distribution with both full and cliticized pronouns. Accessibility theory, then, poses another question, namely, what governs preferences among the various choices? Such variations are certainly not random, and I suggest they can be motivated by Accessibility theory quite straightforwardly.

Beginning with anaphor-related features, when we take the Informativity criterion, we can divide the relevant competing forms into two. Those markers which include overt morphemes for person, number, and gender (i.e. full pronouns, cliticized pronouns, and 'pronominal' AGR) contrast with those markers which are only (at least overtly) marked for gender and number (present tense AGR and anaphoric AGR). This divides Accessibility Markers as follows:

Table 6.1 Hebrew AGR types with respect to Informativity

<i>Informative</i> [+ person, + gender, + number]	<i>'Poor'</i> [+ gender, + number]
Full pronouns	Third-person AGR
Cliticized pronouns	Present tense AGR
First-second-person past/future AGR	

In order to further distinguish the above, we can use the criterion of Rigidity. The markers on the right-hand column are now clearly distinguishable: whereas present tense inflections are truly ambiguous, third-person past / future inflections are unique to third persons. Though they are not morphologically marked with respect to person, their zero marking is a clear identifier of the grammatical person they represent.¹¹ Accessibility can therefore distinguish between Borer's [+anaphoric] as opposed to [-anaphoric, -pronominal] AGRs. Turning to the left-hand column, the effect of Rigidity in this column is not dramatic, though we can, as we should, distinguish between first- and second-person vs. third-person pronouns (be they cliticized or full). Last, applying the Attenuation criterion, we can distinguish between the three marker types. Inflections are more attenuated than cliticized pronouns, which, in turn, are more attenuated than full pronouns.

However, we are still left with one formal contrast to be accounted for, namely, that between past and future tenses (especially noticeable in colloquial Hebrew). I suggest that indeed the person inflection markers in the two tenses are drastically different. Future tense person markers are opaque, while past

tense person markers are quite transparent. Historically, this derives from the fact that so-called future tense considerably predates past tense formation. But in order to see that this historical fact indeed results in synchronic opaqueness, note the following inflection paradigms, where I have italicized the person markers. The independent pronoun form appears on the right:

Table 6.2 Person markers in past and future tenses

<i>Past tense</i>	<i>Future tense</i>	<i>Independent pronoun</i>
shavar + <i>ti</i>	∅ + <i>eshbor</i>	<i>ani</i> (1st pers., sg., no gender)
shavar + <i>ta</i>	<i>t</i> + <i>ishbor</i>	<i>ata</i> (2nd pers., msc., sg.)
shavar + <i>t</i>	<i>t</i> + <i>ishber</i> + <i>i</i>	<i>at</i> (2nd pers., fem., sg.)
shavar + <i>nu</i>	<i>n</i> + <i>ishbor</i>	<i>anu</i> (1st pers., pl., no gender)
shavar + <i>tem</i>	<i>t</i> + <i>ishber</i> + <i>u</i>	<i>atem</i> (2nd pers., pl., msc.)
shavar + <i>ten</i>	<i>t</i> + <i>ishbor</i> + <i>na</i>	<i>aten</i> (2nd pers., pl., fem.) ¹²

Note that in every case, past tense person markers are closer to the full pronoun form. In the first-person singular, where the greatest gap can be discerned, past tense contains a different consonant ([n] vs. [t]), but it retains the original final vowel [i], whereas the future inflection contains no person marker. The rest of the past tense forms are easily seen as related to the full pronouns. They are shortened pronouns in fact, all consistently missing the initial vowel [a]. The future tense, on the other hand, contains only one consonant of the full pronoun, sometimes with the addition of a discontinuous syllable at the end. Hence, I suggest that there may be differences between future and past inflections due to the transparency of the past tense person marker versus the opaqueness of the future tense person markers. It follows that past tense markers are to be analysed as relatively lower Accessibility Markers.

Given the above distinctions, we can formulate the following Accessibility hierarchy, starting with the lowest, and ending with the highest Accessibility marking:

- [11] Full Pronouns > Cliticized Pronouns > First- and Second-Person Past Tense AGR > First- and Second-Person Future Tense AGR > Third-Person Past / Future Tense AGR > Present Tense AGR

Based on [11], we can now account for the distinction made in both literary Hebrew and colloquial style between past and future tenses, and between these two and the present tense (compare the unmarked [7] examples with the marked [8])

examples). The difference between literary Hebrew on the one hand, and colloquial and written styles on the other, regarding third-person past tense AGR, will have to be stipulated as a register difference, the literary register assigning third-person AGR a slightly larger slot (but see the discussion below).

Now, when we take into consideration antecedent-related factors, we should predict that the higher the Accessibility Marker, the more difficult it is for the form to be anaphoric to an 'inferior' antecedent. I suggest that this accounts for the deteriorating ability to be anaphoric to split antecedents. The relevant examples are [4a] vs. [4b], where second-person AGR can, but third-person AGR cannot, be anaphoric to a split antecedent. Another antecedent distinction is revealed by comparing subject and object control of AGR. For such a distinction see again [6b] and [6c] vs. [6ei] and [6eii], where subject control is freer than object control with third-person AGR. Last, once we examine the data, noting differences in the Unity between the clause containing the antecedent (the matrix, in fact), and the clause containing the Accessibility Marker, we can account for the differences noted between the acceptable [5a,b] and [6a,b,c] and the unacceptable [4a]. In the former (embeddings and explicitly semantically related conjuncts), where degree of cohesion is relatively high, third-person AGR is possible, as is a split antecedent. In the latter (complements of verbs of saying and conjuncts not explicitly marked as semantically connected), such anaphoric relations are ungrammatical, using the extremely High Accessibility Marker – zero.

Moreover, I suggest that the formal distinction found between first- and second-person AGR [+ overt person marker] and third-person AGR [– overt person marker] should (diachronically) be accounted for by reference to the difference in Accessibility between speaker and addressee as opposed to third-person parties. If, as Givón (1976) and Comrie (class notes, 1978) claim, verbal inflections arise from full pronouns, a claim which is strongly supported in Hebrew and other languages, then the fact that third-person verbal forms are not marked for person testifies that such pronouns tend to be overt.¹³ I would claim that a cliticization process, eventually leading to the creation of a paradigm of verbal morphology, was not at all initiated for third-person subjects, since in the unmarked case, their referents are not salient enough to trigger the use of an Accessibility Marker higher than an overt pronoun.

Moving now to the distributional consequences of the above claims, we should be able to predict zero subject preferences in

all those cases where the grammar allows for a contrastive distribution. In other words, the following pairs need to be differentiated:

- [12] a Full pronouns vs. cliticized pronouns
 b Cliticized pronouns vs pronominal AGRs
 c First- /second-person past tense AGRs vs. first- /second-person future tense AGRs
 d First- /second-person past / future AGRs vs. first- /second-person present tense AGRs
 e Third-person past / future tense AGRs vs. third-person present tense AGRs

Of course, where applicable, more contrasts can and should actually be accounted for, since every left-hand side form should be distinguished not only from the one on its right, but also from all the ones below it. Full pronouns, for example, should be distinguished not only from cliticized ones, but also from all the other emptier, more attenuated forms. I do not have empirically significant findings for all the above distinctions, but where they are not statistically reliable, they are at least suggestive.

The difference between full and cliticized pronouns is only relevant for colloquial speech, and I do not have much data on such alternations. Still, the following samples of recorded speech are predicted to be non-accidental:

- [13] a *ani* xoshev . . . *an[i]* oci oto be
 I think . . . I will-take-out it on
 +yom sheni, *an[i]* lo yodea . . . *ani* xoshev
 Monday, I not know . . . I think
 she +ulay *ani* ectarex li +nsoa le-london
 that may-be I will-have to- go to-London
 be-yom sheni.
 on Monday.
 (I [full] think . . . I [clitic] will take it out on Monday,
 I [clitic] do not know . . . I [full] think that maybe I
 [full] will have to go to London on Monday.)
- b *hu_i* diber im *nubar_j*. *nubar_j* amar . . . *nubar_j*
 He spoke with Nubar. Nubar said . . . Nubar
 haya . . . *h[u]_i* +pashut diber *ito*.
 was . . . He simply spoke with-him.
hu_j xashav *kshe* +*hu_j* . . .
 He thought when- he . . .

The above examples suggest that speakers may utilize the

Sentence-level anaphora

Attenuation difference between full and cliticized pronouns. In [a], both the future tense (partially informative AGR) and the second present tense take cliticized pronouns. Once the discourse topic changes, however, the speaker reverts to a full pronoun (the third and fourth *I*). [b], already referred to in Part I, demonstrates the difference between a long-established discourse topic (indexed by i) and the highly salient non-discourse topic (indexed by j). It is the discourse topic which is marked by the cliticized pronoun, leaving the pronoun for the non-discourse topic.

A much more substantiated distinction can be drawn between full pronouns and all zero types. Note the following changes from \emptyset to pronoun and back to \emptyset . It is always the case that \emptyset maintains reference, whereas the full pronoun alters the referents intended ([14] is part of a letter written to a friend, outlining a scheme to meet, etc.). Note that the only time an overt first-person plural pronoun (*anaxnu*) occurs is when its reference changes from $i+j+k$ to $i+j$ only:

- [14] . . . navo . . . *E. ve + ani_j* be +yom shishi. ha
 Shall-come-we E. and I on Friday. The
 +toxnit ha- svira *lanu_{i,j}* hi . . . kax tuxli
 -plan the- plausible for-us is . . . Thus will-be-able-
at_k kcat li+ shon . . . $\emptyset_{i,j,k}$ noxal yaxad . . .
 you a bit to- sleep . . . shall-eat-we together . . .
 ve +ulay gam $\emptyset_{i,j,k}$ netayel, ma she+ \emptyset_k
 and maybe also shall-journey, whatever
 tirci. $\emptyset_{i,j,k}$ nihiye yaxad ad . . . , ve
 you will-wish. Shall-be-we together till . . . , and
 +az *anaxnu_{i,j}* naxzor . . . k+she $\emptyset_{i,j}$ nagia
 -then we shall-return . . . When shall-arrive-we
 $\emptyset_{i,j}$ necalcel . . .
 shall-call-we . . .

Third-person AGRs are always constrained by a topic requirement. In other words, such zero subjects require a highly salient antecedent in order to occur. This is equally true for both the literary and the colloquial cases. Pronouns, of course, are not so constrained. The literary style, however, manifests another pronoun-zero distinction. The story I reviewed consistently distinguishes between matrices separated by a full stop, and matrices separated by commas. Though in the comma separation each sentence is independent syntactically, it is probably not so pragmatically. A large gap in zero popularity can be related to this distinction. Most of the pronouns (82.3 per cent) referring

to any one of the discourse topics in the story occurred in a clause following a full stop. In fact, even the rest of the pronouns referring to the discourse topics (17.65 per cent) can be distinguished from their contrastive zeros. All the pronouns occurred sentence-initially, while no zero subject appeared sentence-initially. They always follow PPs or adverbials, many of which semantically connect the current sentence with previous ones.¹⁴ The following are a few of the relevant examples:

- [15] a [full stop] *hi xasha mugbelet . . . yeynot levanim*
 She felt constrained . . . wines white
 she- et shmotehem \emptyset bitaa beceev . . .
 that- acc. their-names pronounced sadly . . .
 (She felt constrained . . . white wines whose names
 (she) sadly pronounced . . .)
- b [full stop] *taxat ze \emptyset gara be +dirot sxurot . . .*
 Instead lived in apartments rented . . .
 (Instead (she) lived in rented apartments.)
- c [full stop] *le-feta \emptyset hucfa osher. keycad*
 Suddenly was-flooded happiness. How
 lo \emptyset xashva al kax kodem!
 not thought about that before!
 (Suddenly (she) was flooded with happiness. How come
 (she) did not think about this before!)

Taking into account that the above are typical examples (the numbers here are statistically reliable), [a] shows that initial subjects of 'full stop' sentences are obligatorily realized in pronominal form. It also shows that subsequent references to the same entity in 'comma' sentences are obligatorily not realized phonetically. [b] and [c] show that the only acceptable zero subjects in 'full stop' sentences are ones which are semantically connected to the preceding clause containing the antecedent. Though the specific style described, conjoining so many matrices by commas, may be peculiar to this story, the findings are so consistent that they suggest that the writer's choice could not have been accidental. And the choices mark an absolute difference between pronouns and zero subjects. Third-person zero subjects are limited to discourse topics, as they are in colloquial speech, but even then they mostly occur in more pragmatically embedded clauses. Pronouns and zero subjects, therefore, occur in perfectly complementary distributions.

The difference between first- and second-person future vs. past

AGRs is mostly reflected in their popularity (the latter are by far more popular). I did not perform a detailed examination of their respective contexts, though a superficial look at a translated A. Walker story (mentioned in Part I), seems to show that future AGR more easily gives way to overt pronouns than past AGR, given a not highly cohesive unit. The same differences in popularity show up between past and future first-/second-person AGRs taken together as opposed to the analogous present tense AGRs. Present tense AGRs in general rarely allow zero subjects, no matter what the person is, though the high Saliency of the speaker and the addressee make them candidates for a zero subject even when they are not the discourse topic. The following, for example, have actually frozen as a zero subject version (though the full and cliticized pronoun versions are perfectly acceptable too, even in colloquial speech):

- [16] Ø lo yodaat /betuxa.
Not know /sure.
(I) don't know / not sure.)

Note that even English allows such zero subjects, as witnessed by the naturalness of the glosses in [16], as well as the Grace Paley example [8a]. In fact, I agree with Borer that Hebrew present tense AGR is not significantly different from the English AGR. First- and second-person zero subjects are easier to find in English (possibly only in negative sentences), but in Part I we quoted the following example from an I. Fleming book:

- [17] And *Stragways's* friends at his club say *he* was perfectly normal. Ø left in the middle of a rubber of bridge – Ø always did when it was getting close to his deadline. Ø said *he'd* be back in twenty minutes. Ø ordered drinks all round – again just as *he* always did – and left the club dead on six-fifteen, exactly to schedule.
(Fleming 1958:26)

The following example from a TV play exemplifies, I believe, a specific stylistic pattern of attaching to a sentence an extra, highly dependent clause to emphasize a previous point. It commonly allows for zero subjects in English:

- [18] She's an irritating little girl, Ø always was.
(British Television, 23 April 1987)

The Hebrew data we have examined support the generally held view that occurrence of zero subjects is sensitive to the richness of the inflectional form. We have seen that the more informative,

the more rigid, and the less attenuated the form, the easier it is to allow zero subjects, both grammatically (the question of licensing) and pragmatically (the question of contextual preferences). The distinctions we have identified in the various Hebrew registers, however, call for a few more distinctions than Borer's three-way distinction allows for. We have also established that the connection between the clauses containing the antecedent and the anaphor / Accessibility Marker is crucial, as is the Saliency of the antecedent (objects and split antecedents are not so salient). Topic antecedents are superior antecedents, ones allowing non-sentential and even non-linguistic references. Indeed, once we consider such extra-textual antecedents, the borderline between grammatical and discourse anaphora seems much less sharp. If discourse topics behave as highly accessible antecedents at the sentence level as well, then the division between intra- and extra-grammaticality is perhaps artificial from the point of the linguistic coding system. In no language is this problem clearer than in Chinese. We turn now to examine zero subject phenomena in Chinese.

6.2 Zero subjects: Focus on Chinese

Rizzi (1982) has drawn a distinction between well-formedness conditions on pro drop and interpretation procedures. Indeed, although pro drop occurrences are often constrained by considerations of interpretation, namely Recoverability through AGR, this does not always seem to be the case. Chinese (and Korean) allow zero subjects despite the non-existence of any inflection. I would like to argue that in fact, zero subject occurrences are always sensitive to interpretative considerations, occurring only when Recoverability is possible. The only reason why Chinese-type zero subjects seem to ignore such constraints is the GB tendency to deny non-linguistic or non-sentential elements any role in anaphora. I would argue that all zero subject phenomena are cases of an extremely high degree of antecedent Accessibility. Such high Accessibility can be achieved through linguistic means (a rich AGR, a matrix antecedent), but it can also be established on the basis of a previously mentioned topic, even when the antecedent is located outside the S domain. Non-linguistic discourse entities of appropriately high Accessibility are therefore also legitimate antecedents for a zero subject.

The status of Chinese (and Korean) pro has received a few analyses recently, all within the GB framework. The first proposal is Huang (1984), who claims that pro may be of two

kinds: variables left by fronted elements (zero-topics or relativized NPs), or 'true' empty pronominals, which are restricted to embedded clauses, where they are interpreted by what Huang calls a General Control Rule. This rule determines that an empty pronominal is co-indexed with the closest nominal element. Note that this immediately rules out zero pros in object positions of embedded clauses, for the closest nominal element would be the embedded subject, which, if co-indexed with the embedded object would violate condition B, forbidding local co-indexing for pronouns. Borer (1985) proposes to alter Huang's analysis in view of the Hebrew data presented above, where matrix and embedded pros seem to behave differently. Since the Hebrew data is accounted for by an inherited indexing through AGR, Borer hypothesizes an abstract anaphoric AGR node for Chinese. It is then obvious why 'only' embedded subjects can be *pro*. While AGR can be identified by a matrix argument, it can only transmit its indexing to the subject, since only subjects are co-indexed with AGR. Matrix pros, on the other hand, are claimed to be topic-controlled, and are not at all treated by Borer, who accepts Huang's analysis on this.

This separation between a discourse-bound zero subject, which Huang classifies as a variable, and a 'true' pronominal, which despite its feature of [+ pronominal] must be subject to a control principle, is not only against the spirit of Accessibility theory, it has also been argued against on empirical grounds. It seems that the neat division between topic-bound variables and controlled free pronominals is not so clear-cut as Huang had conceived. For instance, probably all of the subject-object asymmetries alluded to in the literature (see Huang 1984, as well as Henry 1986), which support both Huang's and Borer's analyses, are more apparent than real. They seem to boil down to the problem of imagining the appropriate context.¹⁵ Borer's justification for her AGR hypothesis in Chinese is drastically weakened (though certainly not refuted) in view of examples such as the following, quoted by Xu and Langendoen (1985):¹⁶

[19] *Zhangsan* said you saw *pro*.

Xu and Langendoen conclude that 'there is no subject-object asymmetry in the Binding of empty categories in Chinese' (p.26). *Pro* in the above sentence can be co-indexed with the subject matrix, though it can equally well refer to a discourse determined antecedent. We shall not treat such examples since we are limiting the discussion to zero subjects (though in terms of Accessibility theory, such a separation is rather artificial and

uncalled-for). Accessibility theory can easily account for the relative rarity of zero objects by noting the unmarked tendency to codify topics – the primary candidates to be realized as zeros – as subjects.

Xu (1986) argues that Chinese has only one type of *pro*. Unlike conventional empty categories (*PRO*, trace, Italian-type *pro*), however, it is unspecified as to the features [anaphor; pronominal]. Thus, it can either be discourse or matrix bound.¹⁷ In fact, the distinction between discourse-bound zero subjects, said to require a ‘special’ context, and embedded bound zero subjects, said to occur in ‘neutral’ contexts, is false, I claim. There is nothing extraordinarily constructed about topic bound zero subject sentences. Note that Chinese zero subjects can also be co-indexed with linguistic antecedents which do not C-command them, and they can take split antecedents as well (the following is Xu’s [37]):

[20] *John* tell *Mary* \emptyset tomorrow see movie.

John told Mary (they) would go to the movies tomorrow.

However, argues Xu, although *pro* seems to behave as a true pronominal since it can pick up its reference from positions inside or outside the sentence, it is not equivalent to an overt pronoun. As predicted by Accessibility theory, no zero form can be equivalent to an overt form within the same language/register. Xu notes that *pro* can occur in existential sentences though an overt pronoun cannot, and that backwards anaphora is restricted to *pros*. Henry (1986) quotes similar judgements. The same is true when the antecedent is a quantified NP and the anaphor read as bound. In [b] below (Xu’s [46]) the pronoun is necessarily not bound by the quantified expression, while in [a] (Xu’s [44]) *pro* is bound to it:¹⁸

- [21] a Every man wish \emptyset can happy.
 (Everybody wishes that (he) can be happy.)
 b Every man wishes he can happy.
 (Everybody wishes that he can be happy.)

The only overt form bindable by a quantified NP is the reflexive, argues Xu (in note 14). Overt pronouns cannot fulfil that function in Chinese.

The general picture that emerges from Xu’s data is that zero subjects in Chinese are grammatically much less constrained. Pragmatic and specific contextual considerations determine whether a given zero is linguistically or non-linguistically bound. It should be noted that this very same point had already been

argued by Li and Thompson (1979). While it remains to be seen whether Xu's pro unification is a feasible step within the grammar, its pragmatic implications are certainly in agreement with Accessibility theory. However, I suggest that the seemingly unrestricted distribution of Chinese zero subjects is more apparent than real. Classified according to Accessibility, it is not the case that 'pro', i.e. zero, has no inherent features, as Xu claims. Its inherent feature, I suggest, is [+extremely high Accessibility]. In a non-pro drop language this necessarily translates to being an anaphor, subject to Binding Principle A, but in a Chinese-type language, this is not necessarily so. The double function of zero subjects is simply an artefact of the insistence on a distinction between linguistic and non-linguistic antecedents. If, on the other hand, we attach a very high level of Accessibility marking to a (Chinese) zero, then its intra- and extra-textual uses will not appear as different as they are made out to be by current theories. The Accessibility claim is that high Accessibility can be established either by relying on an intra-domain linguistic antecedent, or by relying on an extremely salient non-C-commanding / non-sentential / non-linguistic antecedent. The subject-object asymmetries noticed by all are due, then, to the tendency to encode salient discourse entities (mainly discourse topics) as grammatical subjects, rather than objects. This accounts for the statistics offered by Chen (1984), as quoted by Cullen and Harlow (1986), to the effect that over 75 per cent of Chinese zeros are subjects / topics, less than 20 per cent are direct objects, and just over 5 per cent are indirect objects.

Chinese optional vs. obligatory choices regarding zeros vs. full pronouns are also in line with Accessibility theory. We have mainly alluded to obligatory zero preferences above, but optional cases governed by the Accessibility principles are also to be found. Henry (1986) notes the following contrast, where, across a sentence boundary, zero necessarily refers to the more salient of the previous sentence potential antecedents (the topic), while a pronoun is freer:

- [22] a *Old Zhang_i* always help *Old Li_j*. $\emptyset_{i/*}$ feels that is ought SUB.
(Old Zhang always helps Old Li. He feels that is his duty.)
- b *Old Zhang_i* always help *Old Li_j*. *He_{i/j}* feels that is ought SUB.
(Old Zhang always helps Old Li. He feels that is his duty.)

Cullen and Harlow (1986) in effect demonstrate that clause connectivity also dictates zero/pronoun choices in Chinese. Though the examples they quote are presented in order to motivate certain syntactic configurations for Chinese correlatives, they can be used to show the relevance of clause relations to Accessibility Marker choice. Chinese correlatives are marked by a discontinuous Correlative Marker (CM), each element appearing in a different clause. However, depending on the position these markers hold within each clause, zero/pronoun choices are made with respect to the second clause subject. The facts are as follows (though not every CM manifests all possible structures):

Table 6.3 Zero/pronoun distribution in Chinese correlatives

<i>Context</i>	<i>Subject form</i>
1 Subject CM . . . Subject CM . . . :	obligatory zero
2 CM Subject . . . Subject CM . . . :	optional zero/pronoun
3 Subject CM . . . CM Subject . . . :	optional zero/pronoun
4 CM Subject . . . CM Subject . . . :	preferred pronoun

Cullen and Harlow propose to account for the obligatory zero in structure (1) by positing a conjoined VP rather than S configuration. That may very well be true, but I suggest that the pattern underlying the distribution in Table 6.3 can account for more than the obligatory zero of structure (1). I believe it is quite plausible to assume that CMs fulfil a different syntactic function when initial and when non-initial. It is often the case that what appears to be a sentence connective in sentence-initial position serves as a sentential adverb in non-initial position. This is true for English *then*, as well as many Hebrew connectives discussed in Ariel (1985a). If we examine Table 6.3 again with this distinction in mind, the pattern that emerges is that zero is obligatory when no sentence connectives occur, while a pronoun is preferred when both clauses are prefaced by a connective. The choice is freer when only one of the CMs occurs in clause-initial position. Now, since the structural variations entail no semantic difference – the clauses are still explicitly marked as cause-effect, contrast, etc. – the only difference between the connective and the adverbial functions is that the connective delimits each of the clauses, emphasizing their separateness. In line with our Unity criterion, then, the distributional facts of Table 6.3 are motivated.

Summing up the Chinese data, and extending them to a general characterization of zero subjects, it seems that the most

inherent feature of a truly zero subject is that it marks extremely high Accessibility. This, in Chinese, though not perhaps in English, translates to include deictic references as well. However, one should not draw the conclusion that Chinese zero subjects actually represent two remarkably different uses, nor that they mark a relatively low degree of Accessibility, equal perhaps to the English demonstrative forms, for example. The fact that the Chinese zero can refer deictically does not automatically render it a significantly lower Accessibility Marker. A careful examination of which discourse entities legitimize such zeros will, no doubt, show that such deictic references are severely restricted.¹⁹ Gundel (1980) hypothesizes that pro drops are always governed by a topic constraint. This corroborates the finding for Hebrew, where discourse Saliency also seemed to play a role parallel to that played by linguistic antecedents.

We end our discussion of zero subjects with a short reference to two more languages. Berber seems to us to allow an intermediate degree of zero subject freedom. Indeed, the role of Recoverability in licensing zero subjects comes out very clearly in Berber. Agreement is not the only legitimizing source for zero subjects in Berber. Based on data presented in Ouhalla (1987), Berber basically allows zero subjects whenever AGR is rich enough (in effect, to the exclusion of present tense third-person copular sentences), but, what is perhaps surprising, it allows zero subjects to occur in zero copular sentences which have a predicative noun inflected for number and gender (though not person, of course). Thus the [a] examples allow zero subjects, even though the masculine form (*mazigh*, in [aii]) is actually unmarked, but [b] does not, since the PP (*gi taddart*) lacks any referential clues as to the missing subject:

- [23] a i \emptyset d - t - i +mazigh +n +t.
 Prt. Fem. -Pl. -Berber- Pl. - Fem.
 (They) (fem. pl.) are Berbers.
 ii \emptyset d +a +mazigh.
 Prt. Sg. Berber.
 (He) (sg. msc.) is a Berber.
- b * \emptyset gi taddart.
 in the-house.
 (He) is in the house.

Berber therefore manifests yet another in-between situation. Zero subjects are not as free as in Chinese, but they are freer than in Hebrew or Italian. The crucial point for Accessibility is that

Recoverability possibilities are at work here too, though AGR is not involved. I do not have any natural data for Berber, but Accessibility theory also predicts that zero subject occurrences are crucially dependent on antecedent availability, so that zero subjects in copular sentences as in [a] above should be less common than rich AGR-dependent zero subjects, since a rich AGR contains more information (person). Such zero subjects are, therefore, predicted to be severely restricted to extremely salient antecedents.

Byrne (1985), discussing Saramaccan *pro*, presents us with a potentially complementary language to English. Like English, Saramaccan normally lacks *pro* drop, but unlike English, which allows such zero subjects for extremely salient discourse entities, Saramaccan chooses to relax the prohibition under different circumstances – in embedded clauses.²⁰ Thus, when a zero pronoun occurs in an embedded clause it is necessarily anaphoric to the matrix subject. No disjoint reference is possible here. To use Borer's terminology, Saramaccan has only an anaphoric AGR. In Accessibility terms, its AGR is 'poor', hence marking extremely high Accessibility, which in this language is perhaps translatable only to linguistic material Accessibility.²¹

I should like to summarize the claims argued for in Chapter 6. My first point concerning zero subjects was that they do not constitute a unified phenomenon. What seems to be a zero (subject) marker in fact consists of different Accessibility Markers, varying from one language to another as well as within a single language. Instead of analysing the zero subjects themselves as the Accessibility Marker, we should consider the so-called zero subjects' licensors as the relevant Accessibility Markers. These include AGR forms in varying degrees of Informativeness, Rigidity, and Attenuation, as opposed to true zeros, as in Chinese, where the antecedent must be extremely salient. The distributional patterns of the various markers, it was argued, follow from the degree of Accessibility associated with them.

A second claim has been that contrary to GB assumptions, the antecedents of High Accessibility Markers can be either linguistic or non-linguistic. In fact, the borderline of linguistic-non-linguistic antecedenthood seems to be an obstacle, at least in typological discussions of anaphoric relations, since it prevents us from realizing that linguistic and non-linguistic factors function quite similarly as far as anaphora is concerned. It is not the case that any discourse entity is a legitimate antecedent for High Accessibility Markers allowed to refer deictically. Only a highly restricted number of salient discourse entities (topics, speaker,

Sentence-level anaphora

addressee) serve for such deictic references. If we take zeros (and to a lesser extent poor AGR types too) to mark extremely high Accessibility, then whether the source of Saliency is linguistic (C-command, minimal syntactic domain) or non-linguistic (discourse Prominence) is immaterial. In other words, the condition imposed on all extremely High Accessibility Markers is that the mental representations they evoke be highly accessible to the addressee. The source for this status of high Accessibility is irrelevant, although languages do differ with regard to what this source may be in the unmarked case.

Clause-linkage and anaphoric marking

We have hardly referred to the question of Unity in Part I, because we mostly discussed anaphoric dependencies between adjacent, fully independent sentences for the most part. Unity was only seen to be operative across larger units than the sentence – change of world, frame, point of view, or discourse topic. Such drastic changes are intuitive enough, and presumably do not require any special elaboration. However, when sentence-level anaphora is involved, the question of Unity arises on a much smaller scale, relating to a less obvious notion – the degree of connectivity between various sentential components. We should therefore clarify what it is that we mean by the Unity criterion before we move on to accounting for actual findings relying on degree of connectivity. A natural candidate constituting the functional component whose degree of cohesion is to be measured is the minimal clause. In fact, the relevant processing unit supported in the late 1960s and early 1970s was the clause (see Bever *et al.* 1969; Carroll and Bever 1976; Fodor *et al.* 1974). The thesis was that syntactic structure, on the basis of which semantic interpretation can be performed, is only retained for a very short period of time. Hence, utterances are ‘chunked’ into processing units – clauses – each processed, interpreted, and sent into semantic memory separately and consecutively.¹

The end of the 1970s saw a change in the rigid definition of what constitutes an appropriate processing unit. Some suggested that the relevant unit might be smaller or larger than the clause, depending on the potential unit length, for example (Carroll *et al.* 1978). Thus, very short clauses may be kept in short-term memory longer, while extremely long clauses may have to be divided up and processed in a few chunks. More relevant for our discussion is the recognition that the principle operative in chunking is not necessarily totally dependent on the syntactic

analysis. Specifically, Flores d'Arcais (1978), Carroll *et al.* (1978), and Marslen-Wilson *et al.* (1978) have argued that the crucial factor in determining processing unit boundaries is relative semantic completeness. Thus, while the *because* phrase is a syntactic clause in both [a] and [b] below, it is relatively less of an informationally complete interpretative unit in [b]:

- [1] a Because Noga cannot resist sweets, she bought a whole load of them.
- b Because she cannot resist them, Noga bought a whole load of sweets.

In order to interpret the *because* clause in [b], one would have to delay the interpretation of the two pronouns in it until the second clause has been processed. Such a structure, then, manifests a considerable clause dependency.

Experiments have indeed supported the relevance of chunking of functionally completed strings. When asked to perform some task (rhyme or category monitoring), subjects were faster if the timing of the task coincided with clause boundaries, but only if the clause was of the functionally complete type. Clauses low in semantic completeness were not facilitated by clause boundary tasks. In deciding whether a certain string is a functionally complete unit, Carroll *et al.* (1978) suggest that people use formal (rather than contextual) cues, the famous N-V-N strategy, but also the presence or lack of tense marking and subjects in nominalizations. Flores d'Arcais (1978) proposes an even greater sensitivity. He refers to differences in clause connectivity as affecting unit closure. These differences do not simply differentiate between dependent and independent clauses. They reflect a whole array of dependency strengths. Note the following example (his [9]), where the relation between the initial embedded clause and the matrix is rather weak, while the two embedded clauses are much more strongly connected to each other:

- [2] [Because John was so tired], [that he fell asleep], [Mary prepared a cup of coffee].

The experiments performed by Flores d'Arcais support the view that 'when the dependency between two clauses is rather strong, there is more residual availability of surface information of the first clause during processing of the second' (p.181).

I prefer this last formulation of Flores d'Arcais over the stronger claims regarding closure units briefly mentioned above. I believe that it is not necessary to accept the general conclusion offered by such researchers, namely that the only minimal

closure unit in language processing is the clause, in order to appreciate the significance of the findings they produced. It is quite plausible to hypothesize under a Parallel Distributed Processing model that degrees of activation of material vary quite considerably, and that one of the relevant factors involved, the one relevant for the discussion in this chapter, is clause boundary (see again the Introduction and note 1 to this chapter). While the clause may not be the only or the most minimal unit of closure, it is quite clear from the psychological experiments such as those mentioned above that it does affect the availability of material as a source for interpreting further linguistic forms.

I would like to argue that anaphoric relations are marked by different Accessibility Markers, according to what the relation between the two clauses is taken to be. In other words, the more dependent a clause is, the higher the Accessibility Marker chosen as anaphor, for a speaker relies on a relatively high availability of the antecedent to the addressee, even in cases of true (first-mention) backwards anaphora, when the antecedent does not become available to the addressee until the next clause is uttered. Though all initial anaphors, to be interpreted via later linguistic material, rather than via previous utterances, can reasonably be argued to actually create the dependency relation, my claim is that the anaphoric expression chosen for this dependency marking is not at all accidental. Given higher dependency, higher Accessibility Markers are chosen. Note, however, that though cohesion relations between clauses are necessarily symmetrical, i.e. each clause is highly connected to the other, dependency-related preferences of Accessibility Markers may still be affected by linear ordering. Thus, dependency of initial clauses on subsequent ones is probably always more costly in terms of processing and may call for special strategies (see section 7.22 below). Keeping constant the linear ordering between antecedent and anaphor, the dependency thesis is that, given two adjacent clauses anaphorically related, anaphor choice will vary with the clause relations. Adjacent independent sentences, conjoined sentences, and matrix plus embedded clause dictate different options. The more separate clauses (independent sentences) may even use a proper name, an extremely Low Accessibility Marker. Conjoined sentences would typically use pronouns (in English), while embedded clauses may use a zero, depending on the matrix to supply the antecedent (e.g. infinitivals, relative clauses in English).

But the distinctions drawn by various natural languages are much more minute than the crude three-way distinction

Sentence-level anaphora

mentioned above. Silverstein (1976:163) offers the following hierarchy of clause–clause logical relations (his [110]):

[3] Silverstein's Hierarchy of Clause–Clause Relations:

- a Possessive
- b Habitual Actor
- c Relative Clause (marking definite reference)
- d Purposive Complement
- e Desire Complement
- f Indirect Discourse Complement
- g Temporal Adverbial Clause
- h If-Then
- i Disjunction
- j Conjunction
- k Clause Sequence (sequitur)
- l Clause Sequence (non-sequitur)

The strength of the link increases the higher the construct is in the above hierarchy. At the bottom we have adjacent sentences not even semantically related [l], followed by syntactically independent but semantically related sentences [k]. The top group [a–c] actually contains various complex NPs, while the middle group presents a graded linkage between clauses, starting with embedded ones at the top [d–l], and ending with symmetrically conjoined clauses [i,j]. In fact, Silverstein states that where a language chooses to grammaticalize the above relations as embeddings, etc. is to some extent language-specific, but the probability of a nominalization, the degree of formal distinctness from an unmarked clause, and the markedness of the connection increase as one goes up the hierarchy.

Silverstein predicts that languages use different co-reference markings for various kinds of clause linkages. The universal he proposes is that 'If a language uses a special form for co-reference relations over a logical connexion at a certain point, it will use at least that mechanism for everything above, and possibly even more elaborate formal distinctions' (p.163). It is somewhat difficult to see what Silverstein could have meant by the universal just quoted. It is not clear what it means to use 'at least that mechanism'. While pronouns and lower Accessibility Markers, such as definite descriptions and proper names, serve for co-reference among the bottom clause types, zero is common for the top relations (relative clauses, and desire complements, which are 'Equi' verbs quite often). To render Silverstein's universal coherent, I suggest we interpret it as implying that the higher the construction on the hierarchy the more grammaticalized, and in that respect more

complex perhaps, the co-reference marking strategy.

Foley and Van Valin (1983) further develop Silverstein's idea of clause linkages and their affect on reference tracking mechanisms. Foley and Van Valin distinguish between junctures (i.e. the joining together of any sentential components) creating sentences sharing all core and peripheral arguments, junctures in which only peripheral arguments such as sentential adverbs are shared, and junctures which permit each component to even have its own peripheral arguments, i.e. they only share those elements above the juncture level. With respect to sentences, this would be the semantic connective, presumably. In addition to this differentiation as to clause linkage, argue Foley and Van Valin, the method of joining together the various junctures may imply different levels of connectedness: co-ordination, subordination and co-subordination. To see the differences, note that in conjunctions, each conjunct often carries its own tense (though this is not always true – see Foley and Van Valin's examples from Barai) and illocutionary force. Conjuncts are most 'sentential', and have a large degree of independence. Subordinate clauses, on the other hand, are less 'sentential'. They cannot have an illocutionary force separate from their matrix, though they need not share other arguments. Co-subordination creates the least 'sentential' component. Such clauses not only do not carry an independent illocutionary force, they necessarily also lack some core argument, depending on the matrix to supply it. It necessarily shares the operators of the clause it is co-subordinated to. Foley and Van Valin propose, for example, to distinguish between passivizable and non-passivizable *that* complements, assuming that this difference in degree of nominalization reflects a different embedding relation. Nominalizations obviously constitute less of an independent sentence. Adverbial clauses are still less linked than any *that* complement. Foley and Van Valin then suggest that Silverstein's basically semantic hierarchy is echoed by a syntactic bondedness hierarchy in languages.

A simplified version of their Syntactic Bondedness Hierarchy is presented below (based on their Figure 11:267):

Sentence-level anaphora

[4] Foley and Van Valin's Syntactic Bondedness Hierarchy

Strongest bondedness

▲ Various verb serializations (sharing argument(s), illocutionary force, and tense).

Core subordinations (gerunds and nominalizations, i.e. clauses stripped of all their peripheral operators).

Core Co-ordination ('raising to object').

Peripheral co-subordination (Switch-Reference structures, verb-phrasal conjunctions, sharing tense and illocutionary force).

Peripheral subordination (adverbs and *that*-clauses).

▼ Peripheral co-ordination (sharing the connective only).

Weakest bondedness

To exemplify the relevance of the above for English, note the following examples, again arranged from the strongest to the weakest bondedness:

[5] Exemplifying Foley and Van Valin's Bondedness Hierarchy

Strongest bondedness

▲ a Paul sat [playing his guitar for hours.

b i Max's losing the election] surprised everyone.

ii That Louise will arrive in London tomorrow] was reported by Max.

c i Philip believes [Doreen to have tickled the poodle.

ii Fred got [John to wash his car.

d Max went to the store [and bought some beer.

e i Because John kissed her], Mary burst into tears.

ii It seems [that Fred has been elected treasurer again.

iii The vet told Lucy [that her pet wombat would recover.

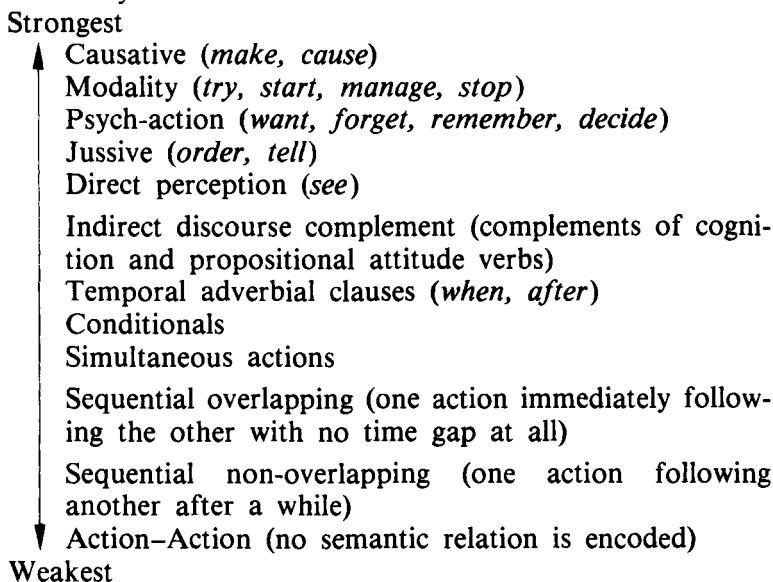
iv Abigail persuaded Lance [that she had not gone out with Rudy.

▼ f Make yourself at home, [and I'll fix us a snack.

Weakest bondedness

Further expanding the semantic hierarchy proposed by Silverstein (1976), Foley and Van Valin suggest the following Interclausal Semantic Relations Hierarchy:

[6] Foley and Van Valin's Interclausal Semantic Relations Hierarchy:



Foley and Van Valin do not claim that there should be a one-to-one correspondence between the syntactic hierarchy [4] and the semantic hierarchy [6]. Though the general grammaticalization patterns should not grossly violate the above (e.g. by systematically codifying the looser semantic connections by the highly bonded syntactic structures), a language may codify certain semantic relations by more than one syntactic construction, and conversely too, it may identically codify various semantic relations. Indeed, a quick look at the English examples in [5] shows this rather clearly.

Although ours is certainly not an attempt to support all sections of the above hierarchy (but see Foley and Van Valin 1983), we have supplied a rather detailed list of the constructions they make reference to. This was primarily done in order to show where the constructions that we do later discuss figure on the cohesion scale (high, intermediate, or low cohesion). Secondly, although we leave it to future research, our claim is that many more anaphoric properties than those we mention below should be correlated with the above scales. An obvious example that comes to mind is PRO, characteristic of only the higher constructions on the scales above. In the following sections, we shall see that reference to the degree of clause linkage is necessary in order to make correct predictions regarding possible anaphoric relations in a variety of structures. In

other words, the nature of the bond between the matrix Predicate and the dependent clause may be tighter or looser, and this, in turn, may be grammaticalized. Thus, causative complements tend to share an argument (*Noga made Jill happy*), while complements of verbs of cognition tend to be more independent (*know / think that . . .*). Parallel differences in the dependent clause argument connection to the matrix verb may affect the clause dependency, and hence its anaphoric possibilities. Perhaps the best example showing the crucial role of clause connectivity in reference tracking (to borrow Foley and Van Valin's term) can be seen in Switch-Reference systems, where it is not clear that what have been traditionally classified as Switch-Reference markers are not actually various sentential connectives on the basis of which specific anaphoric relations are inferred. We begin with a discussion of Switch-Reference systems (section 7.1), to be followed by sections on Resumptive Pronouns (7.21) and backwards anaphora (7.22).

7.1 Clause-linkage and Switch-Reference systems

Canonical Switch-Reference (henceforth S-R) systems involve some verbal affixation said to mark either same reference (henceforth SS), or different reference (henceforth DS), usually of the subject, less commonly of topics or agents. In a few cases, however, the marker is an independent morpheme, often carrying in addition some semantic meaning such as temporal or other logical relations. The marking clause (where the S-R marker occurs) is the more dependent clause, even if the clauses are syntactically conjoined (see Comrie 1983). The unmarked case is for the marking (dependent) clause to precede the independent one, but even when the independent one precedes, the marking remains on the dependent one. By calling various similar marking systems, prevalent almost exclusively in verb-final languages, Switch-Reference systems, researchers have in effect stated the status they attribute to such marking systems, i.e. that of a reference tracking device (to use Foley and Van Valin's (1983) term). Haiman and Munro's (1983b:xi) introduction to a collection of articles on the topic (Haiman and Munro 1983a), specifically states that 'the function of S-R systems is to avoid ambiguity of reference'.

Both Givón (1983a) and Foley and Van Valin (1983) simply incorporate such systems into their more general account of reference tracking mechanisms in discourse. Indeed, in congruity with the pragmatic motivation attributed to S-R systems, one

finds languages (Eskimo, Gokana) where S-R marking is restricted to third persons, where ambiguities are in fact more likely to arise. Also, Foley and Van Valin find that there are languages where it is the argument's Saliency which determines whether or not it is the one to be marked as the same or different in reference. As befits a system devised for pragmatic purposes, the NP argument traced throughout is in such languages not fixed by some grammatical definition (subject, for example), but rather, by contextual factors establishing which are the most prominent arguments in the two clauses under discussion. Thus, in the following example from Barai (see Foley and Van Valin 1983:350), the second clause is marked by an SS marker in [a] since the first clause subject is indefinite (hence, New and not yet registered in the addressee's memory and thus ignored in reference tracking), while in [b] a DS occurs since the two prominent NP arguments here (*the firestick* and *he*) are disjoint in reference:

- [7] a A firestick bit him and he died.
b The firestick bit him and he died.

A more critical reading of the data offered in such research raises some doubts whether the dubbing of such marking systems as reference tracking systems is indeed appropriate. So many factors seemingly unrelated to questions of anaphora are involved, that before we attempt to incorporate SS and DS into our Accessibility marking hierarchy, we should address the more general question of whether or not such markers are to be analysed as Accessibility Markers at all. Haiman (1983) raises the hardest question, namely, how come a marker modifying an NP in the next clause is affixed to the verb. Other questions that come to mind are: why does the marking consistently occur in the dependent clause? Why does linear ordering play no role? Why are S-R markings characteristic of verb-final languages? Why do some so-called reference markers carry additional semantic meanings? Why are S-R markers restricted to certain structures but not others? Why is S-R marking maintained when disambiguation is not at all a problem? Why is SS almost invariably less complex than DS, given a difference in formal markedness? Why is DS sometimes not interpreted as disjoint in reference, permitting co-referential readings? Why do some systems mark co-referent arguments carrying different semantic roles (agent vs. undergoer, for example) as if they were disjoint in reference?

Judging by the historical source of such markers, wherever this

Sentence-level anaphora

is indicated by the researchers, it seems to me that so-called S-R systems develop (at least) from two main sources, only one of which gives rise to what are undoubtedly Accessibility Markers. Many have noticed that while SS may be realized by \emptyset , DS is often marked by some agreement marker (Haiman and Munro 1983b; Comrie 1983; Haiman 1983). Also, SS markers may actually be reduced DS forms, or both may originate from deictics (Jacobsen 1983). Agreement markers and deictics are obvious candidates for being Accessibility Markers. In fact, once we view such S-R markers as Accessibility Markers, it is clear why SS is the more attenuated of the two. SS by definition marks a more highly accessible antecedent (it appears in the adjacent clause), and hence receives less coding. More importantly, while SS is always interpreted as co-referent to the matrix argument, DS is not necessarily disjoint from it, since all it marks is that the antecedent is less accessible. In most cases this is interpreted to imply disjoint references since the more 'economical' SS marker is also available, but when it is not, as in languages where a change in role (agent vs. undergoer, for instance) prevents the occurrence of an SS,² DS is not necessarily disjoint in reference.

Such distributional facts are not drastically different from other phenomena previously alluded to above, where some version of an 'Avoid Pronoun' principle is at work. When the antecedent is highly salient, a speaker is to prefer the poorer form (\emptyset , reduced AGR, etc.). When the antecedent is less than extremely accessible, fuller forms are to be preferred. In fact, note that it is not rare to find other differences automatically accompanying the difference between an SS and a DS choice. The quoted sentences above from Barai differ not only with respect to the S-R markers. Note the more detailed transcription below of the exact same examples:

[8] a fu miane sak +i +na barone.
3sg. firestick bite -3sg- SS die.
(A firestick bit him and he died.)

b miane ije fu sak +i +mo fu barone.
Firestick Definite 3sg. bite -3sg -DS 3sg. die.

It is remarkable that while in [a], where an SS occurs, the subject of the second clause is empty, in [b], where a DS occurs, the second clause subject is an overt pronoun (*fu*). Hermon (1985) states that while in Imbabura Quechua no overt agreement occurs in dependent clauses, other dialects use it with their DS markers, though not with their SS markers. Givón (1983d) claims

that in Lango the S-R marking system arose out of a contrast between an agreement marker (for SS), and an independent pronoun (for DS). This supports the analysis proposed by Givón and by this book that (some) S-R marking is merely another highly grammaticalized form of Accessibility marking. This would explain why in some languages DS is marked by an agreement marker, while in others (Lango), it is the SS which is marked by the agreement marker. What is constant is the relative difference in Accessibility between DS and SS markers. It is always the poorer form which is reserved for SS.

S-R systems of the above type are easily seen as conforming to Accessibility marking theory. SSs are simply higher Accessibility Markers than DSs. Put in GB terms, we may declare SSs to be anaphors obeying some locality condition, while DSs are to be taken as pronominals, necessarily free within a Given domain. This is precisely Finer's (1985) suggestion. Finer believes that S-R systems are not at all pragmatic systems aimed at helping addressees determine referential indices of NP arguments. A major argument in his favour is the usual lack of S-R marking in co-ordinate structures. While a pragmatic system may very well find it useful to mark (non-)co-reference relations in conjoined clauses, argues Finer, the fact that such markings are rare supports a grammatical analysis relying on a (modified) C-command relation which, indeed, may not hold across conjoined clauses. The details of the proposal are not crucial. Following Aoun's (1985) distinction between A and A' Binding, Finer suggests that SS markers are A' bound, since he places S-R markers in Comp.³

However, as noticed by Stirling (1986), Finer's analysis has quite a few problems. S-R systems are not invariably limited to locality domains amenable to a (relaxed) C-command relation holding between an antecedent and an anaphor. The following, admittedly a marked example from Tonkawa (see Foley and Van Valin 1983:353, based on Hoijer 1949), shows two conjoined clauses marked by an S-R marker:

- [9] In that bush hide-Imperative and-SS me-watch-Imperative.
(Hide in that bush! and watch me!)

Haiman and Munro (1983b) claim that though rarely so, some languages even allow an S-R relation to hold between two clauses separated by another intervening clause. Another problem that arises for a rigid GB type of solution is that though unmarked S-R markings concern subjects, this is not always the case. Being a non-subject, an NP cannot transmit its index via AGR, a

crucial step in Finer's analysis. Also, Foley and Van Valin present quite a few examples of languages which S-R mark by an SS only if both subjects are agents, for example. Thus, a passive subject, even when co-referent with an active subject will get marked by a DS marker. Such cases are impossible according to Finer's analysis. Last, Finer's analysis, as indeed all anaphor-pronominal distinctions, imply obligatory co-reference/disjoint reference. While this is the unmarked interpretation, it is not invariably so.

Rather than totally abandon Finer's proposal, I propose to subject only some, possibly just a minority of S-R markers, to an anaphor-pronominal analysis. Those markers which lack any other semantic meaning, especially those which conventionally serve as Accessibility Markers since they codify referential clues (basically, agreement markers, deictics, pronouns), should be viewed as anaphors/pronominals. As such, however, they require the notion of domain of application to be slightly relaxed, a requirement by no means unique to S-R Accessibility Markers. The S-R marking systems appropriately characterized by Finer merely constitute one more type of example demonstrating that the relevant domain for Binding does not divide crucial contexts into the minimal Governing Category as opposed to 'everywhere else'. For the majority of S-R marking systems, however, I suggest that they are probably better not analysed as Accessibility Markers or as S-R markers at all. The same vs. different reference readings such clauses seem to force derive not from the primary function of the marker. Rather, it is conventionally inferred from the type of relation holding between the antecedent and the anaphor clauses. These so-called S-R markers are actually sentential complementizers or connectives. As such, they are, of course, quite irrelevant to our research. They are important, however, in supporting our claim that Accessibility is (partly) dependent on the nature of the relation between the anaphor and the antecedent clauses. It is their indirect affect on reference assignment which is crucial to our thesis.

Haiman (1983) actually suggests such a characterization for DSs in a few Papuan languages. Disjoint reference is deduced on the basis of the lack of cohesion between the marking clause and the reference clause. Stirling (1986) reaches the same conclusion in view of the many examples where so-called S-R markers carry additional meanings. She proposes that a DS marks some shift in 'the rhetorical space, a shift out of a cohesive chain of events'. Only in this way can we explain many of the puzzling questions posed above regarding other seemingly unrelated

factors playing a role in SS and DS markings respectively. For instance, the fact that it is always the more dependent clause that receives the S-R is now motivated, since the S-R marker is actually the embedding marker. The same goes for the apparent restriction to verb-final languages when it is affixed to verbs. Verbs in such languages simply happen to occur at clause boundaries. Some languages have lexical requirements for either a DS or an SS. Given that complements relate to matrix verbs in different ways, and given that languages may freeze complementizer requirements of verbs (cf. English *that* vs. *for*), such unmotivated idiosyncrasies in a reference tracking mechanism become perfectly understandable features of sentential operators. Also, the non-automatic assignment of disjoint reference despite the explicit DS marking (as in Latin, Angatiha, Daga – see Haiman and Munro 1983b:xiv) can be accounted for. Relatively less cohesive clauses may still contain co-referential participants, and given contextual indications such readings are indeed possible. DSs, therefore, are probably better seen as markers of indifferent reference, claim Haiman and Munro (*ibid.*). If, however, we view (certain) S-R markers as high vs. low cohesion markers, no reference need be made to co-reference possibilities. These will follow from the nature of the clausal link, combined with other Relevance-based considerations.

In order to make this proposal clearer, I suggest we briefly digress to English, and consider a not too different phenomenon. Many of the purported S-R markers convey a meaning of time adverbials. The affect of English *while* on referring expression choice can, therefore, be illustrative of the phenomenon in S-R systems. Haegeman (1984) notes a distinction between two types of final-sentence *while* clauses. The first is uttered with no break preceding it, and a repeated reference by a full nominal is unnatural. The second is preceded by a break and does allow a second reference to an entity by a full nominal:

- [10] a **John* did all the housework while *John's* wife was ill.
(Haegeman 1984:[2a])
b *John* will study Linguistics, while *John's* father used to
teach literature. (Haegeman 1984:[1a])

Note that the meaning of *while* actually changes, and whereas the first *while* is indeed a time adverbial, the second functions almost as co-ordinating conjunction. Haegeman suggests that we treat the first type of *while* as an S-adverbial and the second as an E-adverbial. As such, she blocks the matrix subject in the second example from C-commanding the second *John*, and she

can thus motivate the difference in the acceptability of having a second name in the *while* clause. Now, in analogy to this difference and the proposed syntactic solution, we can suggest that a similar difference between subordinate conjunctions is translated into two separate morphemes in S-R languages.

It is not my goal in this book to determine precisely which S-R markers are genuine Accessibility Markers/S-R markers and which are actually sentential markers pointing to relatively high or low cohesion between the two clauses involved. Quite possibly, some of these sentential markers have by now totally grammaticalized, either no longer serving in the complementizer role, or else no longer allowing for any optionality, simultaneously and obligatorily marking a certain semantic relation as well as a certain (non-)co-reference pattern. For such markers we predict that SS should always accompany high cohesion, whereas DS should accompany lower cohesive degrees. I list below a few examples where the connection between SS and higher dependency and DS and lower dependency is doubtless. We leave open the question of which of these is better accounted for as Accessibility Markers in a more flexible analysis in the spirit of Finer (1985), and which are to receive an analysis as sentential markers, which in turn tend to affect reference possibilities.

Siroi (a New Guinea language) distinguishes between *ina* (DS) and *le* (SS), both of which are conjunctions. Also concomitant with the above distinction is the obligatory occurrence of dependent verbs, specifically marked as such, with the SS marker (*le*). The DS marker (*ina*), on the other hand, obligatorily occurs with independent verbs, inflected for tense, number, and person. In Barai, which seems to have different markers for SS and DS readings of identical semantic relations (simultaneous or sequential activities), the marker is never the sole referential clue. Thus, in DS cases the two clauses have different overt subjects, and in SS cases one clause typically lacks an overt subject (the following are taken from Foley and Van Valin 1983:341, 342):

- [11] a 3pl food eat-Simultaneous / SS \emptyset talk say.
They were eating and talking.
b 3pl food eat-Simultaneous / DS *1pl* talk say.
While they were eating, we were talking.
- [12] a 3sg garden make-Sequential / SS \emptyset fence tie.
He_i made a garden and then \emptyset _i tied a fence.
b 3sg garden make-Sequential / DS 3sg fence tie.
He_i made a garden, and then he_j tied a fence.

Note that when the subject of both clauses is a third person (the main cause for ambiguity), as in [12], the so-called SS reading arises when the second clause lacks an overt pronoun. The DS reading arises when the second clause has an overt pronoun of its own. Similarly, the examples cited by McLendon (1987), presumably a representative sample of S-R markers in actual Eastern Pomo discourse, reveal the same pattern. While zero subjects occur rather freely without any preceding S-R marker, DS and SS markers are clearly differentiated with respect to the occurrence of an overt form following them. Out of eleven SS markers, eight were followed by a zero subject, while three were followed by a 'poor', i.e. less informative pronominal form (*khi*). Out of thirteen DS markers, none was followed by a zero subject, seven contained full nominals, and six contained various pronouns and a deictic.

Longacre (as cited in Haiman and Munro 1983b) notes that whereas SS markers often originate from temporal successive markers, DS markers originate as temporal overlap markers. As explanation for this, he proposes the natural assumption that the same person is not likely to perform two activities at the same time.⁴ In Latin, notes Givón (1983e), DS is obligatorily linked to more independent clauses, whereas SS is linked to more matrix-dependent clauses, though both occur in non-finite clauses. Based on a number of Papuan languages, Haiman (1983:107) points out that in some languages the DS morpheme is either a conjunction or a nominalizer. This is not accidental, it is claimed, since both 'signal a lack of cohesion between the clause in which they occur and the clause with which it is joined'. Stirling (1986) notes that in Lenakel a large gap in time between the two activities depicted by the two clauses necessitates a DS. Thus, the following is ungrammatical:⁵

- [13] *Magau 3sg-Perfect-come (and) Future-SS-eat.
Magau has come and will eat (later).

In order to express the above proposition with the co-reference reading, a DS must be employed:

- [14] Magau 3sg-Perfect-come (and) Future-3sg [= DS]-eat.
Magau has come and will eat (later).

Another interesting case pointed out by Stirling is the following from Eastern Pomo, where again co-reference is read despite the DS marking. The most obvious explanation for this is that this marker is in fact not a marker of disjoint reference so much as of less cohesion, due, in this case, to the high transitivity of

Sentence-level anaphora

the first clause as opposed to the low transitivity of the second (most researchers prefer to phrase the explanation for the DS occurrence in such sentences slightly differently, i.e. referring to the agentive first subject as opposed to the passive subject in the second):

[15] Subject (Agent) 1sg took-a-bath-DS, Subject (Passive) 1st
sg got-sick.

Just because I took a bath, I got sick.

Last, in Imbabura Quechua (see Hermon 1985) the S-R system can actually be defined as distinguishing between a highly cohesive clause linkage as opposed to a looser clause linkage. Thus, quite a few transparency phenomena co-occur with the so-called SS markers, while opaqueness among the two clauses characterizes structures taking DS markers.

Summing up, it is not as surprising as it may first appear that complementizers and reference markers should be realized by one marker, nor that (certain) complementizers should give rise to (certain) reference markers, nor for that matter that such complementizers should have been confused with S-R / Accessibility Markers by so many researchers. Foley and Van Valin (1983) only connect zero anaphora with a high degree of bondedness between the clauses containing the anaphor and the antecedent. The Accessibility claim is more general: the higher the bond, the higher the Accessibility Marker used to signal co-reference, the looser the tie, the lower the Accessibility Marker used in order to establish co-reference. Hence, the nature of the relation between the clauses may be highly indicative of what the permitted or plausible anaphoric relations between the NP arguments of the two clauses are. S-R systems, note Foley and Van Valin, tend to be restricted to what they term peripheral co-subordination (see again the discussion above), which conjoins as dependent a relatively independent clause. Such clauses are typically neither embedded nor conjoined. Indeed, it is precisely with regard to such linkings that inferences are not so clear-cut, given the intermediate degree of tightness. While embedded clauses manifest a high degree of dependence (favouring an anaphoric reading), conjoined sentences manifest a relatively high degree of independence (favouring a disjoint reference reading). Hence the need to specifically mark such intermediately tied sentences as to co-reference possibilities. The need to signal such potential anaphoric relations is particularly obvious in Ancash Quechua (see Cole 1983). In this dialect of Quechua, there are two SS markers, as opposed to one DS marker. Consider now the

formal difference in markedness between the two SS markers: *r* vs. *shpa*. It turns out that the unmarked member (*r*) is used when the two clauses 'are viewed as related' (pp.1–15). The longer form is reserved for clauses depicting unrelated events. Indeed, under such circumstances it is co-reference rather than non-co-reference between the NP arguments which is marked.

Finally, while I cannot at this stage proceed to determine the appropriate analysis for each purported S-R system, I have suggested that S-R marking systems are divided into two quite different types of mechanisms (with potential borderline cases). The first is a genuine Accessibility marking system composed of markers containing direct clues as to the antecedent identity. For such markers a (modified) Finer type analysis seems the right account. The majority of the S-R systems reported on in the literature seem not to be S-R or Accessibility Markers at all. Most probably, such markers are sentential markers pointing to different degrees of cohesion between the clauses, hence conventionally implying certain anaphoric patterns. Since these are not, then, Accessibility Markers, their only relevance for this book is the strong tie they point to between clause linkage and anaphoric interpretations. In other words, so-called S-R systems are probably the best example supporting the claim that the Accessibility of the antecedent to the anaphor is (at least partially) determined by the nature of the relation between the antecedent and the anaphor clauses – our Unity criterion. The lesson taught by these so-called S-R marking systems, therefore, is that the relevant domains for anaphoric expressions to find antecedents (even binders, where this is fully grammaticalized, as in the Finer cases) are at least to some extent semantically, even pragmatically determined.

7.2 Clause-linkage and definite NP anaphora

S-R systems are found in rather unfamiliar languages. This section will exemplify similar phenomena in more familiar languages with regard to issues that have been more extensively dealt with in the literature, Resumptive Pronouns and backwards anaphora. I shall argue that (non-)anaphoric interpretations follow exactly the same pattern as in S-R systems. In other words, in order to generate an anaphoric reading, highly cohesive clauses must contain relatively High Accessibility Markers, while more loosely connected clauses employ relatively lower Accessibility Markers. Some of these findings support specific syntactic analyses, ones which enable or block C-

command relations between the putative antecedents and anaphors, others are not (at the moment) captured within the syntax and possibly should not be syntactically represented since they are purely semantic or pragmatic. Such syntactic implications are well beyond the scope of this book. My purpose is served by demonstrating the great sensitivity of anaphora to degree of cohesion. Whether or not this is also accompanied by a structural differentiation is not relevant to our discussion. We begin with Resumptive Pronouns (section 7.21), to be followed by a short section on backwards anaphora (7.22).

7.21 Clause-linkage and Resumptive Pronouns

Resumptive Pronouns have been argued to function just like gaps by Engdahl (1979) and Maling and Zaenen (1982). Such a classification is, of course, very much against the spirit of Accessibility theory, which attributes to the marker form a crucial role in determining its function. Doron (1982), however, convincingly argues for the view that Resumptive Pronouns are indeed syntactically and semantically pronouns, to be distinguished from gaps. She supports this conclusion based on both distributional facts and semantic interpretations distinguishing the two. Sells (1984) shares Doron's conclusion. He in fact diagnoses a relevant domain in which a Resumptive Pronoun, as befits a pronoun, must be free, i.e. 'its case domain' (p.240). The details of Doron's and Sells's suggestions will not be further discussed. The crucial point is that Resumptive Pronouns can be aligned with pronouns rather than with gaps. However, since they then seem to be in contrastive distribution with gaps in those languages which allow them, we will attempt to show that when optionally present, Resumptive Pronouns appear in those environments predicted by Accessibility theory.

An environment predicted to play a role in the decision as to whether to use a Resumptive Pronoun or not is Distance. Indeed, while [16a] below is quite ungrammatical, the ban on subject Resumptive Pronouns turns out to be a ban against a topmost S subject Resumptive Pronoun. Thus [16b], containing a subject Resumptive Pronoun, is considerably better than [16a]:

- [16] a ha + makhela she + Ø/*hi hirshima oti be + yoter. . .
The chorus that Ø/ it impressed me most . . .
b ha + makhela she + dana shamaa she + raxel amra
The chorus that Dana heard that Rachel said
she + hi kibla pras . . .
that it got (a) prize . . .

Similarly, the direct object resumptive pronoun in [17b] is much more natural than the one in [17a]:

- [17] a ?shoshana hi ha +isha she +nili ohevet ota.
Shoshana is the- woman that Nilly loves her.
- b shoshana hi ha +isha she +dani siper she+
Shoshana is the -woman that Danny said that
moshe rixel she +nili ohevet ota.
Moses gossiped that Nilly loves her.

Other languages too distinguish between highest S and more embedded 'extraction' sites. McCloskey (1979) claims that a subject gap is only obligatory for the highest embedded S in Irish. The same applies to Welsh and Swahili (from Sells 1984). Engdahl (1982) finds that in Swedish a Resumptive Pronoun must be separated from its antecedent by two clauses.

Borer (1984) notices another relevant factor in the gap/Resumptive Pronoun distribution which, I believe, demonstrates the function of Accessibility theory in relative clauses. Borer convincingly argues that subject gaps in relative clauses are not to be equated with the available pro drop option in Hebrew. Thus, while present tense verbs (no person AGR) dictate that highest embedded S relative clause subjects be realized as gaps just as other inflections do, pro drop is (quite) unavailable for such poor agreement markers (see again Chapter 6). Where movement is blocked, however, pro drop may play a crucial role. Thus, she attributes the following difference to pro drop options in Hebrew (her [58] and [59]):

- [18] a ha +isha she +raiti et ha +namer she+ Ø
The woman that I-saw acc. the tiger that Ø
gidla . . .
raised-fem . . .
- b *ha +isha she +raiti et ha +namer she-
The woman that I-saw acc. the tiger that
Ø megadelet . . .
Ø raises-fem . . .

Note, however, that if Accessibility theory is functional in structures containing relative clauses, the AGR Accessibility Marker can and should be considered as an additional alternative to the gap vs. Resumptive Pronoun choice in relative clauses. The following example, an elaboration of Borer's examples, shows that a third-person AGR is not quite rich enough for a distant anaphoric relation:

Sentence-level anaphora

- [19] ha- isha she- moshe siper li she- david xashav
The woman that Moses told me that David thought
be- taut she- raa et ha- namer she- ??Ø/
by mistake that (he) saw acc. the- tiger that Ø/
hi gidla be- acma . . .
she raised by herself . . .

In other words, the Accessibility claim is that since AGR is a higher Accessibility Marker than a full (Resumptive) Pronoun, it occurs in relatively more accessible environments (hence the difference between [18a] and [19]). Since it is a lower Accessibility Marker than a gap, it can occur in some 'island violations' where a true zero cannot ([18a] vs. [18b]). Unable to consider 'optional' choices, syntacticians must conclude that the differences noted above are due to the difference between movement on the one hand (subject gaps are obligatory) and non-movement on the other hand (subject Resumptive Pronouns occur), as well as legitimate vs. illegitimate pro drop environments (see Borer 1984). But if that is the case, what is to prevent topmost S subject Resumptive Pronouns? There is nothing to prevent their generation in a non-movement strategy. Certainly pro drop is not obligatory and cannot therefore be relied upon to block such sentences. Borer proposes an obligatory abstract relative operator movement in the case of subjects in order to account for the occurrence of both obligatory and optional gaps. I propose to interpret the same data with the conclusion that the observed complementary distribution between the movement and the non-movement strategies in relative clause formation (Borer 1984:246) is due to Accessibility considerations. So is the decision whether or not to pro drop, whether in relative clauses, as we have seen here, or anywhere else, as we have seen in Chapter 6 above. A high availability of antecedents to anaphors calls for the use of High Accessibility Markers (gap / AGR) whether due to movement or to pro drop, whereas a lower availability calls for the use of a relatively lower Accessibility Marker (a Resumptive Pronoun), in this case, the result of a non-movement strategy.

Another curious fact, first noted by Doron (1982), is that topmost S resumptive subjects can optionally occur in topicalized clauses, although they are usually unacceptable in regular relative clauses:

- [20] ha- talmida she- rak et ha- marca le- balshanut
The student who only acc. the-lecturer in Linguistics
hi exshehu sovelet . . .
she somehow stands . . .
(The student_i who only the Linguistics lecturer_j she_i can
somehow stand.)

Borer explains such subject occurrences by positing the Hebrew topic node to the right of the Comp node, creating another maximal projection which blocks Binding by the abstract operator she assumes, thus creating a 'free' domain for the subject Resumptive Pronoun. I propose to account for such possibilities by the Distance and Antecedent Saliency criteria. Since modern Hebrew is primarily an SVO language, subject Resumptive Pronouns directly follow their heads, hence rendering the use of the Resumptive Pronoun quite useless in view of the High Accessibility of the antecedent. Its occurrence is only justified in emphatic contexts. However, we should expect that any intervening material between the head and the subject should also create an appropriate context for the lower Accessibility Marker. For us, then, deeper embeddings of relative clauses and topicalization within the relative clause have the same effect in principle, lowering the Accessibility of the antecedent.⁶ A second factor favouring the use of the Resumptive Pronoun in topicalized relative clauses is related to the Saliency of the antecedent (the head). I suggest that since the topicalized NP naturally receives high Prominence, the high Saliency of the head is somewhat overshadowed. Hence the need to use a lower Accessibility Marker in order to retrieve it.

It is not clear that the additional stipulations Borer makes in order to account for the occurrence of subject Resumptive Pronouns in topicalized relative clauses are necessary. Compare also the full acceptability of the Resumptive Pronoun in [20] above, with [21] below, both of which contain topicalized relative clauses:

- [21] ?ha-yalda ha-xamuda she+ tamid hi meaxeret . . .
The girl the-sweet who always she is-late . . .
(The sweet girl who [she] is always late.)

I suspect no syntactic account can differentiate between [20] and [21] above, where Distance affects the acceptability of a Resumptive Pronoun. It is the Accessibility difference which best accounts for the use or avoidance of Resumptive Pronouns.

Another factor contributing to a relative separation and hence

opaqueness between a dependent clause and its matrix is the presence of a complementizer. Semantically empty complementizers do not establish any semantic connection among the matrix and the embedded clause. Rather, they mark the separation between them. Indeed, we find a correlation between overt complementizer occurrence and Resumptive Pronouns. Swedish dictates that Resumptive Pronouns be used when Comp contains non-deletable material (Engdahl 1982), and Igbo distinguishes between [+tense, +complementizer] relative clauses, where Resumptive Pronouns are obligatory, and [-complementizer] relative clauses, which require gaps (see Sells 1984:214–15).

A last contrastive environment we will consider with respect to the presence or absence of Resumptive Pronouns is the restrictive vs. non-restrictive readings of relative clauses (henceforth RRC and NRRC, respectively). Judging by our Unity criterion we should expect NRRCs to provide a better incentive for the employment of Resumptive Pronouns than RRCs. Whereas NRRC heads are (in the unmarked case) independent referring expressions, RRC heads are uninterpretable without their restrictive clauses. Only together do they form one (complex) referring expression, while all the relative clause does in the case of an NRRC is modify the independently established entity represented by the head. The relative independence of the NRRC is supported by its opaqueness to matrix negation and quantifier scope. Also, unlike RRCs, NRRCs can and often do introduce New information, which, if highly Dominant (in the sense of Erteschik-Shir and Lappin 1979), can turn the syntactic main-subordinate relations into pragmatic equality in status, or even render the syntactically embedded relative clause into the Dominant proposition (see Ziv 1975). Intonationally (and in English punctuationally as well), NRRCs differ from RRCs in that they call for a break before the relative clause is uttered, again pointing to the relative separation.

Indeed, Hebrew optional Resumptive Pronouns sound much more natural in NRRCs than in RRCs. Note the following contrast:

- [22] a ha +gvarim ha +yisraelim she +ha +cava sholeax
The men the Israeli that the army sends
Ø/? otam le +hilaxem hem geza shovenisti
them to fight are race Chauvinist
bi + myuxad.
especially.
(The Israeli men that the army sends to fight are an especially chauvinistic lot.)

- b ha +gvarim ha +yisraelim, she +ha +cava sholeax
 The men the Israeli, that the army sends
 Ø/ otam le +hilaxem, hem geza shuvenisti
 them to fight, are race Chauvinist
 bi+myuxad.
 especially.
 ([The] Israeli men, whom the army sends to fight, are
 an especially chauvinistic lot.)⁷

Note that a technical solution, making the node attachment different in the two relative clause types will not do, since we have already seen above that RRCs can take Resumptive Pronouns, and [22b] shows that NRRCs can marginally contain gaps. In fact, subject resumptive pronouns are probably as marginal in NRRCs as they are in RRCs.⁸

We end our discussion of Resumptive Pronouns with semantic rather than syntactic/distributional distinctions between gaps and Resumptive Pronouns. A purported semantic difference between Resumptive Pronouns and gaps (see Doron 1982; Sells 1984) is the referential/specific/de re readings Resumptive Pronouns give rise to, as opposed to the (also) non-referential/conceptual/de dicto readings of gaps. Note the following pair from Doron (her examples [49] and [50]):

- [23] a dani yimca et ha +isha she +hu
 Danny will-find acc. the woman that he
 mexapes -.
 is-looking for .
- b dani yimca et ha +isha she +hu
 Danny will-find acc. the woman that he
 mexapes ota.
 is-looking for her.

The [b] example with the Resumptive Pronoun, claims Doron, only has a de re reading, whereas [a] may have either a de dicto or a de re reading. While the intuition about sentences of this type is certainly correct, one cannot simply associate pronouns with referential readings. Pronouns do enter 'conceptual-level' anaphoric relations, to use Sells' term, as in the following example:

- [24] Jane is looking for a secretary. *He* must type extremely fast.

Moreover, even resumptive pronouns can have a non-referential reading:

Sentence-level anaphora

- [25] ani mexapeset gever she +im yesaxek li
 I am-looking-for man that if will-play to-me
 ha +mazel ha +paam, be +nigud le +xameshet
 the luck this time, in contrast to the five of
 nisuy ha +kodmim, uxal le +ehov oto
 my-marriages the previous, I-will-be-able to love *him*
 kol xayay.
 all my-life.
 (I am looking for a man who, if I am lucky this time,
 unlike my five previous marriages, I will be able to love
 [him] all my life.)

Note that a clearly non-referential Resumptive Pronoun, unacceptable in example [a] below, becomes substantially better once we front the Resumptive Pronoun:

- [26] a higia ha +zman she +navin
 arrived the -time that we-should understand
 she+pashut eyn be+ nimca ha +muamad
 that simply there-is-not in existence the candidate
 ha +ideali she +anaxnu mexapsim ?? oto.
 the ideal that we are-looking-for him.
 (It is about time that we realized that the ideal
 candidate we are looking for [him] does not exist.)
- b higia ha +zman she+ navin
 arrived the -time that we-should understand
 she +pashut eyn be +nimca ha+ muamad
 that simply there-is-not in existence the candidate
 ha +ideali she +oto anaxnu mexapsim.
 the ideal that him we are-looking-for.

Any solution, then, which simply blocks non-referential readings for Resumptive Pronouns cannot be acceptable. [25] above is easily explained via Accessibility. Resumptive Pronouns always improve when distant from their heads. But still, why the difference noted in [23] and [26]? Why does a Resumptive Pronoun improve when fronted? Looked at from the point of view of Accessibility, we have an optional zero vs. pronoun choice in many of these cases (object Resumptive Pronouns are only obligatory with 'island violations'). This means that when the antecedent is highly accessible preference should be given to the zero option. Such choices are of course reminiscent of Montalbetti's (1984) OPC. Adopting Reinhart's (1983a) suggestion with regard to bound anaphora vs. co-reference, namely that a speaker should always opt for the former when co-

reference is intended and the grammar allows it, we can say that a gap is always to be preferred over a Resumptive Pronoun because a gap is obligatorily interpreted as dependent, whereas a pronoun in a relative clause may well be independently referential. Now, when a speaker chooses an option in conflict with this principle, continues Reinhart, an implicature is generated that a special added meaning is intended. In our case, then, addressees should be looking for an interpretation that is (more) available with a pronoun than with a gap. Emptier, High Accessibility forms, we shall argue in Part III, unlike fuller, i.e. lower Accessibility forms, are not necessarily interpreted as presuppositional, i.e. independently assumed to exist. We may therefore conclude that an addressee draws a (necessarily) referential reading for the Resumptive Pronoun because he knows that the speaker could have used a leaner, less presuppositional form, namely zero. However, once the Resumptive Pronoun occurrence is otherwise justified, either because the antecedent is less than extremely accessible (due to Distance or to 'islandhood'), or because it was topicalized (zeros, obviously, cannot be overtly topicalized) then a purely anaphoric reading is possible with a Resumptive Pronoun.

7.22 Clause-linkage and backwards anaphora

Syntactically, co-reference is allowed provided a pronoun does not C-command its antecedent (Reinhart 1981b). In unmarked cases of backwards anaphora, this principle is fulfilled when the pronoun occurs in a highly cohesive unit *vis-à-vis* the unit in which the antecedent appears (an initial embedded clause, a preposed PP). A problem arises with conjoined sentences, where no C-command relations hold, which means that backwards anaphora should be acceptable. In fact, it is usually not at all acceptable. However, exceptions to both claims can be found. The [a] example below (originally McCray's 1980 example [4b]) shows a C-command violation, while [b] (Mittwoch's 1983 example [7]) shows a legitimate anaphoric relation between a pronoun and an antecedent across a conjunction:⁹

- [27] a *She* was told that if she wanted to get anywhere in this dog-eat-dog world, *Mary* was going to have to start stepping on some people.
- b I don't believe *it*, but John swears *he had a premonition of the accident*.

To motivate both types of examples, researchers have used a pragmatic definition of subordination, arguing that such backwards anaphora cases are limited to sentences where the pronoun occurs in the pragmatically non-Dominant clause, while the antecedent forms part of the Dominant clause (McCray's reference to 'Semantic Peak' probably corresponds to the concept of Dominance, as defined by Erteschik-Shir and Lappin 1979). Reinhart (1981a) has claimed that backwards anaphora is restricted to sentence topics, and Biller-Lappin (1983) has proposed that backwards anaphora must obey both conditions.

Thus, even though the pronoun in [27a] actually C-commands its antecedent, since the antecedent is in the Dominant clause, it gains in Prominence over the pronoun, and hence the claim is that the pronoun can be referentially dependent on it. The antecedent's being a sentence topic enhances its Saliency too. Note, however, that the Distance criterion is at work here too. Compare [27a] above with the following, where the antecedent indeed occurs in the Dominant clause (as shown by the naturalness of the later reference to the Dominant clause), but the Distance between the pronoun and the antecedent is very small:

- [28] ??Apparently, *she* was told that *Mary* will have to step over a few bodies in order to make it in this tough world. Would you agree with this grim prediction?

Indeed, it makes little sense that the Accessibility of the discourse entity corresponding to 'Mary' should be low enough at the point where the second reference to her is to be made, so the choice of a Low Accessibility Marker in [28] above is not justified. In [27a], on the other hand, a whole sentence separates between the first and the second references to 'Mary', by which time the Accessibility of the mental entity 'Mary' may have dropped.

I believe that Backgrounding in itself is insufficient as an account of backwards anaphora 'violations'. I suggest that, as mentioned above, length may sometimes play a role in determining sentential units, as some experiments have suggested when sentence processing procedures were examined.¹⁰ Natural data for the type of examples we are discussing have hardly been elicited, and all we can rely upon are our own intuitions.¹¹ Pending empirical evidence, I suggest that the distribution of such C-commanding co-referent pronouns is not in fact limited to contexts where there is some pragmatic dependency of the pronoun on the topic antecedent. Moreover, I believe the question posed with respect to examples such as McCray's has not

been the crucial one. It is only the occurrence of the full nominal that is in need of an explanation, not the backwards anaphora construction. And the presence of the full nominal should be legitimized by the same Accessibility factors we have assumed to operate in discourse anaphora. Fuller nominals mark relatively low Accessibility, and hence should appear where the entity is not highly accessible. Hence the importance of Distance. If, however, the Unity degree is loose enough to allow a reference to the same referent by a fuller form, then Distance should not play a crucial part. This seems to be the case in examples such as the following (McCray's [18]), where the extra stress establishes the Dominance and hence the lift from the direct control of the matrix clause, as McCray puts it. In fact, I am not sure I agree with McCray's judgement in this case, but I quote the example as she presents it anyway:

[29] The teacher warned *him* that *Walter* would HAVE to work harder.¹²

McCray also argues that asymmetrical conjoined clauses differ from symmetrical ones in their backwards anaphora possibilities. She proposes that the same pattern repeats itself, i.e. the pronoun can only precede if it occurs in the pragmatically subordinated clause. Note the following (McCray's example [21]):

- [30] a **She's* almost sixty-five, and *Mary* won't be hired by anyone.
b *She's* almost sixty-five, and therefore *Mary* won't be hired by anyone.

Bosch (1983), on the other hand, presents the following examples, contrasting symmetrical with asymmetrical conjoining. Where the conjuncts are symmetrical [a], backwards anaphora is indeed blocked. His [b] example, however, where the antecedent seems to occur in the added background clause, goes against the requirement on the pronoun clause being the dependent one:

- [31] a **He* lied to me and *John* betrayed me.
b *He* lied to me, and *John* was my friend.

We seem to have reached a contradiction. On the one hand, backwards anaphora is claimed to require the dependency of the pronoun clause on the antecedent clause, and on the other hand, [31b] shows that the pronoun can occur in the Dominant clause. Although I cannot back it up with firm empirical findings, I suggest that we actually have two types of backwards anaphora, each allowed under different circumstances. Dependency is only

crucial when the antecedent is a New entity. Only in these cases does the addressee actually rely on the antecedent in order to decipher the identity of the pronoun. Thus, when the antecedent is newly introduced into the discourse (Biller-Lappin (1983) argues that backwards anaphora is a conventional strategy to introduce New topics), a speaker has to make sure that the pronoun clause be dependent on the antecedent clause so that the interpretation of the pronoun can rely on material from the independent clause. However, when the entities form part of the discourse already, as is the case with McCray's and Bosch's examples, dependency is not needed at all. What determines whether a so-called backwards anaphora is acceptable or not is not different from the usual Accessibility considerations. Distance and low cohesion (as diagnosed by Bosch 1983) are, therefore, the determining factors. I suspect that the reason McCray diagnosed such cases as Dominant is that indeed a useful way to lower the high Unity level of embedded clauses is by making them Dominant. But I think that Dominance of embedded clauses is not directly responsible for the backwards anaphora. It only creates the necessary condition – relatively lower Unity than embedding, relatively higher Unity than that obtaining between symmetrically conjoined sentences. In fact, what these conditions allow for is not a backwards anaphora structure *per se*, but rather, a use of a full nominal form – a Low Accessibility Marker.

[32] below exemplifies a case in which a New referent is introduced. Hence, it necessarily requires clause dependency. The [33] pronouns, on the other hand, must refer to already introduced discourse entities, and the crucial point there is the relative separation of the two clauses.¹³ The example in [32] is taken from Carden (1978), who focuses on unpredictable, mostly first-mention entities referred to by backwards anaphora. Not surprisingly, I found no examples of the [33] type in his article, and am therefore quoting invented examples:

[32] When *she* was five years old, *a child of my acquaintance* announced a theory that she was inhabited by rabbits.
(*New York Times*, 11 June 1978, Carden's 1978:[12])

[33] a *She* was told that under no circumstances would *Mary* have to compromise herself.
b *He* lied to me, and *John* was my friend.

In order to see that our intuitions are that the example in [32] can introduce a New referent, while the [33] examples cannot, I

provide the following judgements of the very same sentences prefaced by some discourse break marker, signalling a total shift from the preceding discourse. As expected, the [33] examples ([b] and [c] below) are much less coherent:

- [34] a Let me read you a cute story someone wrote in today's paper: 'When *she* was five years old, *a child of my acquaintance* announced a theory that she was inhabited by rabbits' . . .
- b ??Sorry to interrupt you, but did you hear the good news? *She* was told that under no circumstances would *Mary* have to compromise herself.
- c ??You won't believe what I found out by chance today. *He* lied to me, and *John* was my friend.

My claim, then, is that only first-mention backwards anaphora cases require a highly cohesive relation with the antecedent unit (it need not always be a clause).¹⁴ It is no accident that Carden's examples show a highly restricted set of syntactic environments for first-mention pronouns in backwards anaphora sentences (Carden notes that the overwhelming majority consists of preposed genitives and embedded adverbial clauses). On the reasonable assumption that the sixteen first-mention backwards anaphora cases he cites are representative of his larger sample, it is revealing that thirteen of the pronouns (81.25 per cent) are in fact C-commanded by their antecedents. None C-command their antecedents. Continuing discourse referents, on the other hand, require quite the opposite context. Some separation between the pronoun and the antecedent domains is required for a Low Accessibility Marker to appear in the same sentence containing a previous reference to the same entity.¹⁵ As a matter of fact, such 'backwards anaphora' cases should probably not count as backwards anaphora at all. Whereas with the New backwards anaphora entities investigators have rightly attempted to account for why a speaker uses backwards rather than forwards anaphora, with respect to Given backwards anaphora entities, the relevant question is why a speaker refrains from a second reference by pronoun (see Bolinger 1979 for pragmatic proposals). I have suggested that an intermediate degree of dependence of the pronoun clause on the antecedent clause licenses 'backwards anaphora' of already accessible entities. It is the intermediate Unity (resulting from either asymmetric conjunctions, syntactic subordinations of Dominant material, or a relatively large Distance) which serves to create the right context for the repeated reference to be in full nominal form.

Sentence-level anaphora

When the entity is not Given from the previous discourse, however, a high degree of Unity becomes crucial, enabling the interpretative dependency of the pronoun on the full NP.

A further prediction we should therefore make is that in languages which manifest pronoun / AGR / zero alternations, preference will be assigned to using the emptier forms in backwards anaphora, especially when the antecedent is New. My intuitions are that this is in fact true for Hebrew, but I cannot as yet support it with actual examples. Other languages, however, have been claimed to only (or at least mainly) allow zeros rather than pronouns in backwards anaphora cases (Malayalam – Mohanan 1983, Chinese – Xu 1986). It is quite likely that this restriction was taken to hold for all backwards anaphora cases simply because syntacticians consider sentences out of context. Hence, it is possible that it was the New antecedent backwards anaphora cases which dictated their claim concerning zero preferences in such constructions. It remains to be seen whether continuing discourse entities which happen to occur in what is sententially a backwards anaphora structure are indeed subject to the zero constraint. Note the following example from Hebrew. I believe that a replacement of the zero pronoun with an overt pronoun sounds less natural, given that the entity referred to is indeed New:

- [35] rak leaxar she + Ø holid 40 yeladim me + arba
Only after that Ø begot 40 children from four
neshotav, gila ha + ikar ha + turki mehmet
his-wives, discovered the farmer the Turkish Mehmet
yavuz she + kayamim emcaey-menia.
Yavuz that there-are contraceptives.
(Only after he had begot 40 children from his four wives,
the Turkish farmer Mehmet Yavuz discovered that there
are contraceptives.)
(*Haaretz*, 14 January 88)

Indeed, the only examples with an overt pronoun in a backwards anaphora construction introducing a New referent were ones where pro drop is quite impossible, in present tense inflections (see Chapter 6 above).

Chapter 7 has focused on the importance of clause linkages in determining anaphoric options. Based on clause linkage arguments, initially proposed in Silverstein (1976) and Foley and Van Valin (1983), I have tried to argue that the tighter the cohesion between the clauses the more accessible antecedents can be to anaphoric expressions across the clause boundary. It then

leads to the natural conclusion that higher Accessibility Markers should be employed to signal anaphoric relations among members of a highly cohesive two-clause sentence, while relatively lower Accessibility Markers signal anaphoric relations when the two clauses involved are not tightly connected to each other.

S-R markers, I have argued, should be divided into two kinds. Those which are true Accessibility Markers manifest a distributional pattern crucially dependent on clause linkage type – SSs occurring in highly cohesive clauses, DSs in less tightly connected clauses. S-R markers which are not in effect Accessibility Markers (nor are they S-R markers, I have tried to argue) nonetheless attest to the importance of clause linkages in anaphora inferences. The same pattern emerges. Tighter connectives bias towards co-reference, looser connectives towards disjoint references. Resumptive Pronouns also provide support for the thesis that clause linkage is a crucial factor in the distribution of anaphoric expressions. The tendency to use Resumptive Pronouns in certain contexts but not in others (where some Distance separates between the head and the extracted site, where the relative clause is a Non-Restrictive Relative Clause, etc.) again shows that speakers prefer a pronoun, be it optionally or obligatorily, in less tightly related clauses. Last, first-mention (backwards anaphora) pronouns, which are indeed dependent on the matrix for their interpretation (unlike other cases of backwards anaphora) also require a high (syntactic) dependency of the pronoun clause on the antecedent clause. They also require a highly salient antecedent – the sentence topic. Continuing discourse entities, on the other hand, are quite different. They rely on a looser dependency for what is not in fact a true backwards anaphora to be appropriate. We then expect languages which have a zero / AGR / pronoun alternation to prefer the emptier forms especially when the antecedent is a New entity in a backwards anaphora construction.

While Chapter 7 focused on Saliency criteria (mainly the Unity factor) determining antecedent availability at a Given point in the discourse, Chapter 6 focused on the suggestion that three factors determine the degree of Accessibility a Given marker possesses: Informativity, Rigidity, and Attenuation. We can thus see that the very same factors play a role in discourse anaphora as in sentence-level anaphora. No matter how large the relevant domain is (the sentence, the discourse, the non-linguistic context), markers are always sensitive to the degree of Accessibility associated with the mental representation of the

Sentence-level anaphora

particular antecedent. Degree of Accessibility is (minimally) established based on the Antecedent Saliency and the extent to which the antecedent is related to the anaphoric expression. Antecedent Saliency is a function of both syntactic and non-syntactic aspects of the antecedent. Being a subject or a referential NP makes a potential antecedent a better candidate for providing the interpretation for an anaphoric expression. The same applies to NPs referring to agents, the discourse topic, salient discourse participants (speaker, addressee), etc. And these are relevant for inter-sentence as well as intra-sentential references, as we have seen in Parts I and II.

Unity is also crucial for both types of anaphora, although it translates somewhat differently in the two contexts. With respect to discourse anaphora, we, naturally, mentioned larger boundaries: paragraph boundary and shifts in discourse topic, point of view, frame, etc. Regarding sentence-level anaphora, I mainly relied on degree of clausal cohesion as determining Unity. Again, both syntactic factors (e.g. embeddings vs. conjunctions) and semantic/pragmatic ones establish what the degree of Unity is. Some connectives (mistakenly analysed as SS markers) mark a highly cohesive clause. Co-reference is then deduced. Other markers (some of the so-called DS markers) signal a lower degree of cohesion, in which case non-co-reference tends to be inferred.

Last, with respect to our claim that all Accessibility Markers are associated with specific degrees of Accessibility based on the criteria of Informativity, Rigidity, and Attenuation, we have seen that it applies both to discourse anaphoric expressions (proper names, definite descriptions, deictics, etc.) as well as to more restricted types of Accessibility Markers (full pronouns, cliticized pronouns, various AGR types, and true zero subjects). It is my deep belief that these criteria form the basis for the anaphor-pronominal-name distinction drawn by Binding theory, but I have not attempted to argue this point. Instead, I have mainly focused the discussion of sentence-level anaphoric expressions around optional preferences in the distributional patterns of these extremely High Accessibility Markers. The stronger claim must await further investigation.

Yet a few comments are in order as to how I see the role of Accessibility within the theory of grammar. It seems to me that the borderline distinguishing between the purely grammatical and the purely pragmatic cannot automatically be established. Note the following examples from Solan (1984), where stressing the anaphoric expression, which is supposed to reverse anaphoric relations (see Chapter 3), is not sufficient to overcome the

Binding rules. The following sentences are therefore ungrammatical:

- [36] a *The lawyers_i thought the client accused each OTHER_i.
b *John thought that Janet_i should represent HER_i.

At the same time we have seen that Accessibility does play a role in strictly grammatical facts. I have proposed that languages are restricted in how they can put to use their Accessibility Markers. A language can never license the use of a High Accessibility Marker (e.g. a degenerate AGR in Hebrew) in a context where it does not license the use of a lower Accessibility Marker (e.g. 'anaphoric' AGR in Hebrew).

However, this does not mean that the grammar-pragmatics borderline is necessarily abolished. Quite the contrary. If we adopt Kasher's (1976, 1982, 1989) and Sperber and Wilson's (1986) view of pragmatics, a phenomenon is pragmatic only if it is not specifically linguistic. Grice's (1975) 'be cooperative', Kasher's (1976, 1982) 'be rational', 'be polite', and Sperber and Wilson's (1986) 'be Relevant' are general behaviour patterns. Accessibility conventions, on the other hand, are specifically linguistic in that they are formulated over specific linguistic expressions and are therefore part and parcel of the grammar. Under one version of the Chomskyan view, where linguistic vs. non-linguistic, sentence vs. discourse, and licensing principles vs. principles governing optional choices all boil down to one and the same distinction, that of grammar vs. pragmatics, Accessibility theory does conflate the two. However, Asa Kasher (p.c.) has drawn my attention to a few passages in Chomsky (1980:59, 60), where Chomsky does seem to take the former position regarding the grammar-pragmatics division of labour. Following this Chomskyan view, Kasher (1989) proposes to distinguish between general pragmatics and linguistic pragmatics, a component within the grammar. Accessibility theory, then, belongs in linguistic pragmatics.

This page intentionally left blank

Part III

On the interaction of Accessibility with pragmatic and social factors

One of the most important contributions of the theory of Relevance advanced by Sperber and Wilson (1982, 1986) is its view of context. Rather than assume that when communicating a unique context is 'given', as is common practice in pragmatic analyses, Sperber and Wilson adopt an approach according to which the specific context is to be actively searched for. Thus, processing procedures employed in utterance comprehension are not carried out against a fixed, predetermined set of assumptions. Instead, they argue, a procedure for context search must be conducted simultaneously with the comprehension process.

That context should be taken into consideration when accounting for the full range of natural language phenomena is, of course, by now non-controversial. All pragmatic research has assumed that. Most pragmatists, however, have suggested local principles, tying grammatical forms, such as indexicals, cleft sentences, definite descriptions, existential sentences, etc., to specific contextual factors, in order to account for their actual distribution. Put into recent terminology, such pragmatists concentrated on the pragmatic component within the linguistic module. Sperber and Wilson have dubbed this methodology the 'code' approach to pragmatics, against which they argue (see especially Sperber and Wilson 1986:Ch.1). Grice's (1975) theory on the co-operative nature of conversation was the first to assign context a more general function. Unlike prevailing pragmatic practice, this proposal was not aimed at accounting for coded form-function correlations which are simply due to contextual factors. The context, according to Grice, serves as the basis on which a particular utterance gives rise to conversational implicatures. In other words, Grice argued that once the literal meaning of the utterance has been established, it combines with the context to generate additional, implicit messages. Such an approach is an attempt to tackle the pragmatic factors involved

in language processing, which are performed by our central system.

Sperber and Wilson (1982, 1986) extend the role of context even more than Grice. Using context is viewed as an obligatory, rather than an additional, optional part of utterance processing. It is claimed to influence literal interpretations as well. Most importantly for them, however, it is essential that utterances be evaluated against some context for the establishment of Relevance – Sperber and Wilson's proposal for an overall pragmatic principle governing natural language discourse. Having specifically *contextual* implications, i.e. ones deduced on the basis of some contextual assumption(s) combined with the proposition extracted from the processed utterance, is a necessary condition they impose on an utterance for it to be Relevant. Totally New information, unable to link up with any background context in order to generate contextual implications, is never considered Relevant.

However, although context is not seen as a predetermined, well-defined body of assumptions, and although in principle any piece of information can be employed by addressees in order to derive more and more contextual implications, context search is not at all accidental. Neither is it infinite. In order to account for the obviously fast mechanisms operating in natural language processing, Sperber and Wilson suggest that addressees opt for Optimal Relevance, rather than simply Relevance. Optimal Relevance takes into account processing costs. Thus, in consistency with the principle of Relevance, addressees draw out an adequate amount of contextual implications, investing as little as possible in achieving these effects. In other words, Optimal Relevance is defined in terms of cost (processing effort) against benefit (contextual implications).

It is this notion of Optimal Relevance which constrains the potentially infinite context search. It dictates that the process be fast and efficient. A reasonable way to go about it is to assume that some contexts should be preferred as candidates for serving as a basis for the derivation of contextual implications. Those assumptions which are extremely accessible to the addressee require less effort to implement than those which are accessible to lesser and lesser degrees. Thus, accessing information from long-term memory is, other things being equal, much more costly than accessing from short-term memory, where recent propositions are still stored. Also, accessing as background perceived information from the Physical Context of the speech event is relatively uncostly.¹

In Ariel (1988b) I have argued that a more comprehensive version of Accessibility theory (see also Ariel 1985a) can be seen to account for a speaker's guidance in context searches. Accessibility Markers actually cover a wider range of categories than we have discussed in this book, including accessible propositions and Predicates in addition to referential expressions. All of these can be marked by Accessibility Markers specialized as to different degrees of Accessibility, thus referring addressees to various degrees of memory activation, removing the need to simply consider potential contexts in their natural order of Accessibility (beginning with the previous utterance and proceeding to extend the context by considering utterances further away, assumptions on the current physical situation and Encyclopaedic Knowledge).

It should be emphasized that one of the original features of Relevance theory is that context is used to recover so-called literal meanings, as well as more indirect implications. That literal meanings, especially of indexicals, require contextual information is, of course, not in itself new. What is attractive about Relevance theory is that there is no longer a division into two consecutive processes, the first one being a search for the 'right' proposition, i.e. the one intended by the speaker, and the next one, an inferencing process, in fact generating contextual implications. Rather, the very determination of the propositional content is guided by the principle of Relevance. In other words, when considering *what* the proposition should be, addressees choose that interpretation most congruous with the requirement of Optimal Relevance. I suggest that this proposal is crucial for a proper account of reference assignments.

In Parts I and II, we have largely ignored the role of pragmatic considerations in reference determination. We assumed that each referring expression somehow has direct access to a specific conceptual address in memory. This is an over-simplification in at least three respects, which we intend to address in Part III. Firstly, there are many linguistic expressions which should equally well activate a number of memory items rather than a unique one (the problem of disambiguation, to be discussed in section 8.1). Secondly, there are many references in everyday conversations which are made to concepts which actually lack a specific memory representation. Such mental entities have to be created 'on the spot', via a deductive process relying on other available representations (inferred references, discussed in 8.2). Thirdly, speakers sometimes use referring expressions which may blatantly violate Accessibility theory

On the interaction of Accessibility

(e.g. epithets, references to minority members, the topic of Chapter 9). I will suggest that while Accessibility theory can easily be seen as a natural linguistic device aimed at aiding addressees to establish Relevance, it is the overall principle of Relevance which accounts for the phenomena listed above. One last issue which we have been ignoring throughout is presupposition. It is commonly assumed that definite NPs trigger an existential presupposition. In fact definite descriptions are defined as [+presuppositional]. Since I believe definite NPs are to be analysed as Accessibility Markers and not as presupposition-triggering expressions, section 8.3 will be dedicated to doing away with the notion of presupposition, relegating so-called presuppositional effects to inferences generated from the context.

The role of inferencing

The linguistic phenomena to be explained in this chapter crucially depend on the use of context. Assuming that it is Accessibility principles which guide addressees in referent retrievals, we still need to consider the context against which the utterance is processed, if only because no interpretation is complete until context has been taken into account. We therefore begin by highlighting those aspects of the context which are relevant for the discussion that follows. Considering the conventional 'geographic' three-way division of context-types, we should distinguish between an Encyclopaedic Knowledge Context, a Physical Context and an Immediate Discourse Context. Processing an item marked accessible against a certain context has significant implications for an addressee's interpretation. Each context supplies him with a different kind of quality of background, and hence, influences the contextual implications differently. In initial retrievals, I propose, the most general context, i.e. Encyclopaedic Knowledge, is to be preferred over the more restricted context where information on the physical situation is stored. The latter is, in turn, preferred over the Linguistic Context, i.e. where recent propositions are stored.

Note the following examples, mentioned already in the Introduction:

- [1] a *That woman over there* is very intelligent.
 b *Rachel* is very intelligent.
- [2] a There's this professor I met. *She's* very intelligent.
 b *That professor over there* is very intelligent.

Since the failure to use the [b] versions in the above examples is deemed unco-operative, even misleading, it seems that initial references are obligatorily geared towards maximizing context implications, ignoring processing costs.² In fact, I suggest that

On the interaction of Accessibility

the three contexts in [3] below are hierarchically structured in such a way that in the *unmarked* case, processing costs are lower on the right, higher on the left, but it is the left-hand side contexts which are richer and more promising in terms of contextual implications:

[3] Encyclopaedic Knowledge > Physical Situation >
Immediate Discourse

Our general Encyclopaedic Knowledge contains the most permanent, hence reliable, type of information. It is normally taken to be Binding, for it forms part of what is known by our 'belief system'. It is very rich, hence the kind most often contributing to the Relevance of incoming utterances, filling in gaps, enriching the literal interpretation with additional assumptions, thus enabling the addressee to derive long-range contextual implications. The two other contexts are extremely poor by comparison. The mental representation we have of the physical situation we are in is relatively uninformative and significantly less permanent. It is only stable as long as interlocutors do not move. Still, like our General Knowledge, this mental representation is taken to be 'real', equally accepted by all participants. Last, the Immediate Discourse Context is the most inferior context in this respect. It changes at an extremely rapid pace, and the material it represents is not necessarily accepted, i.e. the propositions are not necessarily Binding. From the point of view of belief formation, for a proposition to form part of our Encyclopaedic Knowledge it has to go through some 'screening'. Propositions which are part of the recent linguistic discourse have only the potential of being accepted as 'facts'; propositions which are physically perceivable are assumed to be *ad hoc* 'facts', but have only the potential of entering into a permanent state – our Encyclopaedic Knowledge store. They may be judged uninteresting, or unimportant, and thus discarded. Propositions which are part of our Encyclopaedic Knowledge meet both criteria.

These differences will be crucial in our account of presuppositional phenomena. Briefly, whereas I believe that only the cognitively defined Accessibility theory can explain a speaker's choice among referring expressions, only the pragmatic definition accounts for the full range of actual interpretations of Accessibility-marked material. These interpretations rely on contextual considerations which are independent of Accessibility. Material stored in long-term memory, for example, is taken to be a speaker's belief. Thus, since material which needs to be

retrieved from long-term memory is, naturally, marked as low in Accessibility, the overall interpretation of Low Accessibility Markers tends to be one that is Binding, i.e. presupposing existence. Similarly, objects from the physical surroundings are also presupposed to exist. It seems that natural conversationalists do not doubt the existence of the objects they can perceive. Hence, unmarked interpretations of material accessed from our representation of the Physical Context are Binding too. Only those entities retrieved from the non-Binding Linguistic Context may be interpreted as non-Binding. So-called cancelled presuppositions are therefore necessarily associated with entities retrieved from the Immediate Discourse Context, I will argue.

8.1 The use of context in reference resolutions

Given that both Accessibility marking conventions and pragmatic, i.e. Relevance-based considerations take part in a speaker's choice of Accessibility Markers and in an addressee's interpretation of them, we should address the question of the relation between Accessibility theory and Relevance. I propose that Accessibility and Relevance are not two independently motivated principles. Rather, whereas the quest for Relevance seems a reasonable hypothesis to assume about humans, abiding by Accessibility principles does not appear to be a goal in itself. Accessibility principles are *a means* to achieve efficient context searches. They are therefore best seen as a natural development of a set of conventions whose goal it is to aid the addressee when processing for Relevance. Note that by itself, Relevance predicts that a context search be conducted according to degree of context Accessibility, automatically giving priority to the more accessible context compatible with Optimal Relevance. Accessibility theory, however, offers a marking system which eliminates this default assumption in favour of a clearer instruction of the speaker to the addressee regarding 'where' to retrieve the background information required.

Though this is the general view I take, we need to see what happens in actual reference assignments. If, as suggested above, pragmatic considerations intervene in choice and interpretation of referring expressions, then what is the division of labour between Accessibility and Relevance? A good case in point is reference disambiguation. I therefore suggest we examine the mechanisms responsible for referential choices under conditions of ambiguity. This section, then, is dedicated to the role of context in ambiguous cases of reference resolutions. We will

argue that although the principle of Relevance is directly involved in such decisions, there is not in effect any clash between Relevance and Accessibility.

Sperber and Wilson (1986:Ch.4) suggest their 'Relevance' version of the 'top-down' process so often involved in interpretations in general, and in reference resolutions in particular. One important case where extra-sentential and possibly extra-linguistic factors are used is disambiguation. When we have a potentially ambiguous referential expression, *Jennifer*, the addressee being familiar with two people by that name, a decision must be reached. An addressee can decide that the speaker must have meant 'Jennifer Smith', say, rather than 'Jennifer O'hara', by considering the context most accessible to him. If that context can render the reference to a particular 'Jennifer' Relevant to him in a way the speaker could manifestly have foreseen, he can be sure that this is indeed the person the speaker had meant. Had she meant 'Jennifer O'hara' the speaker would have made it clear to him. She would have somehow prevented his picking 'Jennifer Smith'. In fact, this is what Accessibility theory does most of the time. The elimination of wrong choices, I have claimed, is achieved by the choice of the referring expression, which should signal to the addressee how accessible the intended mental entity is. In the case above, if 'Jennifer Smith' is more accessible than 'Jennifer O'hara', then only 'Jennifer Smith' should be referred to as *Jennifer*. The mental entity corresponding to 'Jennifer O'hara' would have been retrieved using a lower Accessibility Marker, a last name, a full name, or a first name modified by some description, etc.

But our expectations are not always fulfilled. Both Relevance and its conventionalized accessing theory – Accessibility theory – would lead us to hypothesize that the second *they* in [4] is anaphoric to the first *they*, or else, that it refers to *the guys with the laser cannon* In fact it refers to the authors of a comic-book, which Marslen-Wilson *et al.* (1982) asked a subject to narrate. [4] is the example they cite on p.362:

- [4] . . . and *they* go at it again . . . and the woman comes up . . . and *the guys with the laser cannon or whatever it is* come up . . . and . . . somewhere in there . . . *they* sort of left out a frame where The Thing has turned his eyes to the side for a second . . .

This is a true counter-example to Accessibility theory, and I suspect that it does indeed cost addressee processing time to cancel out the automatic assignment of the pronoun (a High

Accessibility Marker) to the topic at hand (the first *they*). Using Relevance, we can predict the difficulty in [4] (the strong contextual expectations encourage an intra-textual interpretation), but we can also account for the automatic solution all addressees come up with. Having strongly entertained the hypothesis that the second *they* refers to the protagonists of the story, addressees reach the word *frame*, which probably causes them to re-assess their previous assumptions. For our purposes, it does not matter at what stage precisely this realization occurs. The example is obviously quite exceptional, but the general point must be made that considerations of plausibility (who can 'leave out frames') do play a role in reference assignments.³

Many experiments have supported a view that plausibility considerations determine, at least to some extent, lexical item accessing in general (see Morton 1979 and references cited therein) and reference assignments in particular.⁴ Before we list a few of their constructed examples let us note the following real-life exchanges quoted by McConnell-Ginet (1979:71, examples [10], [11]):

- [5] a A: I've got to drive one of the kids to judo practice.
B: How long has he been taking judo?
A: He's a she. It's my daughter.
B: Oh, I'm sorry. I didn't know girls, I mean I didn't think . . . Oh, you know.
- b A: I talked to one of your students who is really worried about the exam.
B: What does she know about it?
A: It wasn't a she (laughing).
B: (Trying to pretend nothing had happened) So how did he find out what the exam was like?

Speakers B in the above made what seemed to them to be perfectly plausible inferences: Judo is for boys, being worried about exams is characteristic of female students. It is when these inferences fail that we can more readily appreciate all the automatic inferencing that underlies everyday conversations.

Psychologists have devoted quite a lot of research to inferred reference assignments. Their experiments have mainly concentrated on pronominal reference resolutions in cases where the first one or two sentences of a sequence introduces two potential antecedents, and the target sentence contains a pronoun, the referent of which has to be determined by the subject. Such potentially ambiguous cases are very much

dependent on plausibility assessments. Hirst and Brill (1980), for example, presented subjects with many such sequences, differing with respect to the plausibility of any one of the potential candidates to serve as the preferred antecedent for the pronoun. Their findings show that subjects were largely in agreement in their choices. They chose the preferred referent significantly more often than the non-preferred referent. They were also more likely to choose the preferred referent given a larger plausibility gap between the two candidates, as in the two cases cited below (Hirst and Brill 1980:174–5):

- [6] a Context:
Henry went to the party while *John* stayed at the store.
- b Target:
- i He *worked* with little enthusiasm.
 - ii He *danced* with some women.

Various versions of such experiments are commonly found in the psychological literature (see Garvey *et al.* 1974–5; Caramazza *et al.* 1977; Grober *et al.* 1978; Ehrlich 1980; Sanford and Garrod 1981; Wykes 1981; Garnham and Oakhill 1985, *inter alia*). Clark *et al.* (1983) argue a similar point about demonstrative references. They convincingly show how pointing is often hopelessly ambiguous, forcing addressees to choose the appropriate referent based on inferences they draw. For instance, having presented subjects with a picture of four watches, the experimenters asked the subjects to express an opinion about *this watch* as a gift for ‘Uncle George’ (described beforehand as a middle-aged, conservative, thrifty bachelor) or for ‘Cousin Amanda’ (described as a rich, young, modern jet-setter). Indeed, the referential choices subjects made were quite consistently complementary for these two ‘relatives’.

Inferencing is not an easy task for children (Wykes 1981), especially for the less-skilled comprehenders among them (Oakhill 1982; Oakhill and Yuill 1986), and it is costly in terms of processing time for adults (Caramazza *et al.* 1977; Hirst and Brill 1980; Garnham and Oakhill 1985). When in some reaction time experiments, subjects are asked to process sentences such as [a] below, it takes them longer than the processing of [b]:

- [7] a Peter lent ten pence to *Tom* because he was poor.
b Peter lent ten pence to *Liz* because she was poor.

It seems that the necessary inferencing in [a] takes up precious time. Unequivocal gender cues are easier retrievers (see Ehrlich

1980; Garnham and Oakhill 1985; and Oakhill and Yuill 1986). Judging by experiments with children, as quoted in the above-mentioned works, it also seems that the more complex the inference required, the harder it is to perform.

The question that arises, then, is why speakers throw such 'obstacles' in the processing way of addressees. I believe that the answer is that they actually do not. While we can very well compare the processing time of ambiguous and non-ambiguous referring expressions, the latter requiring a more time-consuming use of context, a choice among the two is not really an option open to the speaker. Gender cues are hardly manipulable by speakers, for example. Moreover, context is normally used to the benefit of referential decisions. And when one compares biasing with unbiasing contexts, results do show that biased contexts indeed facilitate processing of word recognition, pronouns included. Hirst and Brill (1980) found, for example, that to the extent that the plausibility rate of preferred antecedents was high, response time was considerably shorter. Similarly, Marslen-Wilson and Komisarjevsky Tyler (1987) checked reaction time to anaphoric expressions presented as probes. The forms were either congruent or not with previous material, both in terms of Topicality and in terms of the semantics of the verb (it must be the [male] surgeon who *injects* the injured girl, not the other way round). Indeed, reaction times were significantly different for the two conditions.

In order to see whether or not imposing inferencing processes on addressees is a rational step on the part of speakers, in other words, in order to see whether we can justify such a tactic in the Relevance framework we have adopted, we should compare the real options facing speakers when considering referential forms (or indeed any forms). The decision they have to make is how explicit they should be, since only explicitness can eliminate the need to rely on inferencing. However, being explicit (be it with referential expressions or with whole propositions) is not at all cost-free. It normally takes much more wording. This extra verbal material will then take up time to process too. Relevance theory predicts that a speaker opts for that choice which is less costly for the addressee. In other words, the effort needed to perform the inferencing required should not exceed the effort needed to process the extra verbal material.⁵

In fact, I suggest, inferencing for the sake of reference assignments is probably almost cost-free. The reason for this is that the assumptions needed for the deductive process involved in reference resolutions are more often than not accessed anyway

for the sake of determining utterance Relevance. Examining the examples above, the situations involved are all highly familiar and hence predictable (lending money, going to a party, staying at the store, Judo classes, nervous students before an exam). What is crucial to my present argument, however, is not so much that these situations are easily insertable into conventional frames / scripts / schemas / scenarios. The important point is that these frames / scripts / schemas / scenarios are accessed regardless of whether reference assignment is problematic or not.

Sanford and Garrod (1981:115), for example, compared the reading time of target sentences in which a pronoun referring to a character 'John', presented him either in the same role as the previous context has explicitly established him to have (a teacher), or else in a role contradicting his role as it was implied by the previous context (a student). The latter took longer to process. It seems, therefore, that interpreting a referring expression includes much more than referent identification. Other background is automatically extracted for further processing procedures which then may or may not be performed. In another experiment pertinent to our point about the automaticity of information accessing regardless of anaphora, Sanford and Garrod (1981:120) compared the reading time of sentences containing a general as opposed to a more specific exemplar or generic-level term. An example they quote is the following:

- [8] a *The vehicle* came trundling round the bend.
b *The tank* came trundling round the bend.

Results showed that [a] took longer to read than [b] despite the fact that *vehicle* is a much more common lexical item than *tank*. This suggests that the difference may well be due to the fact that the general term is hardly insertable into a specific scenario. It seems reasonable to hypothesize, then, that long-term information networks are automatically accessed in any case. I suggest that this is so not so much for referential acts, but because processing for Relevance means implementing background information in order to facilitate the integration of New information (on any theory currently in practice in the field – see below). Thus, it may very well be that all the extra effort that is needed when using inferencing for reference resolutions is the time it takes to actually perform the inference. The required premises, I believe, are there already.

Now, we have been referring to plausibility considerations so far, preferring this general term which would suit almost any account of contextual effects on reference assignments. But the

accounts that have been offered in the literature do differ. We believe that an account via Relevance is superior to the others. In order to see that we will briefly review other accounts. Initially, Caramazza *et al.* (1977) proposed a semantic solution for pronoun preferences in cases such as the following:

[9] John blamed *Bill* because *he* spilled the coffee.

They suggested that *blame* creates the expectation that its patient be later referred to. Indeed when the following clause failed to fulfil this expectation, as in [10], for instance (my own example), reference assignment takes longer:

[10] *John* blamed Bill because *he* had no one else to blame.

Caramazza *et al.*'s proposal is actually semantic only to the extent that it makes reference to the specific lexical item, relating the expectation to the semantic meaning of the verb. But the fact is that utterances such as [10] are properly interpreted. 'Semantic' expectations can, therefore, be frustrated. A more contingent, hence pragmatic, solution was therefore soon to follow. Ehrlich (1980) showed that by varying the connectives (*because, and, but*), the expectations supposedly created by the verb can be changed, even reversed, as in:

- [11] a *Larry* confessed to Tom because *he* was upset.
b Larry confessed to *Tom* and *he* was upset.

Referential preferences do not hinge (solely) on features of main verbs, argued Ehrlich. She concludes that General Knowledge on the specific events described in the utterance (dependent on the main verb, as well as the connective and the second clause verb) determine preferred assignments.

Prince (1978a, 1985) and Clark and his associates (Clark and Marshall 1981; Clark *et al.* 1983; Clark 1984) have rightly argued against using an 'unruly' concept of General Knowledge to account for natural language processing. Unlike other theories at the time, which were still trying to restrict the concept of context to previously mentioned linguistic material only, they fully appreciated the role of Encyclopaedic Knowledge in language use, but, they claimed, only information which is shared by speaker and addressee can actually be functional in discourse. Clark has therefore used the concept of 'Mutual Knowledge' to refer to that subset of reflexive assumptions shared and used in utterance interpretations. Prince (1978a) prefers a somewhat weaker concept, arguing that no speaker can be omniscient. What a speaker has to rely on is her own assumptions regarding

On the interaction of Accessibility

her addressee's assumptions, which are probably often correct, but are certainly not foolproof. Shared Knowledge is, therefore, that subset of her assumptions which she herself endorses and that she also attributes to her addressee.

Indeed, Clark *et al.* (1983) show how common ground is assessed for demonstrative assignments. They performed a series of experiments requiring subjects to determine who or what *this x* is, when the context (a display of pictures) obviously contained more than one object referable by the expression *this x*. Choices were quite consistent, and kept changing as the experimenters altered the common ground between experimenter and subject. In other words, subjects did not simply produce assumptions stored in their Encyclopaedic Knowledge in order to make the referential decisions. Had they done that, the results should have been practically random. In the absence of specific shared assumptions, subjects only assumed the most general assumptions they thought they shared with the experimenter, namely that the referent must be the most salient object. As more and more common assumptions were introduced (see the description above of the 'watch' experiment), use of that common ground comes to substitute the mere general Saliency assumption. In order to exclude idiosyncratic referential choices (e.g. interpreting *this x* as referring to a particular item only because an addressee happened to buy such an item an hour before the experiment, for instance), Clark and his associates insist that the Relevant context for discourse processes is common ground.

At first sight, Relevance theory may seem to take us back to a less restricted context definition. It denies the strong concept of common ground its role, arguing that communication does not at all involve a symmetric relation between speaker and addressee, as Mutual Knowledge implies. Indeed, it is only the speaker's duty to take into account (using no more than an educated guess) the context she can currently assume to be accessible to her addressee, while it is the addressee's duty to search for the appropriate context in order to derive those contextual implications guaranteed by the uttering of the verbal stimulus, the assumption being that as a speaker has chosen to speak, she must have an intentional informative goal. Now, a speaker obviously cannot guarantee the Relevance of an utterance unless she can be confident enough that her addressee will be able to compute it. She therefore cannot possibly intend the addressee to use any idiosyncratic information of which she has no knowledge (that he knows).

The addressee, on his part, must avoid inferences based on

idiosyncratic information if he is to arrive at the intended contextual implications. His avoidance of idiosyncrasy follows both from assumptions on the general goal of communication and from practical considerations concerning efficient acts of communication. The global goal of communication is the attempt to change others' thoughts, even if minimally so. Using idiosyncratic assumptions of the addressee's is, then, ruled out because a speaker's intention must form an essential element in interpretations. But more concretely, since all a speaker can do is guarantee Relevance when non-idiosyncratic assumptions are used, it may very well be a waste of time for the addressee to use idiosyncratic assumptions. They may lead nowhere, or only to marginally Relevant implications. Still, there is nothing to prevent an addressee from deriving more and more contextual implications above and beyond the intended message, possibly relying on assumptions he does not share with the speaker. The crucial point, however, is that he must never do it in lieu of the process outlined above.

To take a concrete example, suppose A says to B: 'Jennifer has betrayed Beth'. Suppose, further, that both Beth and B (the addressee) know two Jennifers equally well, but A (the speaker) only knows one of them. Last, assume that unbeknown to A, upmost on B's mind lately has been the question of betrayal. In fact, B is currently collecting some statistics on how many people in the neighbourhood have betrayed others. If we did not insist that an addressee first compute what is guaranteed as Relevant by the speaker, he may choose the wrong 'Jennifer' (assuming that this is the first reference to Jennifer, and that there is no other clue as to which Jennifer is currently more accessible to him). That we certainly want to avoid. However, having computed the appropriate contextual implications while avoiding idiosyncratic contextual assumptions (i.e. that the 'right' Jennifer betrayed Beth, that A is upset or happy about it, that she expects B to say or do something now that he knows, etc.), we need not prevent B from drawing further implications, based on idiosyncratic information (his research, for example). Note that since addressees start with the guaranteed contextual implications, the possible interpretation of A's utterance as attributing betrayal to the 'wrong' Jennifer is eliminated, though we do not eliminate the 'statistical' implication. The reason is that once the primary contextual implication is drawn, it is no longer consistent with a second Jennifer being involved. Nothing in the guaranteed contextual implication, however, precludes the additional 'statistical' implication.

On the interaction of Accessibility

Common ground is therefore too strong a notion for natural discourse, in that it assumes an ideal situation of total omniscience and symmetry between speaker and addressee. It is also much too weak since, without a doubt, speaker and addressee share far too many assumptions. Indeed, Relevance attempts to propose a psychologically plausible concept of what it means to share a context, simultaneously outlining a procedure of context search which most other theories simply leave open. I therefore propose that the plausibility considerations so clearly operative in reference resolutions be governed by a Relevance account. Now, given that Relevance directly accounts for inferenced reference assignments, when does Relevance 'take over' from Accessibility? Is it only in cases of ambiguity? Is it only when Accessibility fails? What, in other words, is the appropriate model for reference identifications?

Based on reaction time experiments, Ehrlich (1980:254) proposes the following view of reference assignment. As a first step, an addressee examines potential antecedents using gender cues (probably number and / or any other formal disambiguating cues such as noun classifiers where the language has them). Given a unique antecedent which grammatically fits the referring expression (Ehrlich actually limits her claims to pronouns), an addressee can go ahead and assign that antecedent as the intended referent. No further processing is required. If, however, formal features cannot uniquely identify the intended antecedent, an addressee should use his General Knowledge and choose the more plausible antecedent. Finally, in case the first two steps have failed, he should opt for that antecedent which is the topic.

Sanford and Garrod (1981:144-5) arrange their model slightly differently. They also divide up the considerations involved in pronoun reference assignments into three stages, depending on when these considerations are operative. Factors influencing the addressee prior to the encounter of the pronoun are roughly what we have argued to be degree of Accessibility (they mention topicalization, emphasis, and recency). Upon encountering the pronoun, lexical and syntactic information is taken into account. Both of these procedures involve searches conducted within the working-memory buffer. Last, an addressee checks the plausibility of the choice he made against material outside the limited working memory. He may have to modify his earlier choice when taking into consideration global text coherence, General Knowledge, etc. Scenario-embedded information is relatively easy to use, but any inferencing requiring the accessing of long-term memory is 'at best inelegant and . . . represents inconsiderate

discourse' (p.145). But we should probably ignore this last remark of Sanford and Garrod's since it was specifically claimed for pronouns, while we are interested in a more general account, incorporating lower Accessibility Markers as well.

Note that while Ehrlich's proposal is compatible with a modularity theory of language processing (Fodor 1983), Sanford and Garrod are committed to an interactive approach to reference assignments. In fact, reference resolutions have recently been used in arguments for and against a modular view. Marslen-Wilson and Komisarjevsky Tyler (1987) have convincingly argued against the great divide in speed that Fodor assumes to distinguish between central system processes and blind, automatic, domain-specific processes. In fact, practically every experiment that measured response time prior to and after context has had its effect, found that the gap is extremely small (e.g. Swinney 1982), a figure in range of a few hundred milliseconds only. Indeed, precisely because it is now clear that contextual inferencing does not normally take up a long time, I do not see that Marslen-Wilson and Komisarjevsky Tyler's anti-modularity approach is necessarily supported by their experiments, including those involving reference assignments. In fact, their experimental results strongly suggest an on-line procedure of reference (and utterance) interpretation which is certainly compatible with a weak interaction view, consistent with Fodor's modularity.⁶

On such a view, high-level processes (i.e. central system pragmatically-oriented inferencing) are not allowed to affect low-level processes (i.e. shallow linguistic decoding). Thus, contextual effects are only weighted after a rudimentary analysis has been assigned by the grammar. However, such a view does not at all preclude the possibility of having contextual preferences in utterance/reference interpretations. The pro- and anti-modularity approaches are therefore hard to distinguish empirically, since both predict that contextual effects will influence interpretations. They only differ with respect to the question of timing, and since the durations involved are extremely short, it is not easy to devise an experiment which would capture the stage prior to central system intervention. However, though not directly relevant to reference assignments, Swinney (1979, 1982) has proved beyond doubt, I believe, that as far as lexical item accessing is concerned, two stages can clearly be discerned. The first one is blind to contextual or even frequency factors (equally making available the two meanings of an ambiguous word despite a biasing context). The second,

On the interaction of Accessibility

which lags 3–4 syllables behind, already reflects the product of the higher-level processes, causing the biased meaning to be significantly more available now. Though the Swinney experiments do not pertain to accessing of antecedents, they strongly suggest a distinction between a first, shallow, purely grammatical level, and a following pragmatic level of processing. With no evidence to the contrary, we should assume no different for reference assignments.

Thus, those Accessibility Markers argued to be completely grammaticalized in Part II belong in the shallow linguistic module. Recall, however, that grammaticalization accounts only for a minority of anaphora cases. Indeed, as proposed by Kempson (1984), most referential assignments are performed by the central system. Primarily this is so because most anaphoric references are made across clauses. But in fact, even grammaticalized anaphora does not always point to a unique, obligatorily determined antecedent. We can easily come up with examples where more than one antecedent meets the grammatical requirement (when the minimal domain contains more than one C-commanding NP, for example). We are now finally at a stage where we can return to our as yet unanswered question regarding the division of labour between Accessibility and Relevance. The non-grammaticalized portion of Accessibility, I suggest, is but an auxiliary system of Relevance. Therefore the question of when Accessibility relinquishes its role and passes it on to Relevance does not actually arise.

The view I take of reference assignment is as follows. A linguistic decoding analysis of referential expressions is performed within the linguistic module, and the result(s) are later sent up to be completed / confirmed in the central system (see Wilson and Sperber 1986 for arguments supporting this claim for all types of interpretations). Relevance then takes over the search, using the conventions summarized under Accessibility theory, which merely make the search more efficient. However, by no means is the search exclusively Accessibility-bound. Accessibility should be seen as a very helpful facilitating device, and not as an independent principle which can then potentially clash with plausibility / Relevance considerations. Thus, when an addressee is actively searching for the appropriate mental entity, he should be basing the search on a variety of considerations. Accessibility conventions guide him as to 'where' he should look for the entity (though I am certainly not committed to a locality view of memory, see again the Introduction). It can never on its own guarantee a successful retrieval. It must always be checked for Relevance.

Moreover, the degree of Accessibility encoded into the referring expression, I claim, does not only take into account Accessibility as it can be established on the basis of previous utterances (whether the antecedent has recently been mentioned, whether it has been a topic, etc.), or alternatively, on the basis of an assessment of memory availability in the abstract (e.g. parents are more available in memory than familiar pieces of furniture). It is also sensitive to the effect the current utterance has on the Accessibility of particular items. Indeed, I take the position that plausible candidates are in fact more accessible. To see that this is the case note the following examples. If, as has been repeatedly argued in the literature (see Stenning 1978; Nootboom *et al.* 1980; Solan 1983; and our Chapter 3), stressed pronouns signal marked references, which are of lower Accessibility, we have some evidence that plausibility considerations are calculated into the speaker's assessment of what constitutes an accessible candidate. The crucial point about [12a] below is that the pronoun need not be stressed in order to get the appropriate reference resolution, despite the anti-topic choice involved.⁷ In other words, 'Jane' is considered accessible enough to be referred to by an unstressed pronoun. Contrast this with [b], where in the lack of a strong Relevance-based preference, the pronoun must be stressed for us to interpret it as referring to 'Jane':⁸

- [12] a Mary blamed *Jane* because *she* spilled the coffee.
b Mary_i kissed Jane_j and then she_i / SHE_j kissed Harry.

The following examples show that stress is helpful precisely when plausibility does not unequivocally point one way or another. When it does, as in [a], the pronoun need not be stressed. When it more weakly supports choice of the non-topic [b], stress is helpful, though probably not absolutely necessary. When the activity described is equally plausible for either candidate [c], stress must be used for the addressee to favour the non-topic interpretation:

- [13] a John hit *Harry* because *he* deserved it.
b John hit *Harry* because *HE* / *he* had hit him before.
c *John* hit *Harry* because *HE* / *he* is a terrible guy.

The above interpretations are based on my own intuitive judgements. The counterpart sentences in my native Hebrew, where the alternation is between a personal pronoun and a demonstrative pronoun, confirm these judgements.⁹ They will still have to be verified with others, and supported by reaction time experiments. If, however, what I have tried to sketch in the

On the interaction of Accessibility

last few paragraphs is in the right direction, we should not see pronoun resolutions as composed of three autonomous stages, two of which are optional, as the first two proposals have made them out to be. There are only two stages, both of them obligatory. The first is purely grammatical and probably inconclusive more often than not. The second is an inferential process governed by a Relevance account. Accessibility considerations which we have focused on in this book, should be seen, as I have indicated in the Introduction, as grammatical instructions used by Relevance (or any other pragmatic theory). Just like gender cues, it is a conventionalized procedure devised in order to make context searches efficient. By no means is it a substitute for Relevance.

In fact, I do not believe that even so-called unequivocal grammatical marking eliminates the need to check reference assignments (via Relevance) in the central system. While a gender cue may seem to be unambiguous, it is possible that the conventional gender associated with names is not necessarily stored in the 'dumb' lexical network. Names such as *Francis* in English, and *Tal* in Hebrew, are not unambiguously female or male, for example. Also, the same proper name may refer to a human or to an inanimate object (a company name). Last, there is always the possibility that the referring expression (pronouns included) actually refers outside the text, in which case there is potentially an infinite number of candidates (see again [4] above). In other words, my point is that what psychologists (and grammarians) have defined as a reference assignment requiring no inferencing is non-existent. We automatically process for Relevance, and hence always use plausibility assessments in reference assignments, even ones which seem to be perfectly clear. Reaction time differences, I suggest, are not due to the employment or non-employment of central system processing. They result from the amount of work actually performed. So-called inferred references are therefore not qualitatively different from so-called unambiguous reference assignments. They are only quantitatively differentiated.

8.2 Inferred entities

By inferred mental entities I mean those mental representations marked by the linguistic expression as accessible (they are referred to using Accessibility Markers), though strictly speaking, there is no corresponding memory unit for them. That a speaker can rely on the addressee to infer an appropriate antecedent is probably not at all surprising in light of recent research on the role of

inferencing in natural language comprehension. Indeed, as we have seen above, speakers rely heavily on addressees' adding on details onto the often incomplete logical forms they extract from natural utterances (Sperber and Wilson 1986). Since Relevance proposes to account for precisely such processes, Kempson (1984:11) suggests that it can account for 'bridged' co-reference quite straightforwardly. As concepts are associated with contingent information, this contingent information can be accessed in order to provide an antecedent when an explicit one is missing.

If a speaker can assume that an addressee can process propositions containing inferred entities, it means that she does not have to specially introduce them. She can presuppose them to be accessible and initially present them as such. The question to be asked, then, is what Accessibility status they should be assigned. Prince (1981a) and Clark and Marshall (1981) include bridged items in the category analogous to my Low Accessibility (though Prince does assign inferables a separate status on her Given–New scale). Such a classification seems justified since reference resolutions of this type require the accessing of some auxiliary assumption from long-term memory on the basis of which an addressee can infer the existence of the inferred entity. Note the following example:

- [14] Ginat had to take a bus to school today. *The driver* was a cheerful fellow.

Indeed, as argued in Sanford and Garrod (1981), substituting a pronoun (a High Accessibility Marker) for the definite description (a Low Accessibility Marker) in the above example results in an unacceptable string. This is so, even when, as in the original Sanford and Garrod example, the content of the pronoun sentence clarifies unambiguously what the inference should be (from Sanford and Garrod 1981:154):

- [15] a Mary dressed the baby. *The clothes* were made of pink wool.
b ??Mary dressed the baby. *They* were made of pink wool.

I suggest that the reason why pronouns (as well as the Intermediate Accessibility demonstratives – see Lakoff 1974 and Maclaran 1980) cannot retrieve implied entities is that they mark too high and automatic a retrieval. Retrieving an inferred entity may be fast and easy, but the need to actually produce a New mental entity necessarily lowers the degree of Accessibility which

a speaker can attribute to the entity.¹⁰

Measuring response times supports the claim that less than full automaticity is involved in such reference resolutions. Clark and Haviland (1977) found that inferred entities take up more time to process. Garrod and Sanford (1982) argue that the processing time of inferred entities depends on the nature of the immediate context. Naturally, the more predictive the context, the faster the retrieval. They thus contrast examples such as [16] (their [6–8] vs. [9–11]), where the title in [a] makes the later reference to the inferred ‘lawyer’ easier than in [b]:

- [16] a In court:
Harry was being questioned.
He had been accused of murder.
The lawyer was trying to prove his innocence.
- b Telling a lie:
Harry was being questioned.
He couldn’t tell the truth.
The lawyer was trying to prove his innocence.

In fact, when Garrod and Sanford compared the [a] version above with a variation on it where ‘the lawyer’ was appropriately introduced in the first clause (*Harry was being questioned by a lawyer*) they found that [a] did not take subjects longer to process.

What can be counted by speakers as indeed inferable? How predictable should an inferred entity be in order to be referable as accessible? Du Bois (1980) notes that body parts have a consistently great likelihood of being definite (i.e. marked accessible) on initial mention, for example. Judging by natural examples, it seems that speakers formally distinguish between two degrees of Predictability, which they then mark differently. When the probability of the referent is close to 100 per cent a mere Low Accessibility (a definite description) is sufficient:

- [17] a We bought a house last week. *All the rooms* are very large.
- b I visited an Indian tribe they recently discovered in California. The people are wonderful, but *the language* is so bizarre!

Such high probability entities (rooms in houses, a language in a human community) are for the most part script or frame based.

Prince (1978a) is an attempt to account for initial references by presuppositional expressions to entities a speaker cannot

assume the addressee to have in his gallery of mental representations. She contrasts examples of the following type:

- [18] [Stranger knocking at the door]:
- a Can I use your telephone? *My husband* has just had a heart attack.
 - b ??Can I use your telephone? *Paul Smith* has just had a heart attack.

Prince argues that though both *my husband* and *Paul Smith* are not known by the addressee to exist, the definite description is nonetheless acceptable because it represents an entity which is easily arrived at using our stereotypic assumptions (in this case, that women have husbands).¹¹ As Prince notes, it is not the mere linking of the inferred entity ('husband') to a Given discourse entity (the speaker) which is the licensing criterion. To show that, she contrasts examples of the following sort. [19] are based on Prince's examples in [21], where A and B are strangers sitting next to each other on a bus:

- [19] A: My car's really a mess. I just found out that there is a leak in the master break cylinder.
- B: i Oh, I had exactly the same thing happen to *my car* last year.
- ii ??Oh, I had exactly the same thing happen to *my fire engine* last year.

In order to introduce a New non-stereotypic entity such as in [Bii], B would have to specifically introduce it as New. Note how [Biii] (Prince's [21']) is the more natural response under such circumstances:

- [Biii] You know, I happen to have *a fire engine* (Oh, it's a long story). Anyway, the same thing happened to *my fire engine* last year.

I suggest that stereotypic assumptions, the other source addressees employ in order to retrieve missing antecedents, are not, however, as foolproof as frame-based antecedents. Although, for example, many women have husbands, children, cars, etc., not all women necessarily have all or any of the above. Such inferred entities are therefore explicitly anchored, to use a term introduced in Prince (1981a), to another entity already accessed. Since their generation is not as automatic as the inferences above, addressees are specifically referred to the entity which will serve as a basis for the derivation of the required inferable:

On the interaction of Accessibility

[20] A cousin of mine came to visit. *Her husband* came too.

Compare [21a] with [b] below, where the frame-induced 'cashier' can occur unanchored, but not a woman's child:¹²

[21] a I saw a woman crying in the supermarket yesterday.
The cashier tried to comfort her.

b I saw a woman crying in the supermarket yesterday.
She had lost *??the child / her child*.

In fact, it is hard to imagine that there is only a two-way division among inferables. The following experiment (Keenan 1978), as reported in Sanford and Garrod (1981:116–17) has found a reading time difference in the following examples, though all of them are grammatical:

[22] a Joey's big brother punched him again and again.
The next day his body was covered in bruises.

b Racing down the hill Joey fell off his bike.
The next day his body was covered in bruises.

c Joey's crazy mother became furiously angry with him.
The next day his body was covered in bruises.

d Joey went to a neighbour's house to play.
The next day his body was covered in bruises.

Thus, as the relatedness of the inferred entity to the context sentence becomes looser, reading times take longer. Sanford and Garrod suggest that the amount of processing required in order to infer the entity is a function of the relationship between the available context and the inferred entity. The more complex the inference chain, the longer the reading will be. I also suspect that those cases where Sanford and Garrod found no difference in comprehension time are restricted to script-based entities and not to mere stereotypes. Note that Relevance theory can take us one step beyond Sanford and Garrod's intuitive claim. It predicts that variations on [22] above creating less and less Predictability should be acceptable as long as the inferencing involved does not take longer to process than an added explanatory proposition such as 'he was injured by . . .' would.¹³

However, even the fact that a script-based entity is easily inferable does not guarantee that such retrievals are always acceptable.¹⁴ Erku and Gundel (1985) offer the following contrastive pair:

[23] a We stopped for drinks at the New York Hilton before going to the Thai restaurant. *The waitress* was from Bangkok.

- b ??We stopped for drinks at the Hilton before going to the zoo. *The baby orang-utan* was really cute.

Note that though waitresses from Bangkok are more expected to work in Thai restaurants than in hotel bars, [a] implies that the waitress works at the New York Hilton. This is why when we try to infer an entity from the 'zoo' in [b] the result is an unacceptable sequence. It seems that the preceding context must be one which enables the introduction of the specific inferred entity. With the report on the trip to the zoo embedded, it is not considered a likely event to serve as a background for the continuing discourse.¹⁵ Hence the difference between [a] and [b].

The above factors determining the appropriateness of inferables should not be taken as a definitive proposal. Though I have tried to illustrate some acceptable and some unacceptable cases, I expect that there are many far more complex cases which we have not dwelt upon. One such consideration may be the ability to infer an entity from a non-nominal entity, where it seems that morphological linkage plays a crucial role. [24a] below is from Bosch (1983), [24b] is my own, showing that semantic or pragmatic relations, as Bosch suggests, are not sufficient conditions:

- [24] a John became a *guitarist*, because he thought *it* was a beautiful instrument.
 b ??John became a *programmer*, because he thought *it* was a great machine.

We leave such investigations for others, who should find it a promising area to work on as it must shed light on the organization of memory storage. However, one reservation must be made. There are language-specific conventions regarding the form allowed for inferred anaphoric references. Hebrew, as well as other languages, in opposition to English, allows a bare definite description for inferred body parts. English forces an anchored Low Accessibility Marker under parallel circumstances (unless the particular limb is highly salient due to special circumstances, as in [b], originally from Erku and Gundel 1985):

- [25] a Tal raca ba +rexov. pitom, hi
 Tal was-running on-the -street. Suddenly, she
 nafla ve- shavra et ha +regel.
 fell-down and broke acc. *the- leg*.

- b I just talked to John. *The arm* is much better.

The English counterpart of [a] above would, no doubt, have *her*

leg, rather than *the leg*. But such cases are acceptable in Hebrew mainly for inalienable possessions, such as body parts.¹⁶

It seems, then, that although the principles suggested in this section are universal, since they are based on cognitive considerations employed in processing, there are some language-specific factors intervening. These, I am afraid, are quite arbitrary, since, unlike prevalent examples about concept availability (unmarked, prototypical category members, e.g. males, being more available than marked, less prototypical category members, e.g. females for example), it seems highly unlikely that people's body parts are frame-based for Hebrew speakers and regular lower-probability inferences for English speakers.

8.3 On so-called presuppositions

We have argued above that we need a pragmatic account of Accessibility Marker interpretations, in addition to the explanation by reference to Accessibility, for phenomena such as disambiguation and retrieval of inferred entities. We also need it in order to give an account of so-called presuppositional phenomena. I have thus far ignored the existential presupposition normally attached to definite NPs. In fact, I believe that presuppositions about the truth of propositions or about object existence are not directly coded into specific linguistic forms. There are no 'presupposition-triggering devices' as such, as the prevalent theories assume for definite NPs, factives, clefts, etc. Rather, presuppositional expressions, including sentence-level ones such as factives, etc., are to be analysed as Accessibility Markers. The attribution of a belief in such propositions is merely a context-dependent effect. Associating existence or truth with certain entities and propositions respectively results when the Accessibility Markers refer to either the Physical Context or the Encyclopaedic Knowledge.¹⁷ Context-type is thus very crucial in evaluating a speaker's commitment to the information marked accessible.

We have associated proper names and definite descriptions with Low Accessibility, demonstratives with Intermediate Accessibility, and pronouns and various gaps with High Accessibility (but see Parts I and II for many more Accessibility distinctions). However, we cannot ignore the fact that when these markers serve as initial retrievers, i.e. when they retrieve an accessible entity for the first time in a particular discourse, they tend to point to three different context-types respectively: Encyclopaedic Knowledge, Physical Context, and Immediate Discourse Context.

This distributional fact is in fact at the heart of the current definitions for the use of these forms. We have argued against this 'geographic' definition for Accessibility Markers (see again the Introduction), but we have accepted that in unmarked initial retrievals this three-way division consistently mirrors the basic three-way Accessibility division (see again Chapter 4). Moreover, we have argued, it is not accidental that Low Accessibility is coded by the very same markers pointing to Encyclopaedic Knowledge when initially referring, that Intermediate Accessibility is coded by those markers which initially retrieve from representations of the Physical Context, and that High Accessibility is coded by markers whose first retrievals are usually constrained to recent discourse material. We have suggested that these contexts are hierarchically ordered from the most immediate/accessible to the least immediate/accessible type. And this is how the specific choice of which Accessibility Marker to associate with which context pointer (in initial mention) is established in language.¹⁸ In the opening section of this chapter I have claimed that the features of permanence and commitment can explain the proposed context hierarchy.

While irrelevant to Accessibility, commitment is a feature that automatically follows from interpreting an Accessibility Marker with reference to certain contexts. Note that commitment should only be assumed when an Accessibility Marker points to Encyclopaedic Knowledge or to the physical surroundings. It does not follow when reference is made to recently mentioned pieces of discourse, since other speakers' assertions do not necessarily commit addressees to believing in them.¹⁹ In other words, commitment is normally absent when a High Accessibility Marker is used, but also, when either a Low or an Intermediate Accessibility Marker is used to refer to previous (less accessible) discourse material. This, of course, occurs in non-initial retrievals of entities. Should a High Accessibility Marker be used to initially retrieve from long-term storage (see again Chapter 3), it will indeed trigger an existential presupposition. The difference between initial and non-initial retrievals of entities (noted in the Introduction) is thus motivated. Only initial retrievals necessarily give rise to a reading where speaker and addressee are committed to a belief in the truth/existence of the proposition/entity.

Most of the work on presuppositions has concentrated on the notorious 'projection problem', i.e. the computation of presuppositions for compound sentences (Langendoen and Savin 1971; Karttunen 1973, 1977; Wilson 1975a,b; Kempson 1975; Karttunen and Peters 1979; Gazdar 1979a,b; Soames 1979, 1982).

This is due to the fact that it was realized quite early on that, whereas some of the presuppositions of various dependent clauses 'survive' and become presuppositions of the sentence as a whole, others are filtered out, or 'cancelled'. The goal was then seen as ensuring that presuppositions will 'disappear' in the right context, so that the truth-conditions of the sentence can ignore the question of the truth value of the presupposition in that case. Following Prince's (1978a) approach, I do not think that any presuppositions are ever cancelled, in the sense that they disappear and 'are not there' for the processing of the sentence. I think that linguists working on the projection problem were still too much concerned with the issue that the philosophers were preoccupied with, namely, to find the right solution to the question of assigning the correct truth value to propositions. Hence, the problem that they tackled was a speaker's commitment to certain beliefs about the world. Commitment to a belief translates into a proposition which has to be assessed as true or false for the truth value of the whole sentence to be determined, whereas non-commitment to a proposition makes it irrelevant to a truth-value assignment. This is why, once cancelled, presupposed propositions received no attention or explanation. The only objective was seen as doing away with them, with the help of some complex machinery, so that the speaker was 'absolved' from the belief in them.

If, however, those propositions termed presuppositions are seen as fulfilling a certain role in discourse, the question of cancellation is at least not the first one that comes to mind (though, obviously, one should still be interested in finding the correct formulation for the relation between propositions and speakers' beliefs). The primary question to ask is what functions these presuppositions fulfil. We should also ask ourselves how come one sometimes employs 'presuppositions' when one does not take their propositional content for granted. If no answer can be provided for these questions then presupposition will forever remain a technical term, though perhaps with a very good machinery to account for speakers' intuitions regarding when presuppositions commit their speakers to some belief and when they do not. Elsewhere (see Ariel 1985a), I have also argued that the various prevailing accounts are flawed in that they do not actually handle correctly basic distributional facts. Not every *cancelled* presupposition which represents an obviously false belief can be felicitously used in natural discourse. In other words, the cancellation of an obviously false proposition is not even a sufficient condition on presupposition use. I will not pursue this argument here.

Gazdar's (1979a,b) motivation in uniting the mechanism of presupposition interpretation with that of implicatures was that both are cancellable. But, I claim the two are not 'cancellable' in the same sense. Whereas we do 'lose' the content of an implicature when we cancel it – it does not correlate to any message conveyed to the addressee – we never 'lose' the content of a presupposition. The only thing missing is the speaker's commitment. Note [26], where the cancelled implicature need not form any part of the pragmatic analysis of the sentence, but the cancelled presupposition in [27] does:

- [26] Some, if not all of the girls were there.
Potential Implicature (of *some* . . .): Not all the girls were there.
- [27] John doesn't regret kissing Mary, because there is no Mary that he could have kissed.
Potential (Existential) Presupposition: There exists a person by the name of Mary.

Whereas cancelled implicatures take no part in the pragmatic analysis of sentences, so-called cancelled presuppositions do, i.e. someone must have expressed a belief in John's kissing some Mary for [27] to be acceptable, but not that 'not all the girls were there' for [26]. Thus, while cancelled implicatures pose no appropriateness conditions, cancelled presuppositions do. Such examples show that unlike cancelled implicatures, presuppositions, whether cancelled or surviving, require some *raison d'être*. The answer to the question of why a speaker uses a presupposition when she does not 'really' mean it, is that she does mean it. But the 'meaning' of presuppositions is not necessarily the speaker's commitment to propositions. Presuppositions, whether cancelled or not, represent accessible information, and since accessible information is retrieved from one of three major context-types, only two of which normally commit the speaker to some belief, we see why there is this puzzle. Cancelled presuppositions are what I call propositions interpreted as originating from the non-committing context – the Linguistic Context.

Viewing presuppositions in this light makes the bizarre situation of a linguistic marker being used seemingly in contradictory contexts (presupposition survival vs. presupposition cancellation) not bizarre at all. Rather than look at the differences, we can see what all presupposing markers have in common, namely that the information they modify is accessible in some degree. It can be a belief a speaker is committed to (Encyclopaedic Knowledge and

Physical Contexts are Binding in most cases) or a belief which the speaker is not committed to (one that was simply mentioned in the discourse). But in either case, a speaker can assume that the addressee is in some sense familiar with its content. The Linguistic Context supplies the addressee with only a superficial type of familiarity, but it is a kind of familiarity nonetheless.

This analysis is very much an extension of Prince (1978a), who argues that whereas most presuppositions correspond to the tacit assumptions of speakers, as well as addressees, cancelled presuppositions correspond to the tacit assumptions of someone other than the speaker. Prince argues that speakers sometimes repeat other people's assumptions only to contradict them. This can certainly account for most of the sentences containing cancelled presuppositions offered in the literature. The negative sentences, where presuppositions are supposed to be cancelled, can only occur naturally in a context like [28A] (Kempson 1975:[2A], p.86):

- [28] A: Did the neighbours break the window?
B: No, it wasn't the fault of the neighbours – we haven't got any neighbours.

Prince rightly points out that the notion of contradiction, used to prove that presuppositions are simply entailments, has been erroneously applied from logic, where there is only 'one voice', to natural language analysis, where there are as many 'voices' as there are speakers. What is semantically impossible is self-contradiction, not a mismatch among speakers. Hence, examples like [28] do not necessitate a conclusion that (surviving) presuppositions are nothing but entailments.

Interestingly enough, in reality, addressees more often than not interpret sentences containing presuppositions in 'plugged' environments (i.e. where presuppositions are supposed to be blocked) as uncancelled. Carrel and Richter (1981) performed an experiment to test cancellation of presuppositions. They asked subjects to decide whether a given sentence did or did not presuppose some embedded presupposition. They found out that only 27 per cent of the subjects chose a non-presuppositional interpretation in a 'plugged' environment, i.e. where Karttunen (1973) predicts cancellability. This means that commitment to presuppositions was more than twice as popular. We should note that some of the beliefs expressed in the presuppositions were rather unlikely beliefs, such as there exists such a thing as 'Randy's talking plant'. However, subjects had no context in this test. No doubt, in the same experiment with a context where the

'plugged' presuppositions could have been attributed to some other speaker's beliefs, subjects would have interpreted the sentences differently. Since no such way out was apparent, in order to justify the use of the Accessibility Marker, most subjects resorted to attributing the source of Accessibility to an actual speaker's belief.

Carrel and Richter's results seem even more intriguing when we compare the above findings with their results for 'holes' (i.e. where all presuppositions should be interpreted as propositions a speaker is committed to). It turns out that presuppositions under 'holes' are not different at all! The most popular interpretation remains presuppositional, but the percentage of subjects preferring this reading does not go up at all. But here a qualification is called for. There is a problem with their choice of 'hole'. They chose 'it is possible that', which is indeed a 'hole' according to Karttunen (1973), but it certainly behaves differently from a factive, say. So I expect results would have been different had the matrix Predicate been chosen more carefully. In fact, I do expect *possible* to behave like a 'plug' and not like a 'hole', since I divide Predicates differently, as will be seen below.

So-called plugs, as originally conceived by Karttunen (1973), can be seen as a means to 'warn' addressees not to attempt a Binding interpretation, since with no 'evidence' to the contrary, addressees do interpret Low Accessibility Markers as pointing to a Binding belief. Such expressions are, then, linguistic devices, aimed at ensuring a non-Binding interpretation by addressees without losing the Accessibility interpretation. Prince (1978a) discusses various expressions whose function it is to signal to the addressee that some presupposition may not be attributable to the speaker. The addressee is instructed to 'defer attribution until further notice'. This class of deferrers includes adjectives like *purported*, *so-called*, *alleged*, *putative*, which defer attributing a belief in the existence of referents of definite NPs to the speaker. As examples, consider the following:

- [29] a But there is reason to believe that the *purported* semantic distinction between factive and semi-factive is incorrect. The difference between factives and *so-called* semi-factives is said (by Robin Lakoff) to be shown by
(from Kempson 1975:128; quoted by Prince 1978a:[27])
- b There has been much discussion of "indeterminacies" that allegedly plague the study of language – of *the alleged problem* posed by the fact that . . . Although

the observation is correct . . . , the real problem lies elsewhere . . .

(Chomsky 1986:149)

Prince also notes that *either* plays a similar role, and contrasts sentences with and without it:

- [30] a Either *Jack's children* are bald or Jack has no children.
b ??*Jack's children* are bald or Jack has no children.

Prince maintains that the clausal deferrers *either* and *if*, unlike the NP deferrers, do not block attribution to the speaker automatically. Rather, attribution *will* be made unless an addressee is otherwise instructed. Attribution is, of course, the establishment of a Binding interpretation. Thus, on receiving:

- [31] Either Jack's children are bald or Jill's children are bald.

Where the first part is identical with [30a], the addressee *will* attribute to the speaker a belief in the existence of Jack's children. Not so in [30a], because of the second part, which specifically instructs him against it. The difference in naturalness made by the presence or absence of the initial deferrer (cf. again [30a] and [30b]) explains why Karttunen (1973) claimed that filtering is asymmetric between the clauses. Sentences such as [30b] vs. [32] would seem to corroborate such an approach:

- [32] Jack has no children or (else) his children are all bald.²⁰

My intuitions are that this deferring procedure holds not only for 'filters' but also for 'plugs', as well as some 'holes' (like *it is possible that*, mentioned above). The verbs of saying, for example, were categorized as plugs by Karttunen (1973), but this has been reversed in the literature that followed (Wilson 1975b; Gazdar 1979b). I do not fully agree with either claim. I suggest we view any means of expressing non-factuality (negation, question, probability adverbials, conditionals, hedges in general, etc.) or non-speaker's point of view (*x says, thinks*) as potential speaker 'absolvers', just like Prince's clausal deferrers. A Binding interpretation is not ruled out, and other things being equal, should still be preferred. Thus, in [33a] the negative signals to the addressee to assign Binding status to the murder story, unless further instructions to the contrary follow, and they *may* follow. [33b] is a 'green-light' continuation, whereas [33c] is a 'red-light':

- [33] a Harry doesn't regret having killed his cat . . .
b Quite the contrary, he is very happy about it.
c He never even owned one.

Normally, where danger exists that an addressee will erroneously attribute a belief to the speaker (rather than to someone else), there will be in addition to the deferrer some clear rejection of that belief (by entailment or implicature).

Note that intonation plays a similar deferring role in such sentences: a marked intonation is required when [33a] is to be followed by [33c]. For [33b], the only change from unmarked intonation is the stress on *regret*. Intonation, then, supports the claim that it is more marked to cancel than not to cancel presuppositions. Ball and Prince (1976) discuss the function of extra-stress in 'releasing' an item from being presupposed. They maintain that it is restricted to *it*-clefts as in [34a], but I believe it applies to all Low Accessibility Markers, as in [34b] (with the possible exception of *wh*-clefts):

- [34] a It isn't JOHN that shot MARY. It's MARY that shot JOHN.
b John doesn't regret that he stole the BOOK. He regrets stealing the PICTURE. He never even stole the BOOK.

To sum up, the claims made here are that presuppositions fail only if they cannot be viewed as accessible material in any sense, and furthermore, that they are never cancelled in the full sense. Rather, they are checked against the three possible context-types. By positing a theory where presuppositions are never cancelled, I have been able to show why speakers actually use presupposed / accessible structures, whereas most theories just take it for granted that this linguistic phenomenon exists, and see their task as patching up those places where presuppositions seem to vanish. They then end up characterizing 'negative' environments for presuppositions rather than positive ones, ignoring the Relevant characterizing feature of presuppositions, which is present regardless of whether a commitment to a presupposition is 'cancelled' or not, namely, Accessibility. I suggest that the various presuppositional structures be assigned [+Accessibility] rather than [+presuppositional] values, and, in order to distinguish between the various possible distributions of different items, degree of Accessibility should be indicated.²¹

Special uses of Accessibility Markers

By special uses of Accessibility Markers I mean to refer only to those cases which on the face of it seem to pose counter-examples to Accessibility theory, in that despite an assessed degree of Accessibility x , a speaker chooses a marker associated with either a lower or a higher degree of Accessibility than x . We will therefore not explore the fascinating subject of what guides speakers in choosing a specific expression given a variety of expressions identical in terms of degree of Accessibility. Such decisions mainly pertain to Low Accessibility Markers. We shall thus ignore the requirement to match the description type of a participant in a particular utterance with the role she plays in that utterance (assuming my neighbour is an engineer, I should still refer to her as *the neighbour* in the context of my reporting a request I made to her to keep an eye on my pet, for example).¹ The same goes for the necessity to tailor the referring expression to the addressee's knowledge state (he may know the participant in a certain but not in another role), or for the choice of a coloured description so as to insert an evaluation while referring (two rapes each referred to as *the adventure* in *Yediot Ahronot* 21 December 1983, 3 March 1987, a house that seems to require constant toiling over referred to as *our love nest* in *The Diary of a Happy Housewife*, by D. Harpwood). Neither are we concerned with the complex issue of determining which reading and hence which precise referent to assign, given a certain referring expression (see Nunberg 1979, and Fauconnier 1984, for an illustration of the problems involved). Most of these problems should be handled by Relevance directly, rather than by Accessibility.

9.1 Possible divergences from appropriate Accessibility marking

Apparent counter-examples to Accessibility theory occur when a speaker seems to ignore the degree of Accessibility of the mental entity to the addressee. She may choose to refer to a non-accessible entity as if it were accessible, she may ignore the High Accessibility of an entity and prefer a relatively lower Accessibility Marker, or she may ignore the Low Accessibility of an entity, referring to it using a relatively higher Accessibility Marker. In the spirit of Relevance theory, such intended discrepancies, I claim, are produced in order to encourage an addressee to derive specific additional contextual implications. We begin with 'insincere' uses of material as accessible. Such uses, when recognized as intentional by the addressee, are aimed at creating a vivid picture, I claim.

Vividness means 'here and now'. In terms of Accessibility Markers, the Intermediate Accessibility Markers are the markers most clearly associated with 'here and now', proximal demonstratives more so than distal ones. This is why researchers have made references to 'emotional' deixis (Lakoff 1974) or emphatic deixis (Lyons 1977). Lyons, for example, maintains that *this* is selected rather than *that*, 'when the speaker is personally involved with the entity, situation or place to which he is referring or is identifying himself with the attitude or viewpoint of the addressee' (p.677). Here are two examples of 'emotional' *that* from Lakoff (1974):

- [1] a (Male mechanic to a male car owner): Check *that* oil?
- b (Doctor to a patient): How's *that* throat?

Note that in the above we cannot substitute *this* for *that*. The following, however, can use either. Obviously, conventions which we will not go into govern marked uses as well as unmarked ones:

- [2] *This / that* holiday we spent in Cyprus was really something, wasn't it?

In [2] the speaker makes an appeal to some shared experience, attempting to bring the past to life. This is not the case when she chooses *the* rather than a demonstrative:

- [3] *The* holiday we spent in Cyprus was really something.

Some such marked uses of demonstratives have been completely conventionalized. For instance, uses of *such* and *so*

On the interaction of Accessibility

with no antecedent [4a], and the use of unstressed *this* to introduce New entities (see Prince 1981b) [4b]:

- [4] a i I heard *such* a wonderful talk!
ii She was *so* nice to us!
b One time I went to the roof of this project and there's *this* big black guy about six seven on top of the stairs. He had his back to me . . .
(Fireman in Terkel 1974:756, from Prince 1981b:233)

Modern Hebrew does not have such a means, but examples such as [5], where no prior mention is made to the entities marked accessible, are frequent in Mishnaic Hebrew:

- [5] mecauhu le-oto zaken be-oto makom.
They-found-him that old-man in that place.
(They found that old man in that place.)

Of course, for such uses not to be misleading, some indication must be given to the addressee that he should not try to actually access the said entity. This can be done using the existential *there* construction typical of introducing New entities, or as in the Hebrew example, such expressions are restricted to initial story position.

A second type of Accessibility violation occurs when a speaker prefers a lower Accessibility Marker than is called for under the circumstances. Note the following, for example:

- [6] After I'd prepared *our evening meal*, I cooked *our evening meal* and washed up after *our evening meal*. I didn't eat much of *our evening meal* because I was then sick of the sight of it.
(D. Harpwood, *The Diary of a Happy Housewife*)

The avoidance of a pronoun despite the high availability of the intended entity is due, no doubt, to the wish to invoke in the addressee the same feeling of repugnance with 'the evening meal'. Most of the cases where a speaker uses a lower Accessibility Marker than is necessary are not, however, simply due to the wish to sound repetitive. They are cases where a speaker wishes to guide an addressee in making particularly accessible certain but not other assumptions on the referent.

In effect in line with Relevance, Evans (1982) argues that referential acts are information invoking acts. An addressee is expected to retrieve a dossier of information on the referent when accessing the appropriate mental entity from memory. According to him, pronouns and proper names are neutral as to

dossier-activation, but not so definite descriptions. I do not entirely agree with him regarding proper names (see below), but I would like to exemplify a few cases where the choice of a definite description, when too low an Accessibility Marker, is aimed at focusing on some particular aspect of the referent. Consider the following (based on Tanenhaus *et al.* 1985:393):

- [7] Mary couldn't decide whether to buy steak or hamburger. She finally decided to buy *the former / the steak / the more expensive meat*.

Note that only the last option in [7] induces additional contextual implications specifically related to the referring expression chosen (e.g. that Mary is careless with money or that the meal was a special occasion).

Most anaphoric expressions are referentially more dependent than their antecedents. Informationally, they are poorer. In our terms, they are of relatively higher Accessibility. This is how Sanford and Garrod (1981) motivate the following judgements:

- [8] a *The bus* came trundling round the bend. *The vehicle* almost flattened a pedestrian.
b ??*The vehicle* came trundling round the bend. *The bus* almost flattened a pedestrian.

In order for the second reference (*the vehicle* in [a], *the bus* in [b]) to be taken as anaphoric, it has to be less specific than the initial reference. In fact, we have argued above that the initial reference in [8b] is actually often not appropriate because it is too general, unable to invoke a specific scenario. Bosch (1983) proposes that an anaphoric expression must not convey anything New about the referent. He proposes that acceptable and unacceptable epithets are different in that unacceptable ones present New information. I suggest that epithets may in fact refer to an entity in a manner which is New or at least unacceptable to the addressee. The condition that must be obeyed, however, is that the local context make it manifest that the unusual referring expression to some extent follows from it. Otherwise, an addressee will be at a loss, searching in his long-term store for an entity that may very well be there, but classified completely differently. In fact, the only difference I see between an epithet and the use of other too low Accessibility Markers, as in [7] above, is that the description chosen is subjective, not necessarily one that an addressee normally endorses.² We will make do with one example:

On the interaction of Accessibility

- [9] When *John* came home this afternoon, *the son of a bitch / this genius of a child you gave birth to* broke all the windows in the house.

The following examples from Bolinger (1979, examples [20, 21]) suggest that referring by name rather than by another Accessibility Marker may be significant too:³

- [10] a You don't need sulfur for drying apricots; *sulfur* ruins the flavor.
b When Joe enters a conversation, *Joe* expects *Joe's* friends to listen to *Joe*.

Names seem to emphasize that the predication concerned is an inherent quality of the referent under discussion. No doubt this is so because, unlike other referring expressions, names are granted individually (on the whole). Other referring expressions are 'free for all'. This is why a point action, which is non-indicative of the referent in general, does not lend itself to such references. The following is Bolinger's example [23]:

- [11] *Joe stumbled when *Joe* crossed the street.

Evans' (1982) claim on the 'neutrality' of names should be qualified, however, because of examples other than these last ones. Names, actually name types, can be indicative of different kinds of speaker-referent or addressee-referent relations. First names are reserved for intimates, nicknames even more so. Consider the following:

- [12] a Life goes back to normal, . . . I take *the solicitor* out for a walk in a small wheelchair.
(B. Groult, *Les trois Quarts du Temps*, translated into Hebrew by Avital Inbar, p.44)
b I never speak my thoughts to *David*, there never seems to be an opportunity. I think that's sad.
Wednesday 11th. A Life in the Day of Jane Bennett. I start my day the Valium way at seven-twenty am., when *my departing husband* brings me a mug of tea and a Diazepan tablet.
(D. Harpwood *The Diary of a Happy Housewife*, p.4)

In both examples wives are referring to their husbands. Note the implied lack of intimacy between the couple when the first name is avoided in favour of the lower Accessibility Markers (*the solicitor* in [a], *my departing husband* in [b]). The effect is clearer in [b], where, within two sentences, the reference to the

husband changes. Note that it is precisely when intimacy is involved that the writer uses *David*. Indeed, the following example from a novel by A.B. Yehoshua, where a mother chides her little boy who keeps referring to his sister as 'the baby' instead of using her name, is not surprising at all:

- [13] Child: *The baby* will remain fat too . . .
Mother: She is not fat, . . . But why do you keep calling her *baby*. She has a name . . .
Child: Father calls her *the baby* . . .
Mother: You are not father and not everything that father does is good. Stop saying *baby*. She has such a sweet name.
(Yehoshua 1982, p.16, in Hebrew)

Before we move on to discuss the last logical possibility, i.e. using too high an Accessibility Marker, I should like to briefly refer to the question of referring expressions and point of view. Referring expressions can obviously be used to reflect a subjective point of view on referents, as mentioned above with respect to two rapes, each referred to as 'the adventure'. But what I would here like to suggest is that Kuno's (1987) claim on the connection between pronouns and empathy is much more general. Choices among Accessibility Markers can be affected by the wish to show greater or lesser empathy with certain referents. While Kuno emphasizes the difference between pronouns and reflexives regarding this point, I would like to suggest that in fact, the Accessibility scale is also a scale of empathy. In other words, the higher the Accessibility Marker used, given that retrievability is not affected, the more the speaker empathizes with the referent under discussion. Kuno mainly discusses differences such as the following (his examples on pp.153 and 174), where the reflexive indicates that 'the referent of the reflexive is the target of the action or mental state represented by the sentence' (p.153):

- [14] a John pulled the blanket over *him*.
b John pulled the blanket over *himself*.
[15] a John heard some strange gossip about *him* on the radio.
b John heard some strange gossip about *himself* on the radio.

Indeed, just as reflexives signal greater speaker empathy than pronouns, pronouns signal higher empathy than first names, and

On the interaction of Accessibility

first names signal higher empathy than full names or descriptions. Note the following (from Kuno (1987:112, 268), based respectively on Ross (1967) and Uspensky (1973), who quotes from Tolstoy's *War and Peace*):

- [16] a That *he* was unpopular didn't disturb Oscar at all.
b That *Oscar* was unpopular didn't disturb him at all.
- [17] a In spite of *Count Bezuchov's* enormous wealth,
b *Pierre* ever since he had inherited it . . . had felt much less rich than when . . .

Kuno has often made the claim (e.g. 1972a,b) that the source of the difference between [16a] and [b], which in some cases involves differences in acceptability judgements, is due to the fact that with such direct discourse verbs (*disturb, believe*, etc.) the 'underlying' pronoun is a first person pronoun, a speaker naturally referring to herself using a pronoun rather than a name.⁴ I suggest that in light of the parallel difference noted in [14–17] we do not attach the empathy affect to a specific referring expression, but rather view it as relative, where high and low empathy are correlated with higher and lower Accessibility Markers. In fact, this is not at all surprising. By preferring a higher Accessibility Marker, an addresser (actually, this strategy is probably limited to writers) is implying that the particular referent is highly accessible to the addressee. High Accessibility implies closeness, hence the empathy effect.

We end by noting that when unjustified, the use of higher Accessibility marking carries negative connotations. Unjustified usage here means that a speaker is not really in a position to choose among markers, as the grammar and Accessibility predictions seem to enable her to in the above cases. Thus, while in the examples above, a speaker can choose between a reflexive or a pronoun [14] (both actually rather High Accessibility Markers), a forwards or a backwards anaphora [15], and an omniscient author can refer to his hero either by title or by first name [16] (and notice, moreover, that the order of presentation in [16] is in fact in line with Accessibility), this optionality is not always available to addressers. We will dedicate the last section of this chapter to 'unjustified' preferences along the Accessibility scale, arguing that speakers tend to use higher Accessibility Markers for members of minority groups. Here we only mention conventionalized forms of Accessibility raising. By conventional Accessibility raising devices I mean specified additions to Accessibility Markers, which raise the degree of Accessibility

signalled by the marker. In fact, I can only think of one Accessibility Marker which has conventional devices to raise its unmarked low Accessibility status – proper names.

First, since proper names may denote New entities, some languages have a formal way of distinguishing between retrievable and non-retrievable names. Greek (see Krámský 1972) and German mark familiar names by the addition of the definite article. English, on the other hand, cancels the familiarity assumption by prefacing the name with an indefinite article (e.g. *a Joan Smith*). Hebrew is like English as far as the last use is concerned. However, it also has the option of prefacing proper names with a definite article. Unlike German (and Greek), this is not the norm, and its use marks the referent as looked down upon, for it renders the proper name a common name. In fact, when unjustified, i.e. when a referent *is* familiar to the speaker, English and Hebrew alike attach a negative connotation to the lowered Accessibility expression. Jespersen (1949:563) diagnoses such definite article attachments in Pre-Modern English: '*the* may be used facetiously before men's names, placing them in the category of pet names'.⁵ He cites examples such as [18] (from Byron):

- [18] Pray, remember me to all friends, to *the Scrope* [i.e. Scrope Davies] . . .
(Byron correspondences, 2.99, from Jespersen 1949, p.563)

A similar device for cancelling the familiarity assumption associated with names is the addition of a demonstrative pronoun. Again, when this is justified no negative connotations are attached:

- [19] *This woman of his . . . This Connie* is pregnant.
(Yehoshua 1982, p.108, in Hebrew)

[19] is uttered by a speaker who has never met 'Connie' to an addressee who has not met her either. 'Connie', nonetheless, is a highly available referent in their life right now. The same can be seen in the following hypothetical exchange:

- [20] A: I just met Prince Charming last night. His name is John.
B: What did *this John / he / ?John* do to convince you that he is indeed Prince Charming?

Note that the newly introduced 'John' is preferably referred to by a pronoun or by a raised Accessibility Marker and not by the proper name. However, when unfamiliarity cannot be the reason

On the interaction of Accessibility

why a speaker prefaces a name with *this*, a negative connotation is generated. Note the following from Lakoff (1974, example [9]):

- [21] I see there's going to be peace in the middle-east. This Henry Kissinger is really something!

There is a certain tone of begrudging in the last example. Indeed, many a mother has felt uneasy when referred to by [a] below, and an Israeli right-wing journalist has specifically complained of references such as [b]:

- [22] a *This mother* won't let me do anything!
b *This people, this land, this state*
(*Yediot Ahronot*, 20 May 1983)

Of course, not all *this* + common or proper names carry a derogatory meaning. As indicated above, negative associations are attached only in those cases where a speaker was in a position to use a lower Accessibility Marker and rejected it. Thus, Prince's (1981b) discussion of New entities first introduced by *this* NPs does not, naturally, fall under this type. Indeed, Prince argues against prevalent beliefs about the derogativity of *this* NPs, but cannot really explain when such an effect is nonetheless generated. I suggest that the negative implication is not attached to the demonstrative pronoun *per se*. Rather, it results from evaluating the referring expression against other referential options compatible with the context currently accessible to the addressee. In the cases considered by Prince, a speaker is by no means formally allowed to select any Accessibility Marker at all. Having no other Accessibility options, a speaker is then not taken to intend the Accessibility raising effect.

Summing up the divergences briefly discussed above, inaccessible entities, provided they are undoubtedly New, can be initially introduced via Intermediate Accessibility Markers for an effect of vividness. Using lower Accessibility Markers than are currently required is mainly a step taken by the speaker in order to highlight specific background assumptions she wants the addressee to use in processing the utterance. Minor variations on the Accessibility scale can be manipulated to show different degrees of a speaker's empathy. I suggested that the higher the Accessibility Marker the higher the empathy. We ended this section mentioning a few cases of conventionalized Accessibility raising procedures (mainly by attaching an additional marker to a relatively Low Accessibility Marker). When familiarity of a speaker with the referent is not to be assumed, such conventionalized Accessibility raising simply

signals this lack of familiarity. However, when a speaker cannot plausibly be assumed to be unfamiliar with the referent, a negative connotation accompanies the raised Accessibility Marker. Not surprisingly perhaps, we find that members of minority groups are consistently referred to by relatively higher Accessibility Markers than members of the dominant group. Section 9.2 will therefore be dedicated to references to the 'other'.

9.2 Referring to the 'Other': Focus on women

Address systems have received considerable attention from sociologists, who were interested in the linguistic patterns involved as they seemed excellent indicators of social status (Brown and Gilman 1960; Brown and Ford 1961; Lambert 1967; Ervin-Tripp 1971, 1972; Friedrich 1972). In the late 1970s special attention had been drawn to differences between males and females both as addressers and as addressees (see Kramer 1975; Wolfson and Manes 1980). Research has shown that the two sexes are indeed differently addressed. The inventory available for addressing males is larger, females are more likely to receive first names and endearments (e.g. *dear, honey*), while virtually only males are the recipients of bare last names (e.g. *Smith*). Much though they have in common with referring expressions in that they too pick out an individual referent, addressing is much more socially oriented than referring. The main reason is that in addressing someone the question of Accessibility or identifiability hardly arises, since one is constantly accessible to oneself. Address systems, then, are probably not necessarily subject to Accessibility principles, even when the address performed is initial.

Referring expressions, on the other hand, do, of course, obey Accessibility principles, as we have argued in this book, but we should note that they too carry a social dimension as well. Quite a lot of work has been dedicated to generic references, the conclusion of which has been that so-called neutral terms do not actually refer to females (MacKay and Fulkerson 1979; Martyna 1980), and that feminine and masculine terms connote differently, feminine terms carrying sexual and often negative connotations (see Graham 1973; Schulz 1975; Miller and Swift 1976; Spender 1981; and many articles in Vetterling-Braggin 1981, *inter alia*). More relevant research has examined the stereotypes used to depict females and males (see Nilsen 1972, 1973, 1977; Miller and Swift 1976; Eakins and Eakins 1976, 1978; Ariel 1986,

On the interaction of Accessibility

1988a; Ariel and Giora forthcoming). Findings here are that more men than women are presented by their occupation, while women are more commonly referred to as females, as members of family, etc. While such differences are extremely significant, I will not discuss them since I believe that Relevance can account for them quite straightforwardly. It seems only reasonable that storing of New referents and accessing of familiar referents should rely on social stereotypes, simultaneously facilitating the processes involved and reinforcing the social stereotypes.

But some gender differences are specifically relevant to Accessibility theory. In fact they sometimes constitute blatant counter-examples to Accessibility principles. One type of example, which we will not further discuss, pertains to females vs. males as speakers. Thus, Shibamoto (1980), as reported in Shibamoto (1987), found that in Japanese, women tend to delete subject NPs more often than men. If this is indeed the case (namely, content and contextual differences cannot account for the differences independently of sex), it means that the Accessibility scale may be differently constructed for the two sexes, zero signalling a lower degree of Accessibility for women than for men. This may then be classified as a dialectal difference, and as such is quite compatible with Accessibility theory.

I have chosen to examine the sex of the referent rather than that of the speaker as a factor influencing the employment of the Accessibility scale. All the examples which follow are cases where relatively too high an Accessibility Marker is used to refer to a member of a minority or to women in Israel.⁶ We concentrate on names and name types, titled references, and anchored descriptions. All of these are relatively Low Accessibility Markers, but they can still be distinguished as to degree of Accessibility as follows (plus some variations):

- [23] Full Name + Description > Full Name > Occupational Title + Last Name > Courtesy Title + Last Name > Last Name > Anchored Description > First Name

The arrangement of the items in [22] should be self-evident by now. More informative expressions mark lower Accessibility, while less informative ones mark higher Accessibility. Three items deserve special notice. Firstly, I have distinguished between occupational titles (*MP*, *Doctor*, etc.) and courtesy titles (*Mr*, etc.) because the former give a much better clue as to the individual intended. I have placed anchored entities rather at the extreme end of the hierarchy in [23] because of the need to rely

on an immediately accessible entity for their introduction (see the discussion in section 8.2 above). Last, we should note that first names are especially High Accessibility Markers as initial accessing expressions in public channels of communication (newspapers, television, etc.), since it turns out that first names tend to be limited to a rather surprisingly low stock. Weitman (1985), for example, found out that 876 names can account practically for all female and male native Israeli born Jews in the last hundred years (1882–1980), despite the changing trends in naming that he tracks, which indicate that at any particular period the actual number of first names is in fact much smaller.

It will be recalled that Table 1.6 in Part I, which presented comparative data for the occurrence of full, last and first names in subsequent mentions, contained a rather peculiar finding, namely that 25 first names (51 per cent of all the first names in the sample) were used in contexts which should normally constitute a relatively low degree of Accessibility (further in the same paragraph and across paragraphs). As noted there, however, the reason for these ‘exceptions’ was the fact that one of the articles analysed was about an Arab and her husband. It was references to these two which contributed the exceptional data. [24] below are typical examples (and see also [25c,d]). In [a], after initially introducing a female Palestinian doctor in full, she is referred to by first name throughout the newspaper article about her (*Yediot Ahronot*, 3 March 1987), while a male colleague of hers is appropriately referred to by a full description. [a] enumerates all the references to the doctor which were not pronominal. [b] shows a similar difference between female and male Jews:

- [24] a Dr Georgette Kuds, a Palestinian from Ramalla . . .
Georgette . . . Dr Yassir Abid . . . Georgette . . .
Georgette . . ., Georgette . . ., Georgette . . .
- b i [Two parallel interviews on Israeli TV newscast program, 27 December 1984]:
Michal, a fired [female] teacher; *Yoram Ben-Ami*, a [male] social worker.
- ii . . . Israel has sent a few ‘fighters’, *Micha Kapusta*, *Jeremy Berdanov*, *Yoav Shachar* and others, who trained for free jump with trainer *Shimon Tsachor*, and three [female] parachutists: *Dina*, *Yocheved*, and *Yosepha*.
(*Chadashot*, 21 September 1984)

That first naming is not limited to women (and children), but

On the interaction of Accessibility

rather applies to other groups discriminated against can be clearly seen when we examine the references made to Knesset Member Charles Biton, an oriental Jew, once head of the Israeli 'Black Panthers'. After an initial full name reference, of the thirteen non-pronominal (and non-quotational) references made to him, ten use a first name, three a last name (*Haaretz*, 12 July 1985).

Examples which show that women rather than men tend to be introduced via anchoring are of the following sort:

- [25] a *Oded Ravid, a colonel in the army, and his wife* claim that . . .
(*Haaretz*, 2 December 1985)
- b *A husband and his wife*, activists in the Progressive Party, were attacked.
(*Yediot Ahronot*, 31 August 1984)
- c *Theo Zeibenberg, a Belgian businessman and Miriam, his wife*, decided to settle in the Jewish quarter in Jerusalem . . .
(*Haaretz*, 19 June 1984)
- d *Professor Yoseph Rom and his wife, Yael, engineer Pinchas Shiloni and his wife, Yehudit*, are happy to announce the marriage of their children . . .
(*Haaretz*, 7 June 1984)

Note that in the examples above the activity performed by or to the couples is symmetrical. Especially important is the example in [a]. Despite the fact that the woman in [a] is a major in the army, she is to be accessed as a stereotypically inferred entity. Identifying a specific rather than a stereotypic mental representation for her is therefore at least impaired. As in [24b], and in general, whenever too high an Accessibility Marker is used in initial retrievals, violating the Accessibility requirement results in impaired, or else partial, accessing at most.

Note the following example, where the Israeli TV moderator thanks the all-male participants on his panel:

- [26] Thanks are due to *Haleli* [last name], *KM* [Knesset Member] *Tsaban*, *Mr. Rot-Levi* and *Yamin Swissa* . . .
(The national news, 27 September 1985)

Each man in [26] was referred to slightly differently. What is interesting is that the two Sephardic Jews received no titles (*Haleli*, *Yamin Swissa*), while the two Ashkenazi Jews were titled (*KM Tsaban*, *Mr. Rot-Levi*). The picture with titles for women is somewhat more complex. It seems that in fact more women than men are referred to by courtesy titles (though not

necessarily in addressing). In fact, an experiment performed by Wood *et al.* (1986) showed that an inappropriate address by a courtesy title + last name was perceived by English speaking subjects as less of a violation when the addressee was a woman. Based on a historical tracing of title usage in Hebrew literature, I have elsewhere argued (Ariel 1988a) that courtesy titles are what Mey (1985) has called 'veiled bias'. In other words, the fact that more women than men receive courtesy titles in today's literature as opposed to that of the 1930s, where more men than women received them is not an indication of a decay in male bias. Rather, it marks a change from the more crude, 'old-fashioned' style of Jewish male bias (no titles for women), to a more 'sophisticated' western style (more titles to women), where ceremonial and trivial acts of respect for women are meant to 'veil' other discriminations.

Support for this interpretation comes from the fact that while more women than men may be referred to as *Mrs* than men as *Mr*, far fewer women will be referred to by occupational titles. Women have to do with ceremonial respect only. While the rules for males are that 'once a Dr always a Dr', this is not the case for women. Their academic title is often replaced by a courtesy title. A *Yediot Ahronot* article (16 December 1983), for example, quoted three experts on drugs: two men and one woman. One man was referred to eight times, always as *Dr* . . ., (the counts here ignore pronouns). The other was mentioned six times, five times by his academic title, and once by some other description. Neither were referred to by *Mr* . . . The woman, on the other hand, was referred to as *Mrs* . . . three out of five times. She was 'granted' her title only twice. The same happens on TV interviews (Dr Mina Tzemach → *Mrs Tzemach*, The national news, 19 March 1985; Professor Ruth Lapidot → *Mrs Lapidot*, The national news, 2 April 1985). The following are typical examples showing the gender difference in these title eliminations. The woman in [a] has a Ph.D. too, but she is introduced by a full name + a dependency description which introduces her husband by his academic title. [b] lists all the non-pronominal references made to various members of the legal profession in one article (*Politika*, April 1986). Note that all the males are referred to by their occupational titles. The two women are denied their occupational titles, referred to by courtesy titles only:

- [27] a *Miriam Mar'i*, the widow of *Dr Sami Mar'i* . . .
(*Haaretz*, 23 April 1986)

On the interaction of Accessibility

- b 1 Thus appeared *Mrs Felicia Langer* in the high court

- 2 The verdict was written by *Judge Shilo* . . .
- 3 *The solicitors Churi and Zichroni* . . .
- 4 The teachers . . . hired the services of *Attorney Shlomo Tusia-Cohen* . . .
- 5 Presiding . . . was *Judge Barak* . . .
- 6 The state was represented by . . . *Attorney Renato Yarak* . . .
- 7 This matter was exclusively handled by *Mrs Elbak* and her department.

Thus far we have seen individual examples showing that a comparison between men and women (and Ashkenazi and Sephardic Jewish men, Jews and Arabs) shows that the former are more often referred to by relatively lower Accessibility Markers (full or last names vs. first names, independent expressions vs. dependent ones, and occupational titles vs. courtesy titles). In order to see that the above examples are not accidental, and that this gender difference is indeed quite consistent I have conducted some statistical counts. We begin with initial references. Table 9.1 presents data regarding initial references by names. The first column refers to the total number of names, no matter of what kind, which referents received. The second and the third columns respectively list the percentages of first names and bare last names out of the total number of names given to each of the sexes:⁷

Table 9.1 Names and name types used to initially refer to women and men in the media

Source	Total names		First name		Last name	
	F	M	F	M	F	M
<i>Yediot Ahronot</i> (October 1986)	30 = 60.9%	195 = 73.6%	13 = 43.3%	12 = 6.15%	Ø = Ø%	31 = 15.9%
<i>Koteret Rashit</i> (June 1985)	77 = 81.9%	388 = 91.7%	5 = 6.85%	1 = Ø.3%	1 = 1.3%	67 = 17.3%
<i>Monitin</i> (November 1986)	55 = 98.2%	155 = 96.3%	6 = 10.9%	1 = Ø.65%	Ø = Ø%	11 = 7.1%
Television (February 1985)	20 = 87%	232 = 75.3%	7 = 35%	9 = 3.9%	Ø = Ø%	50 = 21.5%

F = females; M = males

As can be seen, when computing the total number of named people (the numbers on the left-hand column), male bias is not consistent. While two of the journals show a small male discrimination (the gaps for *Yedirot Ahronot* and *Koteret Rashit* are 1.21 and 1.12 respectively), *Monitin* is balanced (the difference not reaching significance) and the television is slightly female-biased (gap = 1.16).⁸ We will not discuss the sources of these differences since the gaps are too small and are best accounted for relying on the different nature of the channels examined. However, the gaps among the sexes regarding first and last names are highly significant statistically. The gaps for first names, which are much more common for women, vary between the extreme *Koteret Rashit* (26.35 times more for women) and the 'mild' *Yedirot Ahronot* (7.04). As for bare last names, these are virtually non-existent for females, while between 7 per cent (*Monitin*) and 21.5 per cent (television) of the men were thus initially introduced.

Dependency descriptions, where one person is introduced as a stereotypically inferred entity of another, show similar findings. Many more women than men are initially referred to in a way that may prevent a specific identification for them:

Table 9.2 Dependency descriptions introducing females and males

<i>Source</i>	<i>Females</i>	<i>Males</i>	<i>Gap</i>
<i>Yedirot Ahronot</i>	19 = 29.7%	32 = 12.1%	2.45
<i>Koteret Rashit</i>	13 = 13.8%	9 = 2.1%	6.57
<i>Monitin</i>	8 = 14.3%	2 = 1.2%	11.5
Television	13 = 56.5%	41 = 13.3%	4.25

In another connection (Ariel 1983), I have examined a special VIP introducer (*mi she . . .*), which is restricted to initial retrievals only. Findings are that whereas for the men all the descriptions contained in the VIP introducer were independent descriptions (93.2 per cent of them referring to their occupations), 43.3 per cent of the women's descriptions were dependent descriptions.

Note that any attempt to motivate such gender differences by reference to the regrettable current (Israeli) reality is doomed to fail. In a male-dominated world, more males than females are famous, hence, more easily identified. If anything follows from the current status of women, it is that more women than men should have been referred to by the relatively lower Accessibility Markers. The reader is also referred back to the specifically

On the interaction of Accessibility

parallel examples above [24–27], where no reasonable justification can be offered for the gender differences regarding naming patterns and the distribution of dependency descriptions among the sexes. Last, that such introductory patterns follow from a hidden ideology more than from reasonable assessments as to who is likely to be familiar to potential addressees can be seen when we examine parallel counts for literary characters, where the reader is only to make believe that he is accessing from memory a mental representation for the fictional character. Not only are the same differences found on the whole, a comparison between female and male authors reveals a consistent quantitative difference. Female authors are less male-biased than male authors. Finally, parallel counts for *Noga* (March 1985), Israel's only feminist magazine, show that even a realistic genre need not make such a great gender differentiation.⁹ We will make do with only a few numbers, but the full data is presented in the Appendix to this chapter.

While the female authors are balanced in the total number of names (about 28 per cent of the characters), male authors named proportionately 1.41 more male than female characters. *Noga*, on the other hand, is here female-biased, naming 1.4 more females than males. The gap between the sexes in first-naming is very large in the fiction, with 80.4 per cent of the named females being first-named by the male authors, as compared with 56.8 per cent for the female authors. The gap for the sexes is here again larger for the male authors, though not dramatically so. *Noga* is slightly female-biased with respect to first-naming, though regarding bare last names it has the greatest sex-dissimilarity, never introducing women by a bare last name. The authors are clearly male-biased in last-name references, male authors introducing 4.21 more men than women by last names. An examination of dependency introductions reveals that *Noga* is balanced, while the authors are male-biased, the male authors again leading in the differentiation (2.15 vs. 1.75 gaps respectively). Interestingly enough, when we calculate the number of males and females in the role of character introducers, i.e. that individual who serves as the basis for the inferred introduction of another, we find that the female authors are balanced, whereas the male authors are extremely male-biased, relying on three men to one woman on the average for this function.

That the above gender differences derive from socio-cultural factors rather than from Accessibility considerations receives additional support when counts are compared cross-culturally and across time. Had naming patterns only been a question of

Accessibility, then to the exclusion of differences in name Informativity, we should not expect dialectal differences among speakers. This is not true, however. Names carry a far more important social role. Cross-culturally I only have some observations made on address patterns, which I will quote, assuming that references, though not identical, are probably not totally different. In Australia, for instance (see Wierzbicka 1986), first names are quite commonly used. British television has recently adopted first-name addresses among interviewers and interviewees, though Israeli television consistently avoids such addresses. Goodenough (1965) found that in Lakalai (a community in the north coast of New Britain) hardly any use is made of names, speakers preferring kin-terms or other relational expressions. In Truk (a community in the Caroline Islands), however, practically everyone, including the chief, is addressed by personal name, rather than by title.

In my historical study of Hebrew literature (Ariel 1986), findings have shown that within a forty year span (1930s vs. 1970s), first-naming (out of total naming) has significantly increased – by 26 per cent. The increase is even more impressive for male characters: 1.6 more in the later period. Since female characters received so much more first-naming in the earlier period (64.8 per cent), the increase for them (1.055 times more) does not actually reach significance. A reverse tendency can be observed for dependency introductions: from 39.8 per cent of the female characters in the 1930s to 25.85 per cent in the 1970s, from 20.5 per cent of the male characters in the 1930s to 13.9 per cent in the 1970s (for the complete statistics see Ariel 1986). Initial retrievals, therefore, are at least to some extent ideology-bound, in this case, gender-bound, dictating that more women than men are referred to using relatively higher Accessibility Markers.

In order to see that subsequent references reveal a similar pattern, I also checked the distribution of various referring expressions in subsequent mentions. Data was collected from *Monitin* (November 1986). Only thirteen pages were screened (7, 9, 11–14, 16, 112–17), those containing short, gossipy notices on people. The reason for this choice was that such columns tend to be ‘name droppers’. In other words, within a short space they mention quite a lot of people, the writer frequently having to resort to relatively lower Accessibility Markers, since the Competition over antecedenthood is great. Indeed, only 29 subsequent references (12.8 per cent) were achieved via pronouns. And this is where the gender differences begin. Tables

On the interaction of Accessibility

9.3 and 9.4 present some male–female comparative data for subsequent retrievals. Table 9.3 presents those categories which were more popular for females, Table 9.4 those categories which were more popular for males:

Table 9.3 Distribution of predominantly ‘feminine’ references

<i>Expression</i>	<i>Females</i>	<i>Males</i>	<i>Gap</i>
Pronoun	9 = 18.75%	20 = 11.2%	1.67
First name	3 = 6.25%	2 = 1.1%	5.58
Dependent	8 = 16.7%	2 = 1.1%	14.88
Courtesy title + name	3 = 6.25%	Ø = 0%	Infinite

Table 9.4 Distribution of predominantly ‘masculine’ references

<i>Expression</i>	<i>Females</i>	<i>Males</i>	<i>Gap</i>
Last name	23 = 47.9%	121 = 68%	1.42
Definite description	Ø = 0%	12 = 6.7%	Infinite
Full names	2 = 4.2%	13 = 7.3%	1.75
Occupational title + name	Ø = 0%	4 = 2.25%	Infinite
Full name + description	Ø = 0%	2 = 1.1%	Infinite

Note that most of the referring expressions are not sex-segregated. Except for courtesy and occupational titles, which seem to be in complementary distribution for the sexes, other expressions are used for either sex.¹⁰ The differences, then, pertain to the popularity of each expression for each sex. A quick look at which categories appear at which table shows that Table 9.3, which contains those expressions more popular for women, lists relatively higher Accessibility Markers. Table 9.4, on the other hand, contains relatively lower Accessibility Markers. To see the different patterns used in subsequent retrievals for the two sexes I have arranged those expressions which actually occurred for each sex in their order of popularity, beginning with the more popular expressions:

[28] The female hierarchy:

Last Name > Pronoun > Full Name > Anchored
Description > First Name / Courtesy Title + Name

[29] The male hierarchy:

Last Name > Pronoun > Full Name > Independent Def.
Desc. > Occupational Title + Name > First
Name / Anchored Description / Full Name + Description

When we examine the gap in popularity of expressions for women and men, we can see that the larger gaps appear to characterize specifically 'feminine' referring expressions. Thus, a 5.6 gap differentiates between women's and men's first names, but actually, even the two first names that occurred for men were direct quotations of other speakers. A 15. gap differentiates between women's and men's anchored descriptions, while other gaps are under 1.8.¹¹ This difference in gap by no means detracts from the significance of the distinctions in 'masculine' descriptions, it nonetheless supports a general tendency noticeable in many fields, namely, that so-called unisex means more women being incorporated into the 'masculine' norm. A counterpart change according to which more men will have adopted a 'feminine' style is not (yet) to be seen.

Finally, note that the findings above are not only discriminatory against women in social terms, referring to them by first names as if they were subordinates (the above naming pattern clearly being asymmetrical), or by anchored descriptions, presenting them as dependent on others. There seems to be a separate discriminating trend which encourages referring to women by higher Accessibility Markers across the board. Thus, as compared with the 6.7 per cent definite descriptions used to refer to men, none occur for women. However, if one were interested in preserving Accessibility appropriateness while socially still discriminating against women, one could easily refer to women using male-biased descriptions (e.g. *the beauty*). Indeed, findings for the VIP introductions mentioned earlier (Ariel 1983) show that of the independent descriptions women received, a third centred around their beauty. Even more out of line with respect to Accessibility principles is the extremely high frequency of anchored descriptions for women in subsequent mentions. In fact, for women, such descriptions are slightly more popular in subsequent mentions than in initial references. Such numbers pose a blatant counter-example to Accessibility theory, since anchored referring expressions are primarily designed to introduce New though inferable entities.

The main point of section 9.2 has been the argument that though often undistinguishable from the social implications of discrimination against women embodied in reference patterns (to be accounted for by Relevance), there is, in addition, a distinct tendency to retrieve mental entities whose heads are females by using relatively higher Accessibility Markers. This is true both in initial retrievals and in subsequent retrievals. Such preferences for higher Accessibility marking imply negative rather than

positive results for women, although I myself have claimed in section 9.1 that the Accessibility Hierarchy corresponds to Kuno's (1987) Empathy scale. The difference between empathy-guided choices and the preferences discussed above is that greater empathy is achieved provided two conditions are fulfilled. The first is that no impairment in retrievability results. The second is that the speaker / writer is indeed in a position to freely choose among two (or more) options. These two conditions are not met when women referred to in the media are concerned.

As we have seen, in initial retrievals, an addressee's ability to actually retrieve the appropriate mental representation is significantly reduced when first names or anchored descriptions are used. To see that subsequent references by higher Accessibility Markers are also far from reflecting greater empathy we quote examples from a particular newspaper article, where many references are made to women (movie stars, to be precise) (*Haaretz*, 11 June 1982):

- [30] a But *Dietrich* always had a *generous* heart.
b i In 'Witness for the Prosecution', in which *Marlene* performed (according to *Marlene*) the best of her parts, she is *ridiculous*.
ii The former goddess of love, *Marlene*, lives *closed in . . .*, walking with the help of *two canes*.
- [31] a In contrast to *Marilyn Monroe* and *Brigitte Bardot . . .*
b . . . and she was a more impressive *bomb* than *Brigitte* or *Marilyn*.

The same actresses star in the above examples: Marlene Dietrich in [30], Marilyn Monroe and Brigitte Bardot in [31]. Comparing the contexts which favour full or last names vs. those favouring first names reveals that the former occur in positive [30a] or neutral [31a] contexts, whereas the latter appear in negative [30b] and/or sexual [31b] contexts. Negative and sexual contexts, then, constitute the basis allowing for a hierarchical relationship between the writer and a woman, thus 'legitimizing' the use of a first name for a woman who is not at all on intimate terms with the writer. The same is true for courtesy-titled women ([32] is taken from the same article as [30-31]):

- [32] a *Dietrich* can charm us as the love Goddess on the stage at the age of 65 . . .
b *Mrs Dietrich* had no idea of the basics of acting theory.

- [33] *Mrs Yarmilla Kratochvilova* disgusts me.
(*Haaretz*, 17 August 1983)

Indeed, had writers wished to express more empathy with the women referred to, women and not men should have been chosen as introductory characters (those individuals serving as the axis for the introduction of another, inferred individual), the marker *par excellence* for expressing empathy. As it is, many more men than women serve for this function. Moreover, it is overwhelmingly women rather than men who are referred to by anchored descriptions, clearly pointing to a non-empathy attitude towards them.

We can conclude, then, that the negative connotations attached to higher Accessibility Markers, when violating Accessibility or when violating social norms (only subordinates are referable by first names) result in negative connotations.¹² In section 9.1, we have reviewed a few examples showing that this Accessibility raising is usable 'against' anyone or anything (see again the examples in [21–22]). We here add another example, tracing the historical development of the name chosen by Israelis in referring to the West Bank, conquered in the 1967 war. Note that the first change, which occurred quite early on, raised the degree of Accessibility marked by the names by lowering their Informativity (in the case of [b] simultaneously eliminating the unpleasant reminder that occupation of foreign territory is involved). The second change only occurred about two years ago. As the territories under discussion are now perceived (by many though by no means all Israelis) to be 'ours', the 'otherness' in referring to them has been replaced, and a conventional Low Accessibility Marker – a proper name (taken from the Bible) is now used both officially and by many even unofficially:

- [34] a *The West Bank* → *The Bank* → *Judea and Samarea*
b *The Occupied Territories* → *The Territories* → *Judea and Samarea*

Section 9.2 has been dedicated to arguing that members of 'other' groups are more prone to Accessibility raisings than members of the dominant group, though most of our examples have come from gender differences. The reader is reminded, however, that special, often anti-Accessibility uses of referring expressions are not always conveyors of negative implications. Firstly, introducing a clearly inaccessible entity as accessible creates a vividness effect. Preferring a lower Accessibility Marker

On the interaction of Accessibility

than is currently appropriate can be used to highlight specific contextual assumptions which an addressee is instructed to employ when processing the utterance. Not even all Accessibility raisings result in a negative effect. When a speaker is in a position to choose either one of two Accessibility Markers, choosing the higher one signals greater empathy. The same applies to raised Accessibility marking aimed at signalling non-familiarity (with named individuals). Such motivations exempt conventionalized Accessibility raisings from generating negative implications. The latter are to be derived only if no other justification can support the employment of the relatively too High Accessibility Marker.

9.3 Appendix

	<i>Female authors</i>		<i>Male authors</i>		<i>Noga</i>	
	<i>F</i>	<i>M</i>	<i>F</i>	<i>M</i>	<i>F</i>	<i>M</i>
Total						
names	90 = 28%	154 = 28.3%	62 = 25.7%	208 = 36.2%	64 = 53.3%	49 = 38.3%
First name	42 = 56.8%	29 = 22.5%	45 = 80.4%	55 = 29.9%	9 = 14.1%	8 = 16.3%
Last name	12 = 13.3%	69 = 44.8%	5 = 8.1%	71 = 34.1%	Ø = Ø%	12 = 24.5%
Dependency	112 = 34.9%	109 = 20%	75 = 31.1%	83 = 14.5%	13 = 10.8%	14 = 10.9%
Independent						
introducer	98 = 52.1%	90 = 47.9%	36 = 25%	108 = 75%	No data available	

Data is based on Almog (1969, 1971), Baron (1943), Ben-Ner (1976), Bichovsky (1976), Cahana-Carmon (1966), Hareven (1980), Oz (1969), Puchachevsky (1930), Shofman (1942), Smilansky (1934), Steinberg (1957) and Yehoshua (1972); six female and six male authors; half of each were writing in the 1930s and half in the 1970s.

Notes

Introduction

- 1 Kasher (1976, 1982) argues a similar point, except that he sets out from a speaker's point of view. He proposes that it is a principle of Rationality which guides the speaker in decisions as to how to express herself most effectively and at least cost.
- 2 In fact, an addressee is not supposed to simply look for the optimally relevant interpretation: she should look for the interpretation that is consistent with the principle of Relevance, i.e. that a rational speaker might have thought would be optimally relevant to the addressee.
- 3 Kempson (1984, 1988, forthcoming) specifically makes this claim for anaphoric expressions, and we shall return to her claims in Chapter 4.
- 4 Øs referring to Encyclopaedic Knowledge are indeed extremely rare, but they do occur in languages other than English. See Part II.
- 5 Examples [9] and [10], I will argue, require an explanation via Relevance (see Chapter 8).
- 6 Evidence for this appears in many experiments: Tulving and Pearlstone (1966), Dooling and Lachman (1971), Dooling and Mullet (1973), Thorndyke (1977), Chi (1978), and others.
- 7 Craik (1977) argues that not only depth of processing, but also elaboration of coding, congruity between item and context, and uniqueness of link between retrieval information and the encoded event all contribute to the ease of retrievals.
- 8 Parallel Distributed Processing researchers are not in fact committed to the view that the primitive units in memory correspond to any intuitive concepts such as persons, activities, etc., but it is common practice to discuss their theory using 'whole' notions.
- 9 I was not at the time aware of Marslen-Wilson *et al.* (1982) and Givón (1983b).
- 10 Two of the texts examined were fictional discourse. The first is the opening section of a novel (Young 1934:7–13). The second is a short story (Paley 1980:43–52). For non-fiction I chose 'Trouble on the Set' (pp.1–12), and Tucker (1985:1–6).

- 11 Unfortunately, the article cited does not go into the question of the acceptability of the references used by the TD speakers.
- 12 Swinney (1982) reaches a similar conclusion about schizophrenic patients. They seem to fail to implement previous context in order to determine the meaning of ambiguous words.
- 13 The three articles are: 'The Weakness of the Strong Man' (*Haaretz*, (1 July 1983); 'Was he or Was he Not' and 'Starting All Over' (both in the special Rosh-ha-Shana Supplement of *Haaretz*, 7 September 1983).
- 14 Noordman (1979) proves a similar point.
- 15 Posner's point is actually more general and applies to VP vs. S conjunctions as well, but such distinctions are not directly relevant to our proposal connecting referring expressions with various degrees of Accessibility, so we shall ignore them.

1 Low Accessibility referring expressions

- 1 For fiction I used Kate Chaupin's 'The Story of One Hour', as translated into Hebrew by R. Giora in *Noga* 8, 1984, and the first half of Alice Walker's 'How Did I Get Away With Killing One of the Biggest Lawyers in the State? It was Easy', translated into Hebrew by R. Giora in *Noga* 11, 1985. Short news items were collected from *Noga* 12, 1986, and *Maariv*, 7 November 1986. The popularized academic pieces appeared in *Zmanim*, pp.57, 96. The two editorial articles were taken from *Haaretz*, 15 October 1986.
- 2 The antecedents counted as belonging either in the Encyclopaedic Knowledge Context or in the Linguistic Context include inferred antecedents as well, since, on the basis of many accessible entities, a speaker can assume the Accessibility of other inferred antecedents. The mechanism responsible for this will be discussed in Part III. Examples of inferred antecedents are *the walls* in [i], inferred from the linguistically mentioned *the room*, and *Beauvoir's friends* in [ii], inferred from our Encyclopaedic entry for Beauvoir:

[i] Mary entered the hotel room. *The walls* were all painted pink. She hated it immediately.

[ii] *All of Beauvoir's friends* attended her funeral. It was a sad sight.

I will also argue in Part III that so-called non-referring uses of definite descriptions (definite descriptions used attributively) are usually legitimate only when they are inferable.

- 3 Evans here relies on the well-established distinction drawn by psychologists between the weaker memory for recall as opposed to the stronger memory for recognition.
- 4 I used my own personal judgements.
- 5 This, of course, does not entail that whenever a description is attached to a proper name the referent is unfamiliar.
- 6 This name hierarchy is right for western cultures, not necessarily so for others.

- 7 The two articles appeared in the Supplement of *Haaretz*, 16 August 1985. The short story is H. Ben-Yehuda's 'Ha-Kadish', in Y. Berlovich (1984) (ed.) *Women's Stories*, Tarmil, Israel.
- 8 Evans had the same intuition, but he assumes that the 'impoliteness' attached to non-naming is general, rather than typical to first-retrieval uses. This tends to be characteristic of philosophers discussing definite descriptions. They seem unconscious of the fact that they actually restrict their attention to first-retrievals only. The point will be taken up in Part III, when I propose my solution to the 'projection problem'.
- 9 This is probably what it means when we say 'you're always on my mind . . .'. The above claim is appropriate mainly for 'mainstream' men. The fact that women, children and minorities are referred to by first names even when they are not intimates of the speaker is to be explained as a special derogatory use (see Part III).
- 10 As noted in the Introduction, references change back to fuller forms after a while, when a speaker wishes to remind the addressee who the referent is. Also, repeated references by full name increase the likelihood that an item will be stored in long-term memory (Kintsch 1970).
- 11 Table 1.6 contains three unexpected findings, but all of them can in fact be explained. First, the fact that names recurred within the same sentence is due to a direct quotation. The relatively high percentage of last names across paragraphs was limited to the discourse topic and to other extremely famous personalities. The very high rate of first names in the two distant positions (51 per cent in all) is due to the fact that one of the articles is about an Arab (and her Arab husband). Members of minorities are often referred to by first names. More on this in Part III.

2 Intermediate Accessibility referring expressions

- 1 Entities may also be inferred on the basis of physically salient entities. Thus, *away* = 'not *here*', which is accessible, *later* = 'at a time which follows *now*', again an accessible reference.
- 2 The data consists of two long interviews (*Noga* 8, 1984, *Noga* 11, 1985), a few short interviews (*Noga* 11), and two translated short stories (*Noga* 11, *Noga* 12, 1986).
- 3 More on this in Part II.
- 4 Data is based on a tape-recorded kitchen-conversation between wife and husband (8 January 1987). There were 132 slots for first- and second-person pronouns / zeros.
- 5 Maclaran (1980) discusses two non-deictic uses of English *this* and *that*. *This*, introducing New entities, will be analysed in Part III as a special use. *That* + a restrictive relative clause, where no existential entailment follows, must be admitted as an exception. Note the following (Maclaran's [3a]):

Notes

- [i] Those students who have completed their coursework by the beginning of the seventh semester are eligible for reduced tuition.

Still, it remains to be seen whether or not this usage can after all be analysed as referring to some extended, inferred entity. It is in fact hard to imagine the above as a first mention sentence, unless addressing a group of students, who are then potential (inferred) antecedents. More on inferred inferences in Part III.

- 6 It is possible to use [7] excluding the addressee, but this would be a marked use, intended to involve the addressee emotionally as if he were in Cyprus with the speaker.
- 7 26 native speakers were asked to rank *this* and *that* in [9] below.
- 8 As everywhere in this book, storage type need not correspond to a specific location. If the PDP views on memory are correct, then what is commonly referred to by location (e.g. 'episodic memory') is characterized by a particular activation pattern rather than by a certain locale.

3 High Accessibility Markers

- 1 Though for Low and Intermediate Accessibility Markers Accessibility is the main convention determining use, the material modified must of course be linguistically represented in conformity with Relevance, etc., to be discussed in Part III.
- 2 But in Chinese, for example, the unmarked High Accessibility Marker is \emptyset . See Li and Thompson (1979).
- 3 Although VP Ellipsis is not under discussion in this book, we may well note that the 'geographic' division is not only inappropriate for referring expressions. Examples such as Schachter's (1977) Clairol TV commercial quoted below show that other context retrievals also depend on degree of Accessibility, rather than on context type. Note the following, where the antecedent is to be inferred from the visual field (showing a blonde), rather than by copying material from LF:
- [i] Does she \emptyset or doesn't she \emptyset ? Only her hairdresser knows for sure [\emptyset = colour her hair with Miss Clairol].
- 4 In fact, Sag (1977) himself questions the sharp distinction argued for by Hankamer and Sag (1976).
- 5 Tanya Reinhart (p.c.) believes that the zero options above may in fact be the result of VP conjunctions rather than sentential conjunctions. It seems highly unlikely, though, that a VP conjunction would combine the stative *was perfectly normal* with the highly active *left in the middle . . .*, for example.
- 6 The point about stressing is equally applicable for other referring expressions, proper names for example, as in:
- [i] John_i thought that JOHN_i / *John_i should put the cat out.

Without heavy stress, we get disjoint reference. The stress cancels that (Stenning 1978:170).

- 7 Terken and Nootboom consider as New what I take to be merely less accessible. Their 'New' referents are not really first-retrieval entities. Rather they are more distant antecedents (not mentioned in the previous clause), or else less salient ones.

4 The Accessibility scale

- 1 There are a few problems with the analysis offered by Marslen-Wilson *et al.* First, as in other work, it is not clear that VP conjunctions are not counted as \emptyset subject cases. But that is not my only reservation. Marslen-Wilson *et al.* eliminated from their counts, and therefore also from their account, cases where there is no free variation, not in terms of pure grammatical considerations, but also when the choice is dictated by ambiguity considerations, as well as when they assess that the addressee would not have been able to actually identify the referent. But why this is so must be accounted for! They thus significantly reduce the power and scope of their account, not to mention the resulting circularity.
- 2 Givón's theory on topic continuity is very much in the spirit of Accessibility theory, although I was not aware of it when I first published claims regarding Accessibility marking (Ariel 1985a). This is probably due to what I conceive to be an unfortunate terminology – topic continuity, rather than referent Accessibility continuity. In fact, I am still not sure whether Givón and his associates (see Givón 1983a) checked only topics, or rather any NP, in their much valued cross-linguistic research (see also Allan 1987 who criticizes Givón on the same issue). However, even if that is the case, the findings can still be used to support the analysis here suggested for any NP type marked as a context-retrieving device. From now on, when I quote findings from the various studies presented in Givón (1983a), I will ignore the syntactic structures (SV vs. VS orders, Passive, Right Dislocation, etc.), as well as generics and indefinites, referred to by Givón and his associates, since I find them irrelevant to the point I am making. I believe that syntactic arrangements of sentence elements are sensitive to intra-textual factors, recency of mention among them, no doubt, but they have nothing to do with 'global' Accessibility, i.e. Accessibility when pertaining to any 'geographic' source. The grammatical roles consistently associated with various Accessibility rates should, I believe, be accounted for by the Keenan–Comrie NP Accessibility hierarchy, thus motivating the high correlation between topics and subjects, etc.
- 3 Names and definite descriptions come out differently under the two criteria. Hence the slash. We will return to this later.
- 4 The relatively larger distances of Japanese will be discussed below, but one qualification must be made immediately. The counts in Japanese do not distinguish between first and subsequent referential acts, and this is unfortunate, because Japanese does not formally

mark definiteness. Thus, the results for full NPs above include indefinites as well.

- 5 Reinhart (p.c.) rightly observes that once we take Informativity as reducing the number of possible worlds, Informativity and Rigidity seem to boil down to one criterion. However, since I am interested in representing the formal coding systems natural languages employ, it seems more appropriate to talk separately of lexical richness (basically dependent on number of morphemes) and rigid forms, since the linguistic means, lengthening (for Informativity), shortening (for Rigidity), are just the opposite.
- 6 Thus, Sperber and Wilson's (1986) stipulation that stressed pronouns are costlier is not sufficient. Terken and Nootboom (1988) present evidence that sometimes (when a referent is less accessible) stressed pronouns facilitate interpretation. Unstressed pronouns are costlier then.
- 7 Sperber and Wilson (1986) do claim that 'costlier' forms should be used when the most accessible interpretation of a 'cheaper' form is rejected. However, when applied to reference interpretation, for this account to work we need to presuppose that the 'cheaper' form refers to highly accessible antecedents. And this is the necessary link provided by Accessibility theory.
- 8 Though this should not be taken to mean that a correctly marked Accessibility totally exempts the addressee from using inferences in reference identification. This issue will be taken up in Part III. Also note that the above does not purport to be a historical account of the reasons that actually caused the development of Accessibility marking systems.
- 9 In fact, I am not convinced that so-called Switch-Reference systems primarily code reference tracking. More on this in Part II.
- 10 Akinnaso (1981), for example, notes that in an aboriginal Delaware Indian society, names may be extremely long (e.g. *Weh-mah-tah-éX-kway*, 'Woman who blooms everywhere like a flower'). Full names, however, are hardly ever used for fear that an enemy might use the name to harm its bearer.
- 11 But note the findings on Japanese quoted above from the same study by Hinds, showing that actually the noun/pronoun distinction is not at all neutralized, as [11] seems to indicate.
- 12 This phenomenon will be discussed in Part II. It appears that the relative opaqueness of the agreement marking in future forms (as opposed to past tense forms) has created this gap between past and future inflections.
- 13 Indeed, Atatürk, for example, the founder of Modern Turkey, recommended the adoption of a last name as a proper step towards 'modernizing' Turkey.

5 Applying Accessibility theory to sentence-level anaphora

- 1 Alternatively, one could take an even stronger position, such as has often been advocated by Kuno (see Kuno 1987, for example). Such

- a position will establish the pragmatic function as the primary account for the linguistic phenomenon at hand, claiming that the syntactic factors involved are rather marginal and / or trivial. This is certainly not the position advocated in this book.
- 2 My use of the term grammaticalization is more typological than historical. In other words, it is meant to generalize over possible vs. impossible grammars, rather than to actually describe a historical mechanism responsible for allowed vs. disallowed pairings of Accessibility Markers with degrees of Accessibility.
 - 3 Kasher (1989) has explicitly made the suggestion that some pragmatic aspects belong in a specifically linguistic pragmatic module. Our Accessibility marking system is then an example for the contents of such a module.
 - 4 Provided, of course, no extra, special meaning is intended so that the longer form is justified.
 - 5 Moreover, as pointed by Hagit Borer (p.c.), it is usually claimed that in pro drop languages pronouns are emphatic. This is definitely wrong for the Hebrew data. And in any case, once pronouns are taken to be emphatic while pro's are not, the 'Avoid Pronoun' principle becomes irrelevant since the pro / pronoun pair are not identical.

6 Zero subjects

- 1 Borer actually finds it hard to pro drop in first person future inflections, but, as will be claimed below, the problem is actually common to all future inflections. One of my actual examples where a first person pro drop occurs is:

[i] im yihiye corex -Ø azkir et wilson . . .
 If (there) will be a need Ø- will-mention-1st acc. Wilson . . .
 (T.R., personal letter)
- 2 Borer (p.c.) does not agree with my conviction, but such disputes are probably characteristic of many 'intuition-based' vs. 'natural discourse-based' analysts. Thus, Cameron (1985) raises a similar complaint regarding the English that is commonly analysed by syntacticians. She too believes that many of the analyses purported to account for 'English' are actually limited to written English.
- 3 Borer (p.c.) notes that this example involves a subjunctive, which is known to cause similar difficulties in English too.
- 4 [ei] is only starred under a sentential analysis for the second conjunct. Hence the comma.
- 5 The story is A. Dorit's *Minim ve-Zanim*, published in *Noga* 10. Borer (p.c.) suggests that such pro drops are restricted to free indirect style, but further textual examinations suggest that this is not necessarily the case. The following example (again translated from Hebrew) from Haim Beer's *Feathers* is typical. The example, originally in Hebrew, is only cited in translation:

- [i] He took out the Parker and started writing . . . When Ø_i finished Ø_i raised his eyes and asked . . . (p.11)

In fact, written Hebrew obviously does not exclude third-person zero subjects across sentence boundaries as the following from a daily newspaper shows:

- [iii] *Robert Dole is Running for Presidency*

. . . afterwards, in 1980, when Ø set his eyes on the presidency, Ø supported the assignment of sums of money to projects for the disabled . . . After Ø received only 607 votes in the pre-elections in New-Hampshire . . ., Ø put the blame on forgery and corruptions, and when his cash-box emptied . . ., Ø took his campaign manager to court. Later, when Ø was asked about it, Ø answered: . . . (*Haaretz*, 14 January 1988)

- 6 The first two examples were found in the translation of Grace Paley's 'The Used-Boy Raisers' by Moshe Ron, published in *Noga* 13. Examples [c] and [d] are from two originally Hebrew stories by Savion Liebrecht, *Apples from the Desert* (1986), Tel-Aviv: Sifriyat Hapoalim.
- 7 Notice that the English original has a zero subject in this case. As mentioned in Part I, I believe that colloquial English often allows first- and second-person pronouns to be dropped. More on this later.
- 8 Data are based on a kitchen conversation between wife and husband (8 January 1987). I have since been fortunate enough to have access to Berman's (1986) data of fourteen adults telling a story based on a picture-book, 'The Frog Story'. Zero subjects seem to be used by most of the speakers, and at least sometimes in environments counter to Borer's thesis.
- 9 Borer, of course, does not purport to outline the actual discourse distribution of various zero subjects. Thus, much of the preceding passages, as well as the next few, should not be viewed as criticizing her syntactic account. I am merely arguing that using her syntactic classification of AGR types to predict the discourse distributional patterns of various zero subjects falls short of the distinctions we can actually diagnose in usage.
- 10 In fact, it is also artificial in terms of Accessibility theory to treat subject zeros separately from object zeros, etc. The decision to exclude non-subject zeros was dictated by scope decisions. See also note 21 below.
- 11 Similarly, Shlonsky (1987) argues that third-person inflections carry a 'discrete' person feature even though it is not overt.
- 12 Actually, the plural feminine future form is common to the third person too.
- 13 That agreement often develops from independent pronouns is not controversial at all. Bosch (1983) cites eighteenth-century sources speculating that the origin of agreement is the pronominal system. Givón (1976) suggests that it is the Indo-European inflectional system which is the exception rather than the rule. According to

Givón, agreement develops in topic shifting constructions. It is then difficult to explain why there is no third-person marking in so many languages which have developed first- and second-person markers. I suggest that Accessibility can account for this consistent difference. As to the question of why in Hebrew future inflections have a prefixed person marker while past tense inflections have a suffixed one, I would tentatively hypothesize that it results from the different word order of Proto-Semitic in different stages. Givón proposes that Proto-Semitic was actually SOV before it changed to VSO. If so, then we can assume that the older forms (future tense) would prefix the subject pronoun to the verb since the subject precedes the verb (we may then have to hypothesize that agreement developed in SV sentences). The past tense inflections, we would claim, developed in an already VSO stage, a linear ordering in favour of a suffixed inflection.

- 14 Compare also the different judgements presented in [6], where connectives specifying a semantic connection between adjacent clauses facilitated *pro* usage.
- 15 Huang (1987) has retorted to such criticisms by arguing that the grammar must abstract away from context. This is, of course, true, but the problem is that quite often this abstraction simply took into account unmarked contexts, calling them 'no context', while ignoring other, possibly marked contexts. The grammar then undergenerates, where it should normally be made to overgenerate.
- 16 The reason why Borer's and Huang's suggestions are not refuted by such examples is that they can always assume that the zero is a zero topic rather than *pro*.
- 17 Huang (1987) vehemently argues against Xu's suggestion to classify the Chinese empty categories as unspecified for the features [anaphor; pronominal]. However, although I find most of Huang's arguments quite convincing, the relevant point for our discussion is that Chinese zero subjects are equally licensed under two seemingly unrelated circumstances: discourse Saliency and syntactic control.
- 18 Huang (1987) presents a few counter-examples to the above claim. Hence, Xu's and Henry's findings must probably be weakened to a pragmatic preference instead of a grammaticalized convention. The same applies to Montalbetti's OPC.
- 19 In fact, Chinese \emptyset s are not too different from English gaps such as the following:

[i] Handle \emptyset with care.

The fact that the gap refers deictically does not mean that any physical object in the environment is thus referable.

- 20 It remains to be checked whether Saramaccan does not in fact allow such discourse zero subjects as well. Hence, the tentativeness in the suggestion that it complements the English *pro* drop data.
- 21 Section 6.2 is devoted to zero subjects, but I should just like to mention an interesting non-subject zero, the marked agreement

marker of Eskimo. According to Bok-Bennema (1984), Eskimo has two agreement markers, which differ in distribution (no information is supplied with respect to the Informativity of the two). The first is a regular *pro*, which can be discourse bound, the other necessarily requires a C-commanding antecedent, though the antecedent does not have to be within the same minimal Governing Category. Eskimo thus creates the very same Accessibility distinctions using two *pro* types rather than a pronoun and a *pro*. When in complementary distribution, as in *The man met his son*, for example, preference is such that the regular *pro* (lower Accessibility Marker) signals disjoint reference, while the marked agreement marker (higher Accessibility Marker) signals co-reference.

7 Clause-linkage and anaphoric marking

- 1 An alternative theory for what the relevant (closure) unit is is Kimball's (1973) proposal that it is the constituent rather than the clause. Reinhart (1983a) suggests that the grammatical constraint she imposes on both syntactic and semantic rules – operation within a C-command domain – supports this hypothesis rather than the clausal one. In fact, it may very well be that it is this more restricted domain which has been subjected to full grammaticalization (for Binding, etc.), but I do not believe that subscribing to such a closure proposal rules out our taking account of considerations pertaining to further availability questions. Thus, while material in a C-command domain already closed may not be available for the highly restricted set of phenomena examined by GB theorists, it may nonetheless be available for the interpretations of (anaphoric) expressions not at all considered by Binding (names, definite descriptions, and pronouns, all of which are only negatively characterized by Binding). In fact it must be, since we know that speakers establish reference dependencies across sentence boundaries. Hence, we will not here refer to the constituent closure proposal, although it seems quite plausible as the relevant unit for extremely High Accessibility Markers. The closure we will discuss must then be a later processing stage, perhaps in a memory buffer which is not as limited as short-term memory. As mentioned in the Introduction, the view of memory most compatible with the claims made in this book does not at all distinguish among two (or three) memory storages. Accessibility theory favours a characterization of memory recently advocated by Parallel Distributed Processing models, namely as information held at (many) different phases of activation.
- 2 The question of why such restrictions exist will be addressed shortly.
- 3 Hermon (1986) argues that at least in Quechua, S-R markers can be analysed as A-bound.
- 4 Similarly, in Pomo, a DS has developed out of the causative marker, probably due to the fact that causees are necessarily distinct from causers (see Haiman and Munro 1983b:xiv, based on Oswalt 1977).

- 5 The Lenakel examples quoted may seem to point to a difference between VP vs. S conjoining, but apparently this is not the case, since it is only the conjunction of future tense with other tenses which is blocked. However, since I do not have access to primary data, the sentential status of the above conjuncts cannot be taken to be conclusive.
- 6 Subject-verb inversion in the relative clause should have the same effect for example, but this cannot be tested since subject-verb inversions are hardly acceptable with pronominal subjects, be they in relative clauses or in main clauses.
- 7 Borer (p.c.) even finds the zero option in [22b] ungrammatical.
- 8 We are not discussing the differences between English *wh*-expressions and *that* in this book, but a most natural account for the differences between them is to claim that *wh*-expressions mark lower Accessibility. The fact that NRRCs obligatorily require a *wh*-word rather than *that* would then follow naturally, except that we would claim that Accessibility in this case has completely grammaticalized. The same difference is found in Hebrew between *she*- and *asher*, which are allowed in both relative clause types as opposed to *ha* (literally 'the'), which can form (some) RRCs but not NRRCs.
- 9 Mittwoch also quotes examples such as the following:
- [i] I had it a moment ago, but now I can't find the damned key.
- where it seems to me that the speaker is using an egocentric reference (the initial *it*), later corrected by the full nominal. Whereas in such examples a division into two non-conjoined sentences does not affect the co-reference interpretation, in most of the examples below it does. We will focus on them, then.
- 10 Note that Reinhart's (1983a) well-taken objection to consider lengthening a crucial factor is based on forwards anaphora examples, where indeed a greater Distance is not predicted to play any role since pronouns, unlike full nominals, do not require a relatively low Accessibility. Hence, a greater Distance will not improve a forwards anaphora, while it may improve a backwards anaphora.
- 11 In a Hebrew newspaper corpus of 717 pronouns I collected, 703 (98 per cent) were forwards anaphora, 1 (0.14 per cent) was a New referent backwards anaphora and 13 (1.81 per cent) were backwards anaphora cases of continuing discourse entities. None of them C-commanded their antecedents. Data are based on all the pronouns found in one front page (*Haaretz*, 4 September 1983), two editorial pages (*Haaretz*, 4 September 1983, 12 September 1983), and four profile articles (*Haaretz*, 7 September 1983, Special Rosh-Hashana Supplement).
- 12 Such occurrences of full NPs seem better accounted for as 'point of view' references (see Part III). Note that once we change the matrix verb to one less naturally calling for a 'direct discourse' reading, reflecting the teacher's point of view, the use of *Walter* becomes less natural:

Notes

- [i] ?The teacher predicted about *him* that *Walter* would HAVE to work harder.
- 13 In response to a comment that her examples are necessarily non-discourse initial McCray has produced the following example in note 12 (p.34):
- [i] *He* had paid his dues back in '65 by running a losing race for county judge, by sacrificing himself, in other words, for the sake of the Democratic party, and a lot of people felt *Bill Stansbury* should be rewarded with the enticing job of mayor this year.
(*Washington Post*, B3, 10 August 1978)
- I propose to view this example on a par with the 'suspense' or fiction 'point of view' pronouns often found in story beginnings. It is a mere coincidence, I believe, that the name above occurs within the same sentence. A hypothetical example of the type I have in mind may run as follows:
- [ii] She was finally alone. She could not decide what to do first since the kids left her office a complete mess.
'Noga', she suddenly heard a voice calling her.
- 14 We ignore here examples such as [27b] which clearly present New entities via a backwards anaphora construction since they were briefly discussed in Ariel (1985a). I argued there that the need to qualify before the main assertion is uttered causes the qualifying clause to precede the main assertion. Qualifying clauses, on the other hand, are precisely those which must be stored and employed when processing the qualified assertion, and should therefore be short, or else the load on the short-term buffer becomes too great. Indeed, such backwards anaphora cases typically have long, often sentential, antecedents.
- 15 A long Distance or separation is not required if the full nominal occurs after a chain of pro or pronominal references. Then, it may be accidental where the change to a lower Accessibility Marker occurs, as it must in the course of the discourse. It may however not be accidental that the lower Accessibility Marker is reserved for the matrix. It may serve to emphasize its pragmatic Prominence. Other pragmatic factors intervene in such decisions, one of them being that of point of view, dictating that certain forms are more appropriate for reflecting one but not another's point of view.

8 The role of inferencing

- 1 The last two claims are mine, not Sperber and Wilson's.
- 2 This is actually not precisely true. A speaker is expected to refer the addressee to the richest context she can, despite the fact that retrievals from long-term storage take longer, but she should still

- choose the most appropriate, i.e. least costly form possible in order to invoke this retrieval.
- 3 Carter (1985), who describes a computer program that deciphers pronominal references in texts written by people with little or no knowledge of the program, found that 12 per cent of the pronouns required some process of inferencing based on commonsense assumptions. I suspect that this percentage is even higher in actual natural discourses.
 - 4 Under a Modularity view of the mind, facilitation in word accessing would not be attributed to plausibility considerations, but rather to the working of a 'dumb' lexical network. Still, even under this theory, it is the central system, where plausibility considerations are operative, which determines which of the actual meanings automatically accessed by the lexical network is the 'right' one. So, while there is controversy over the procedure responsible for the accessing of lexical items, there is no controversy on the issue at hand, namely that higher-level information is functional in determining lexical meanings, reference assignments included.
 - 5 We are here assuming that the number of contextual implications derivable via the two options is constant, ignoring cases where the speaker opts for one of the options despite the fact that it is more costly for the addressee. Such cases, where a speaker's choice is guided by a wish to ensure additional contextual implications, will be discussed in Chapter 9. See also Giora (1988b), who argues that the punch line in jokes is intentionally such that it requires more processing effort.
 - 6 I would like to thank Robyn Carston from whose course on language and cognition I have greatly benefited.
 - 7 In fact, Wilks (1975) suggests that topicality is of no importance in view of the acceptability of both [a] and [b] as continuations of the context sentence:

[i] Context:

John left the window and drank the wine_i on the table_j.

a It_i was good.

b It_j was brown and red.

Sanford and Garrod (1981:197) performed a paraphrase test on the above. It became apparent that though [ib] is grammatical, it is quite disfavoured. Most subjects preferred the following version for [b], where a special phrase (*He noticed*) introduces the unexpected *table*. Moreover, they preferred a Low Accessibility Marker (a definite description) over the originally High Accessibility Marker (a pronoun):

[ii] *He noticed* that *the table* was smooth and round.

See again Broadbent (1973) on the privileged status of topics in reference resolutions.

- 8 Of course, the stressed SHE in [b] can refer to 'Mary' as a

Notes

correction of a previous utterance, but then again, the pronoun still refers to the unexpected referent.

9 The (slightly changed) Hebrew versions are as follows:

- [i] jon hika et hari ki hu hifria la + more.
John hit acc. *Harry* because *he* disturbed the teacher.
- [ii] jon hika et hari ki ze/ hu hika oto kodem.
John hit acc. *Harry* because *this one/* he hit him before.
- [iii] jon hika et hari ki ze/ hu haya mufra.
John hit acc. *Harry* because *this one/* he was disturbed.

10 Yael Ziv (p.c.) proposes the following example for a pronominal reference to an inferred entity:

- [i] Talking of Hollywood, Elizabeth Taylor has been married several times. In fact, *they* all get married several times there.

Ziv judges that [i] can take a non-impersonal reading. I seriously doubt it. [ii] is a real example where it seems that an implied entity is referred to by a pronoun. Again, I suspect that this is due to other reasons. The pronoun in [ii] serves to indicate that the utterance reflects the point of view of Corrie, rather than the speaker:

- [ii] A little more than a year after Corrie settled in the West he married again. *She* was the prettiest girl in town and she had a nice steady temper.
(R. West (1935) 'Life Sentence', in *The Harsh Voice*, reprinted in 1982, London: Virago, pp.42 / 3)

See Chapter 9 on the role of point of view in determining referential form choices.

11 I suspect that the same restriction applies to so-called non-referential, attributive definite descriptions. Note that while [i] (originally from Evans 1982) is acceptable [ii] is not:

- [i] The man who invented the zip . . .
- [ii] The man who invented the moon . . .

The difference is due, I suggest, to the fact that we tend to assume that there is such a unique person (man?) who invented the zip. We do not in the twentieth century assume the same for the moon, though such beliefs have been known to change throughout history.

12 I have to disagree with Clark's (1978) intuitions on the following two examples (his [20, 21]):

- [i] Yesterday there was a killing in Saloon Number Ten. The victim was Wild Bill Hickok.
- [ii] Yesterday there was a killing on Broadway. The getaway bicycle was later found in Central Park.

Says Clark (1978:310): 'In 20(i) we readily assume that the victim referred to is the person killed in the killing mentioned in the first sentence. Killings necessarily have victims, so this bridging

assumption is easy to make. But in 21(ii) we JUST AS READILY ASSUME that the killer made a getaway on a bicycle, and that bicycle is the one being referred to. Yet it is not necessary or even usual for bicycles to play such roles in killings even on Broadway' [emphasis is mine]. I find [ii] considerably less natural than [i] or than [iii], where anchoring of the inferred entity improves the sentence:

[iii] Yesterday there was a killing on Broadway. The getaway bicycle used by the killer was later found in Central Park.

- 13 Alternatively, the gap necessitating the processing effort can be utilized for a more surprising effect as in:

Joey told his girlfriend that he wanted to marry her. The next day his body was covered in bruises.

See again Giora (1988b) on punch lines in jokes.

- 14 See Sanford and Garrod (1981:Ch.6) for a fuller discussion of the role of scenarios. They argue, for example, that even within a given scenario, not all entities are equally accessible.
- 15 See Giora (1983, 1988a) for a discussion of coherent topic progression.
- 16 Note the contrast between [i] and [ii] below, where only [ii] allows non-anchoring, with the understanding of *the child* as 'my child' (the utterance should be read as uttered by a parent to a policeman, say, not to the other parent):

[i] ??lakxu et ha +yalda.
(Impersonal-they)-took away acc. the -child.

[ii] lakxu li et ha +yalda.
(Impersonal-they)-took away to-me acc. the -child.

The extra PP, 'to me', marks the event as affecting the speaker rather than 'the child' (see Berman 1982 for a discussion of such uses). As a result, 'the child' is interpreted as constituting an 'inalienable possession'. The next example is perhaps more acceptable in English too, in the meaning of 'her child', because of the kindergarten frame, where Mary is specifically mentioned as a mother:

[iii] ?Mary was the last mother to arrive at the kindergarten. *The poor child* was impatiently waiting for her.

- 17 Section 8.3 is an abridged version of my treatment of presuppositions in Ariel (1985a:134-65), except that at the time I was using Givenness, rather than Accessibility to describe these forms.
- 18 Note the neutral term 'established association'. The reason for this formulation is my wish to avoid the question of what preceded what. In other words, was the context-type definition extended to a definition by Accessibility? Or was it the other way round, namely, the markers initially defined by Accessibility, naturally specialized into

the specific context-types in first retrieval uses. I tend to believe the latter hypothesis is correct, but will not try to argue for it.

- 19 However, as Stalnaker (1978) notes, the normal process of conversation is such that non-rejection of another's contribution to the discourse is interpreted as consenting to its content. Indeed, we shall later see evidence that even when referring to another's belief, speakers take precautions lest they are interpreted as endorsing a belief they are not really committed to.
- 20 This sentence is better, but it is not extremely natural either. It seems that we process clauses as factual unless otherwise instructed (by some deferrer), and thus the second clause is not such a natural continuation of the first. Hence the oddness.
- 21 Presuppositions are to be analysed as Low Accessibility Markers for the most part, but there are linguistic phenomena which have been considered by some researchers as potentially presupposing which are not categorized as [+Accessibility] according to my proposal. This is relevant for whole propositions rather than for referential expressions, so I decided to ignore it here, but see Ariel (1985a) for a detailed argumentation against some of Keenan's (1971) presuppositions.

9 Special uses of Accessibility Markers

- 1 Provided, of course, unique reference is thus attained. I may have too many neighbours for the addressee to know who I meant, so if it is important that he pick the right individual a more distinguishing description (e.g. *the engineer*) may have to be used. Also, in order to suggest specific contextual implications (such as, the pompous engineer who thinks so highly of herself just because she knows something about machines), I may indeed choose to refer to her as *the engineer* in the example.
- 2 Grammatically, epithets are claimed to behave just like other R expressions, obeying Condition C of Binding (cf. Chomsky 1985:78–80), but see Tai (1978) for differences between English and Chinese in this respect.
- 3 The reader is referred to Bolinger (1979) for many more insights regarding pragmatic considerations operative in choice of pronouns and full nominals in discourse.
- 4 Kuno (1987) is probably not committed to such an account.
- 5 Interestingly enough, Jespersen indicates two types of definite article attachments to proper names specifically reserved for women: '*The* is sometimes used before names of some lady artists', '*The* is sometimes used before a woman's name to confer a depreciatory sense to it'. Strangely enough, he attempts to explain this last derogative use by claiming an effect of respect: 'The speaker, as it were, does not want to be in the state of complete familiarity involved in a personal name with zero' (ibid.).
- 6 Though the examples are originally in Hebrew, they will be quoted

- in English, since nothing hinges on a precise transliteration in such cases.
- 7 Data are based on all initial references made in the magazines listed in Table 9.1, with the exception of *Monitin*, where only thirteen pages were screened (7, 9, 11–14, 112–17).
 - 8 As in Ariel (1986, 1988a), gaps smaller than 1.1 were stipulated to be insignificant.
 - 9 *Noga* has been attacked on practically every stand it has taken since it began coming out in 1980. However, even in the extremely language-sensitive Israeli society (letters to the editor complaining about ‘language and style corruptions’ are extremely common), not one comment has been offered regarding the language it uses or about a lack of clarity. In fact, *Noga*’s copy editors have always been professional copy editors regularly employed in other popular newspapers.
 - 10 The fact that no full name + description occurred for women is probably accidental. Even male entities were hardly retrieved using such Low Accessibility Markers, due, of course, to the relatively high Accessibility of the referents in the material examined.
 - 11 I ignore here the sex-segregated title types, and full name + description (see again note 9).
 - 12 Alternatively, we can say that women are automatically assigned a subordinate position, hence no norm violation occurs when first names are used for women with whom a speaker is not intimate.

References

Abbreviations

CLS Chicago Linguistic Society

JOP Journal of Pragmatics

JVLVB Journal of Verbal Learning and Verbal Behavior

LI Linguistic Inquiry

NELS North Eastern Linguistic Society

- Akinnaso, N. (1981) 'Names and naming principles in cross-cultural perspective', *Names* 29:1, pp.37-63.
- Allan, K. (1987) 'A review of Talmy Givón (ed.) *Topic Continuity in Discourse*', *Language* 63:1, pp.160-4.
- Anderson, A., Garrod, A.C., and Sanford, A.J. (1983) 'The accessibility of pronominal antecedents as a function of episode shifts in narrative texts', *Quarterly Journal of Psychology*, 35A:427-40.
- Anderson, S.R. and Keenan, E.L. (1985) 'Deixis', in T. Shopen (ed.) *Language Typology and Syntactic Description: Vol. 3: Grammatical Categories and the Lexicon*, Cambridge: Cambridge University Press, pp.259-308.
- Aoun, J. (1985) *A Grammar of Anaphora*, Cambridge: MIT Press.
- Ariel, M. (1983) 'Linguistic marking of social prominence: the Hebrew *mi she* introducer', *JOP* 7:4, pp.389-409.
- (1985a) *Givenness Marking*, PhD thesis, Tel-Aviv University.
- (1985b) 'The discourse functions of Given information', *Theoretical Linguistics* 12:2 / 3, pp.99-113.
- (1986) 'Character introductions in Israeli short-stories: a comparative study of male and female authors from two periods', typescript, Tel-Aviv University.
- (1988a) 'Female and male stereotypes in Israeli literature and media: evidence from introductory patterns', *Language and Communication* 8:1, pp.43-68.
- (1988b) 'Retrieving propositions from context: why and how', *JOP*

- 12:3 / 4, *Special Issue: Cognitive Aspects of Language Use*, pp.567–600. Reprinted in A. Kasher (1989) (ed.), pp.43–62.
- (1988c) 'Referring and accessibility', *Journal of Linguistics* 24:65–87.
- (1988d) 'The function of Accessibility in a theory of grammar', paper delivered at the Third Cognitive Symposium at Tel-Aviv University: Text and Context. To appear in *JOP*, 1991.
- Ariel, M. and Giora, R. (forthcoming) 'Linguistic patterns and social patterns: a study in the Hebrew literature of Palestine in the 1930s', in D. Bernstein (ed.) *Women in the Yishuv Period* (tentative title).
- Atkinson, R.C. and Wescourt, K.T. (1975) 'Some remarks on a theory of memory', in P.M.A. Rabbit and S. Doring (eds) *Attention and Performance V*, London: Academic Press.
- Austin, J.L. (1962) *How to do Things with Words*, Cambridge, Mass.: Harvard University Press.
- Ball, C.N. and Prince, E.F. (1976) 'A note on stress and presupposition', *LJ* 8:3, pp.585–6.
- Bardovi-Harlig, K. (1983) 'Pronouns: when "Given" and "New" coincide', in A. Chukerman, M. Marks and J.F. Richardson (eds) *CLS* 19:15–26.
- Bar-Hillel, Y. (1954) 'Indexical expressions', *Mind* 63:359–79.
- Bartlett, F.C. (1932) *Remembering*, Cambridge: Cambridge University Press.
- Bates, E., Kintsch, W., Fletcher, C.R., and Giuliani, V. (1980) 'Recognition memory for surface forms in dialogue: explicit vs. anaphoric reference', in J. Kreiman and A.E. Ojeda (eds), pp.41–9.
- Bentivoglio, P. (1983) 'Topic continuity and discontinuity in discourse: a study of spoken Latin-American Spanish', in T. Givón (1983a) (ed.), pp.255–312.
- Berman, R. (1982) 'Dative marking of the affectee role: data from Modern Hebrew', in *Hebrew Annual Review* 6:35–59.
- (1986) 'Hebrew story data: temporality in discourse', typescript, University of California.
- Bever, T.G., Lackner, J.R., and Kirk, R. (1969) 'The underlying structures of sentences are primary units of immediate speech processing', *Perception and Psychophysics* 5:225–34.
- Biller-Lappin, Y. (1983) *Backwards Anaphora in Discourse*, MA thesis, Tel-Aviv University.
- Blakemore, D. (1987) *Semantic Constraints on Relevance*, Oxford: Basil Blackwell.
- Bok-Bennema, R. (1984) 'On marked pronominal anaphors and Eskimo -pro', in J. Gueron, H.-G. Obenauer, and J.-Y. Pollock (eds) *Grammatical Representation*, Dordrecht: Foris, pp.1–18.
- Bolinger, D. (1979) 'Pronouns in discourse', in T. Givón (1979b) (ed.), pp.289–308.
- Borer, H. (1983) *Parametric Syntax*, Dordrecht: Foris.
- (1984) 'Restrictive relatives in Modern Hebrew', *Natural Language and Linguistic Theory* 2:2, pp.219–60.

References

- (1985) 'Anaphoric AGR', typescript, University of California, Irvine.
- (1986) 'I-subjects', *LI* 17:3, pp.375–416.
- Bosch, P. (1983) *Agreement and Anaphora*, London: Academic Press.
- Bouchard, D. (1983) 'The Avoid Pronoun principle and the Elsewhere principle', in P. Sells and C. Jones (eds) *NELS* 13, University of Mass., Amherst.
- Broadbent, D.E. (1973) *In Defence of Empirical Psychology*, London: Methuen.
- Brown, C. (1983) 'Topic continuity in written English narrative', in T. Givón (1983a) (ed.), pp.313–42.
- Brown, R. (1965) *Social Psychology*, New York: The Free Press.
- Brown, R. and Ford, M. (1961) 'Address in American English', *Journal of Abnormal and Social Psychology* 62:375–85.
- Brown, R. and Gilman, A. (1960) 'The pronouns of power and solidarity', in T. Sebeok (ed.) *Style in Language*, New York: John Wiley and Sons, pp.253–76.
- Byrne, F. (1985) 'PROprox in Saramaccan', *LI* 16:2, pp.313–20.
- Cameron, D. (1985) *Feminism and Linguistic Theory*, London: Macmillan.
- Caramazza, A., Grober, E., Garvey, C., and Yates, J. (1977) 'Comprehension of anaphoric pronouns', *JVLVB* 16:601–10.
- Carden, G. (1978) 'Backwards anaphora in discourse context', typescript, Yale, New Haven. Published in *Journal of Linguistics* 18:2 (1982), pp.361–87.
- Carrel, P.L. and Richter, G. (1981) 'On presuppositions and speaker-beliefs', *Papers in Linguistics: International Journal of Human Communication* 14:1, pp.47–69.
- Carroll, J.M. and Bever, T.G. (1976) 'Sentence comprehension: a case study in the relation of knowledge and perception', in E.C. Carterette and M.P. Friedman (eds) *The Handbook of Perception: Vol. 7, Language and Speech*, New York: Academic Press, pp. 299–344.
- Carroll, J.M., Tanenhaus, M.K., and Bever, T.G. (1978) 'The perception of relations: the interaction of structural, functional and contextual factors in the segmentation of sentences', in W.J.M. Levelt and G.B. Flores d'Arcais (eds), pp.187–218.
- Carter, D. (1985) 'Common sense inference in a focus-guided anaphor resolver', *Journal of Semantics* 4:3, pp.237–46.
- Cassirer, E. (1953) *The Philosophy of Symbolic Forms: Vol. I: Language*, New-Haven, Yale University Press.
- Chafe, W.L. (1976) 'Givenness, contrastiveness, definiteness, subjects, topics and point of view', in C.N. Li (ed.), pp.25–56.
- (1980) (ed.) *The Pear Stories, Vol. III*, in R.O. Freedle (ed.) *Advances in Discourse Processes*, Norwood: Ablex.
- Chang, S.J. (1978) 'Anaphora in Korean', in J. Hinds (1978a) (ed.), pp.223–78.
- Chi, N.T.H. (1978) 'Knowledge structure and memory development', in

- R. Siegler (ed.) *Children's Thinking: What Develops?*, Hillsdale, N.J.: Erlbaum, pp.73–96.
- Chomsky, C. (1971) 'Linguistic development in children from 6 to 10', typescript, Harvard University.
- Chomsky, N. (1980) *Rules and Representations*, New York: Columbia University Press.
- (1981) *Lectures on Government and Binding*, Dordrecht: Foris.
- (1982) *Some Concepts and Consequences of the Theory of Government and Binding*, Cambridge: MIT Press.
- (1985) *Knowledge of Language*, New York: Praeger.
- (1986) *Barriers*, Cambridge: MIT Press.
- Clancy, P.M. (1980) 'Referential choice in English and Japanese narrative discourse', in Chafe (ed.), pp.127–202.
- Clark, E.V. (1978) 'From gesture to word: on the natural history of deixis in language acquisition', in J.S. Bruner and A. Garton (eds) *Human Growth and Development* (Wolfson College Lectures 1976), Oxford: Oxford University Press, pp.85–120.
- Clark, H.H. (1984) 'Referring as a collaborative process', lecture, Tel-Aviv University.
- Clark, H.H. and Haviland, S.E. (1977) 'Comprehension and the Given-New contract', in R.O. Freedle (ed.), pp.1–40.
- Clark, H.H. and Marshall, C.R. (1981) 'Definite reference and mutual knowledge', in A.K. Joshi *et al.* (eds), pp.10–63.
- Clark, H.H., Schreuder, R., and Buttrick, S. (1983) 'Common ground and the understanding of demonstrative reference', *JVLVB* 22:245–58.
- Clark, H.H. and Sengul, C.J. (1979) 'In search of referents for nouns and pronouns', *Memory and Cognition* 7:35–41.
- Cole, P. (1981) (ed.) *Radical Pragmatics*, New York: Academic Press.
- (1983) 'Switch-Reference in two Quechua languages', in J. Haiman and P. Munro (1983a) (eds), pp.1–15.
- Cole, P. and Morgan, J.L. (1975) (eds) *Syntax and Semantics 3: Speech-Acts*, New York: Academic Press.
- Comrie, B. (1983) 'Switch-Reference in Huichol: a typological study', in J. Haiman and P. Munro (1983a) (eds), pp.17–37.
- Cooreman, A. (1983) 'Topic continuity and the voicing system of an ergative language: Chamorro', in T. Givón (1983a) (ed.), pp.425–90.
- Cornish, F. (1986) *Anaphora Relations in English and French: A Discourse Perspective*, London: Croom Helm.
- Craik, F.I.M. (1977) 'Depth of processing in recall and recognition', in S. Dornic (ed.) *Attention and Performance VI*, Hillsdale, N.J.: Lawrence Erlbaum, pp.679–97.
- Craik, F.I.M. and Lockhart, R.S. (1972) 'Levels of processing: a framework for memory research', *JVLVB* 11:671–84.
- Craik, F.I.M. and Tulving, E. (1975) 'Depth of processing and word retention', *Journal of Experimental Psychology-General* 104: 268–94.
- Creider, C. (1978) 'Anaphora in Kalenjin (Nadi-Kipsigis)', in Hinds, (1978a) (ed.), pp.180–222.

References

- Cullen, C. and Harlow, S. (1986) 'Towards an analysis of correlative constructions in Chinese', paper delivered at the autumn 1986 LAGB conference in Edinburgh.
- Dahl, D.A. and Gundel, J.K. (1981) 'Identifying referents for two kinds of pronouns', paper delivered at the 1981 Annual LSA Meeting, New York.
- Dixon, R.M.W. (1980) *The Languages of Australia*, Cambridge: Cambridge University Press.
- Donnellan, K.S. (1966) 'Reference and definite descriptions', *The Philosophical Review* LXXV:3, pp.281-304.
- (1972) 'Proper names and identifying descriptions', in D. Davidson and G. Harman (eds) *Semantics of Natural Language*, Dordrecht: Reidel, pp.356-79.
- Dooling, D.J. and Lachman, R. (1971) 'Effects of comprehension on retention of prose', *Journal of Experimental Psychology* 88:216-22.
- Dooling, D.J. and Mullet, R.L. (1973) 'Locus of thematic effects in retention of prose', *Journal of Experimental Psychology* 97:404-6.
- Doron, E. (1982) 'On the syntax and semantics of resumptive pronouns', *Texas Linguistic Forum* 19:1-48.
- Drogo, J., Mishra, V., and Testen, D. (1984) (eds) *Papers from the Twentieth Regional Meeting of the Chicago Linguistic Society*, Chicago: Chicago Linguistic Society.
- Du Bois, J.W. (1980) 'Beyond definiteness: the trace of identity in discourse', in Chafe (ed.), pp.203-74.
- Dummett, M. (1964) 'Truth', *Proceedings of the Aristotelian Society* LIX (1958-1959), pp.141-62.
- Eakins, B. and Eakins, G. (1976) 'Verbal turn-taking and exchanges in faculty dialogue', in B.L. Dubois and I. Crouch (eds) *The Sociology of the Languages of American Women*, San Antonio, Texas: Trinity University Press.
- (1978) *Sex Differences in Human Communication*, Boston: Houghton Mifflin.
- Ehrlich, K. (1980) 'Comprehension of pronouns', *Quarterly Journal of Experimental Psychology* 32:247-55.
- Eid, M. (1980) 'On the function of pronouns in Egyptian Arabic', paper presented at the Discourse Symposium, University of Wisconsin, Milwaukee.
- (1983) 'On the communicative function of subject pronouns in Arabic', *Journal of Linguistics* 19:2, pp.287-303.
- Enc, M. (1983) 'Anchored expressions', typescript, University of California.
- Engdahl, E. (1979) 'The nested dependency constraint as a parsing principle', in E. Engdahl and M.J. Stein (eds) *Papers presented to Emmon Bach by his Students*, Amherst: University of Massachusetts, pp.76-87.
- (1982) 'Restrictions on unbounded dependencies in Swedish', in E. Engdahl and E. Ejerhed (eds) *Readings on Unbounded Dependencies in Scandinavian Languages*, Stockholm: Almquist and Wiksell International, pp.151-74.

- Enninger, W. (1986) 'Rules of speaking among the old order Amish', paper delivered at the Oxford Linguistic Circle.
- Ennulat, J.H. (1978) 'Participant categories in Fali stories', in J. Grimes (ed.) *Papers on Discourse*, Dallas: Summer Institute of Linguistics.
- Erku, F. and Gundel, J.K. (1985) 'The pragmatics of indirect anaphors', paper delivered at the International Pragmatics Conference, Viareggio, Italy, 3 September 1985.
- Erteschik-Shir, N. and Lappin S. (1979) 'Dominance and the functional explanation of island phenomena', *Theoretical Linguistics* 6:1, pp.41-85.
- Ervin-Tripp, S.M. (1971) 'Sociolinguistics', in J.A. Fishman (ed.) *Advances in the Sociology of Language, Vol. 1: Basic Concepts, Theories and Problems: Alternative Approaches*, The Hague: Mouton, pp.15-91.
- (1972) 'On sociolinguistic rules: alternation and co-occurrence', in J.J. Gumperz and D. Hymes (eds), pp.213-50.
- Evans, G. (1982) *The Varieties of Reference* (ed. J. McDowell) Oxford: Clarendon Press.
- Fauconnier, G. (1984) *Espaces Mentaux*, Paris: Minuit.
- Fillmore, C.J. (1975) *Santa-Cruz Lectures on Deixis 1971*, Indiana: Indiana University Linguistics Club.
- Fillmore, C.J. and Langendoen, D.T. (1971) (eds) *Studies in Linguistic Semantics*, New York: Holt, Rinehart & Winston.
- Finer, D.L. (1985) 'The syntax of Switch-Reference', *LI* 16:1, pp.35-55.
- Flores d'Arcais, G.B. (1978) 'The perception of complex sentences', in W.J.M. Levelt, and G.B. Flores d'Arcais (eds), pp.155-85.
- Fodor, J.A. (1983) *The Modularity of Mind*, Cambridge: MIT Press.
- Fodor, J.A., Bever, T.G., and Garrett, M. (1974) *The Psychology of Language: An Introduction to Psycholinguistics and Generative Grammar*, New York: McGraw-Hill.
- Foley, W.A. and Van Valin, R.D., Jr (1983) *Functional Syntax and Universal Grammar*, Cambridge: Cambridge University Press.
- Fox, A. (1983) 'Topic continuity in Biblical Hebrew narrative', in T. Givón (1983a) (ed.), pp.215-54.
- Fox, B.A. (1987) *Discourse Structure and Anaphora*, Cambridge: Cambridge University Press.
- Freedle, R.O. (ed.) (1977) *Discourse Production and Comprehension: Discourse Processes: Advances in Research and Theory, Vol. 1*, Norwood, New Jersey: Ablex.
- Frege, G. (1892) 'On sense and reference', in F. Zabeeh *et al.* (1974) (eds), pp.117-40.
- Friedrich, P. (1972) 'Social context and semantic feature: the Russian pronominal usage', in J.J. Gumperz and D. Hymes (eds), pp.270-300.
- Garnham, A.J. and Oakhill, J. (1985) 'On-line resolution of anaphoric pronouns: effects of inference making and verb semantics', *British Journal of Psychology* 76:385-93.
- Garrod, S.C. and Sanford, A.J. (1982) 'The mental representation of

References

- discourse in a focused memory system: implications for the interpretation of anaphoric noun phrases', *Journal of Semantics*, 1:1, pp.21-41.
- Garrod, S.C. and Trabasso, T. (1973) 'A dual memory information processing interpretation of sentence comprehension', *JVLVB* 12:155-67.
- Garvey, C., Caramazza, A., and Yates, J. (1974-5) 'Factors influencing assignment of pronoun antecedents', *Cognition* 3:227-43.
- Gasser, M. (1983) 'Topic continuity in written Amharic narrative', in T. Givón (1983a) (ed.), pp.95-140.
- Gazdar, G.J.M. (1979a) 'A solution to the projection problem', in C.K. Oh and D. Dinneen (eds), pp.57-90.
- (1979b) *Pragmatics: Implicature, Presupposition and Logical Form*, New York: Academic Press.
- Giora, R. (1983) 'Segmentation and segment cohesion: on the thematic organization of the text', *Text*, 3:2, pp.155-82.
- (1988a) 'On the informativeness requirement', *JOP* 12:3 / 4, *Special Issue: Cognitive Aspects of Language Use*, pp.547-66. Reprinted in A. Kasher (1989) (ed.), pp.63-96.
- (1988b) 'Cognitive aspects of the joke', paper delivered at the Third Cognitive Symposium at Tel-Aviv University: Text and Context. To appear in *JOP* (1991).
- Givón, T. (1976) 'Topic, pronoun and grammatical agreement', in C.N. Li (ed.), pp.149-88.
- (1979a) *On Understanding Grammar*, New York: Academic Press.
- (1979b) (ed.) *Syntax and Semantics 12: Discourse and Syntax*, New York: Academic Press.
- (1980) *Ute Reference Grammar*, Ignacio, Colorado: Ute Press.
- (1983a) (ed.) *Topic Continuity in Discourse: A Quantitative Cross-Language Study*, Amsterdam: John Benjamins.
- (1983b) 'Topic continuity in discourse: an introduction', in T. Givón (1983a) (ed.), pp.1-42.
- (1983c) 'Topic continuity and word order pragmatics in Ute', in T. Givón (1983a) (ed.), pp.141-214.
- (1983d) 'Topic continuity in spoken English', in T. Givón (1983a) (ed.), pp.343-64.
- (1983e) 'Topic continuity in discourse: the functional domain of Switch Reference', in J. Haiman and P. Munro (1983a) (eds), pp.51-82.
- Gleason, H.A., Jr (1968) 'Contrastive analysis in discourse structure', in J.E. Alatis (ed.) *Georgetown University Monograph Series on Languages and Linguistics* 21, Washington, pp.39-65.
- Goodenough, W.H. (1965) 'Personal names and modes of address in two oceanic societies', in M.E. Spiro (ed.) *Context and Meaning in Cultural Anthropology*, New York: The Free Press, pp.265-76.
- Goodwin, W.W. (1968) *A Greek Grammar*, New York: Macmillan.
- Graham, A. (1973) 'The making of a nonsexist dictionary', in *Ms* 2, reprinted in B. Thorne and N. Henley (1975) (eds), pp.57-63.

- Greenberg, J.H. (1978) 'How does a language acquire gender markers?', in J.H. Greenberg (ed.) *Universals of Human Language*, Vol. 3, Stanford: Stanford University Press, pp.47-82.
- Grice, H.P. (1975) 'Logic and conversation', in P. Cole and J.L. Morgan (eds), pp.41-58.
- (1981) 'Presupposition and conversational implicature', in P. Cole (ed.), pp.183-98.
- Grober, E.H., Beardsley, W., and Caramazza, A. (1978) 'A parallel function strategy in pronoun assignment', *Cognition* 6:117-33.
- Grossman, R.E., San, L.J., and Vance, T.J. (1975) (eds) *Papers from the Parasession on Functionalism*, Chicago: CLS.
- Grosz, B.J. (1981) 'Focussing and description in natural language dialogues', in A.K. Joshi *et al.* (eds), pp.84-105.
- Gumperz, J.J. and Hymes, D. (1972) (eds) *Directions in Sociolinguistics: The Ethnography of Speaking*, New York: Holt, Rinehart, and Winston.
- Gundel, J.K. (1980) 'Zero NP-anaphora in Russian: a case of topic prominence', in J. Kreiman and A.E. Ojeda (eds), pp.139-46.
- Haegeman, L. (1984) 'Remarks on adverbial clauses and definite NP-anaphora', *LI* 15:4, pp.712-15.
- Haiman, J. (1983) 'On some origins of Switch-Reference marking', in J. Haiman and P. Munro (1983a) (eds), pp.105-28.
- Haiman, J. and Munro, P. (1983a) (eds) *Switch-Reference and Universal Grammar*, Amsterdam: John Benjamins.
- (1983b) 'Introduction', in J. Haiman and P. Munro (1983a) (eds) pp.ix-xv.
- Halliday, M.A.K. and Hasan, R. (1976) *Cohesion in English*, London: Longman.
- Hankamer, J. and Sag, I.A. (1976) 'Deep and surface anaphora', *LI* 7:3, pp.391-428.
- Harris, M. (1978) 'The marking of definiteness in romance', in J. Fisiak (ed.) *Historical Morphology*, The Hague: Mouton, pp.141-56.
- Henry, A. (1986) 'Subject-object asymmetry in Chinese', paper delivered at the autumn 1986 LAGB conference in Edinburgh.
- Hermon, G. (1985) *Syntactic Modularity*, Dordrecht: Foris.
- (1986) 'Switch-Reference in Quechua: an A-binding analysis', paper presented at the Tel-Aviv Linguistics Colloquium, 29 May 1986.
- Hinds, J. (1978a) (ed.) *Anaphora in Discourse*, Alberta: Linguistic Research.
- (1978b) 'Anaphora in Japanese conversation', in J. Hinds (1978a) (ed.), pp.136-79.
- (1983) 'Topic continuity in Japanese', in T. Givón (1983a) (ed.), pp.43-95.
- (1986) *Japanese*, London: Croom Helm.
- Hirst, W. and Brill, G.A. (1980) 'Contextual aspects of pronoun assignment', *JVLVB* 19:168-75.
- Hobbs, J.R. (1976) 'Pronoun resolution', research report 76-7, Department of Computer Sciences, City College, City University of New York.

References

- Hoijer, H. (1949) 'Tonkawa syntactic suffixes and anaphoric particles', *South Western Journal of Anthropology* 5:37-55.
- Horn L.R. (1984) 'Towards a new taxonomy for pragmatic interference: Q-based and R-based implicature', in D. Schrifin (ed.) *Gurt 84: Meaning, Form and Use in Context: Linguistic Applications*, Washington: Georgetown University Press, pp.11-42.
- Huang, C.T.J. (1984) 'On the distribution and reference of empty pronouns', *LI* 15:4, pp.531-74.
- (1987) 'Remarks on empty categories in Chinese', *LI* 18:2, pp.321-37.
- Isard, S. (1975) 'Changing the context', in E.L. Keenan (ed.) *Formal Semantics of Natural Language*, Cambridge: Cambridge University Press, pp.287-96.
- Jacobsen, W.H., Jr (1983) 'Typological and genetic notes on Switch-Reference systems in North American Indian Languages', in J. Haiman and P. Munro (1983a) (eds), pp.151-83.
- Jaggat, P. (1983) 'Some dimensions of Topic-NP continuity in Hausa narrative', in T. Givón (1983a) (ed.), pp.365-424.
- Jarvella, R.J. (1971) 'Syntactic processing of connected speech', *JVLVB* 10:409-16.
- Jespersen, O. (1949) *A Modern English Grammar on Historical Principles, Vol. VII*, Copenhagen: Munksgaard.
- Joshi, A.K., Webber, B.L., and Sag, I.A. (1981) (eds) *Elements of Discourse Understanding*, Cambridge: Cambridge University Press.
- Karttunen, L. (1973) 'Presuppositions of compound sentences', *LI* 4:2, pp.169-93.
- (1977) 'Presupposition and linguistic context', in A. Rogers, B. Wall, and J.P. Murphy (eds) *Proceedings of the Texas Conference on Performatives, Presuppositions, and Implicatures*, Arlington: Center for Applied Linguistics.
- Karttunen, L. and Peters, S. (1979) 'Conventional implicature', in C.K. Oh and D. Dinneen (eds), pp.1-56.
- Kasher, A. (1976) 'Conversational maxims and rationality', in A. Kasher (ed.) *Language in Focus: Foundations, Methods and Systems*, Dordrecht: Reidel, pp.197-216.
- (1982) 'Gricean inference reconsidered', *Philosophica* (Gent) 29:25-44.
- (1984) 'On the psychological reality of pragmatics', *JOP* 8:4, pp.539-57.
- (1988) 'A pragmatic module: why, what, where?', paper delivered at the Third Cognitive Symposium at Tel-Aviv University: Text and Context. To appear in *JOP* (1991).
- (1989) (ed.) *Cognitive Aspects of Language Use*, Amsterdam: Elsevier Science Publishers, B.V.
- Keenan, E.L. (1971) 'Two kinds of presupposition in natural language', in C.J. Fillmore and D.T. Langendoen (eds), pp.45-54.
- (1987) *Universal Grammar: 15 Essays*, London: Croom Helm.

- Kempson, R.M. (1975) *Presupposition and the Delimitation of Semantics*, Cambridge: Cambridge University Press.
- (1984) 'Weak crossover, logical form and pragmatics', paper delivered at GLOW, April 1984.
- (1988) 'Grammar and conversational principles', in F. Newmeyer (ed.) *Cambridge Linguistic Survey, Vol. 2*, Cambridge: Cambridge University Press.
- (forthcoming) 'Logical form: the grammar cognition interface', *Journal of Linguistics*.
- Kimball, J. (1973) 'Seven principles of surface structure parsing in natural languages', *Cognition* 2:1, pp.15-47.
- Kintsch, W. (1970) *Learning and Conceptual Processes*, New York: Wiley.
- Kintsch, W. and Monk, D. (1972) 'Memory storage of complex information in memory: some implications of the speed with which inferences can be made', *Experimental Psychology* 94:25-32.
- Kramer, C. (1975) 'Sex-linked differences in address systems', *Anthropological Linguistics*, 17:2, pp.198-210.
- Krámský, J. (1972) *The Article and the Concept of Definiteness in Language*, The Hague: Mouton.
- Kreiman, J. and Ojeda, A.E. (1980) (eds) *Papers from the Parasession on Pronouns and Anaphora*, Chicago: Chicago Linguistic Society.
- Kuno, S. (1972b) 'Pronominalization, reflexivization and direct discourse', in *LI* 3:2, pp.161-96.
- (1972b) 'Functional sentence perspective', *LI* 3:3, pp.269-320.
- (1975) 'Three perspectives in the functional approach to syntax', in R.E. Grossman *et al.* (eds), pp.276-336.
- (1978) 'Generative discourse analysis in America', in W. Dressler (ed.) *Current Trends in Text Linguistics*, Berlin: de Gruyter, pp.275-94.
- (1979) 'On the interaction between syntactic rules and discourse principles', typescript.
- (1987) *Functional Syntax*, Chicago: The University of Chicago Press.
- Kurzon, D. (1981) '"This" and "that" in legal English', typescript, Hebrew University at Jerusalem.
- Lakoff, R. (1974) 'Remarks on *this* and *that*', in C.J. Fillmore, G. Lakoff, and R. Lakoff (eds) *Berkeley Studies in Syntax and Semantics I*, Berkeley: Department of Linguistics.
- Lambert, W.E. (1967) 'The use of *tu* and *vous* as forms of address in French Canada: a pilot study', *JVLVB* 6:614-17.
- Langendoen, D.T. and Savin, H.B. (1971) 'The projection problem for presuppositions', in C.J. Fillmore and D.T. Langendoen (eds), pp.55-62.
- Lesgold, A.M., Roth, S.F., and Curtis, M.E. (1979) 'Foregrounding effects in discourse comprehension', *JVLVB* 18:291-308.
- Levelt, W.J.M. and Flores d'Arcais, G.B. (1978) (eds) *Studies in the Perception of Language*, Chichester: John Wiley & Sons.

References

- Levinsohn, S. (1978) 'Participant reference in Inga narrative discourse', in J. Hinds (1978a) (ed.), pp.69–135.
- Levinson, S.C. (1983) *Pragmatics*, Cambridge: Cambridge University Press.
- (1985) 'Minimization and conversational inference', paper delivered at the International Pragmatics Conference, Viareggio, Italy, 3 September 1985.
- Levy, E. (1982) 'Toward an objective definition of "Discourse Topic"', in K. Tuite, R. Schneider, and R. Chametzky (eds) *Papers from the Eighteenth Regional Meeting of the Chicago Linguistic Society*, Chicago: CLS, pp.259–304.
- Li, C.N. (1976) (ed.) *Subject and Topic*, New York: Academic Press.
- Li, C.N. and Thompson, S.A. (1979) 'Third-person pronouns and zero-anaphora in Chinese discourse', in T. Givón (1979b) (ed.), pp.311–35.
- Linde, C. (1979) 'Focus of attention and the choice of pronouns in discourse', in T. Givón (1979b) (ed.), pp.337–54.
- Longacre, R. (1979) 'The paragraph as a grammatical unit', in T. Givón (1979b) (ed.), pp.115–34.
- Lujan, M. (1986) 'Stress and binding of pronouns', in A.M. Farley and K.E. McCullough (eds) *CLS 22 Part 2: Papers from the Parasession on Pragmatics and Grammatical Theory*, Chicago: CLS, pp.424–38.
- Lyons, J. (1975) 'Deictic as the source of reference', in E.L. Keenan (ed.) *Formal Semantics of Natural Language*, London and New York: Cambridge University Press, pp.61–83.
- (1977) *Semantics: Vol. 1 and 2*, Cambridge: Cambridge University Press.
- McCawley, J.D. (1979) 'Presupposition and discourse structure', in C.K. Oh and D. Dinneen (eds), pp.371–88.
- McClelland, J.L. and Rumelhart, D.E. (1986a) (eds) *Parallel Distributed Processing*, (two volumes), Cambridge: MIT Press.
- (1986b) 'A distributed model of human learning and memory', in J.L. McClelland and D.E. Rumelhart (1986a) (eds), pp.170–215.
- McClelland, J.L., Rumelhart, D.E., and Hinton, G.E. (1986) 'The appeal of parallel distributed processing', in J.L. McClelland and D.E. Rumelhart (1986a) (eds), pp.3–44.
- McCloskey, J. (1979) *Transformational Syntax and Model-Theoretic Semantics: A Case Study in Modern Irish*, Dordrecht: Reidel.
- McCloskey, J., and Hale, K. (1984) 'On the syntax of person-number inflection in Modern Irish', *Natural Language and Linguistic Theory* 1:4, pp.487–533.
- McConnell-Ginet, S. (1979) 'Prototypes, pronouns and person', in M. Mathiot (ed.) *Ethnolinguistics: Boas, Sapir and Whorf Revisited*, The Hague: Mouton, pp.63–84.
- McConnell-Ginet, S., Borker, R., and Furman, N. (1980) (eds) *Women and Language in Literature and Society*, New York: Praeger.
- McCray, A. (1980) 'The semantics of backward anaphora', in T. Jensen (ed.) *Cahiers Linguistiques d'Ottawa*, volume 9, Ottawa, pp.329–43.
- MacKay, D.G. and Fulkerson, D.C. (1979) 'On the comprehension and

- production of pronouns', *JVLVB* 18:661-73.
- Maclaran, R. (1980) 'On two asymmetrical uses of the demonstrative determiners in English', *Linguistics* 18, pp.803-20.
- McLendon, S. (1987) 'Switch-Reference, case marking, and discourse strategies in Eastern Pomo', paper delivered at the Oxford Linguistic Circle, Oxford, 3 February 1987.
- Maling, J. and Zaenan, A. (1982) 'A base-generated account of Scandinavian extraction phenomena', in P. Jacobson and G.K. Pullum (eds) *The Nature of Syntactic Representation*, Dordrecht: Reidel, pp.229-82.
- Maratsos, M. (1973) 'The effects of stress on the understanding of pronominal coreference in children', *Journal of Psycholinguistic Research* 2:1-8.
- Marslen-Wilson, W., Levy, E., and Komisarjevsky Tyler, L.K. (1982) 'Producing interpretable discourse: the establishment and maintenance of reference', in R. Jarvella and E. Klein (eds) *Speech, Place and Action: Studies in Deixis and Related Topics*, Chichester: John Wiley & Sons, pp.339-78.
- Marslen-Wilson, W. and Komisarjevsky Tyler, L.K. (1987) 'Against modularity', in J.L. Garfield (ed.) *Modularity in Knowledge Representation and Natural Language Understanding*, Cambridge: MIT Press.
- Marslen-Wilson, W., Komisarjevsky Tyler, L.K., and Seidenberg, M. (1978) 'Sentence processing and the clause boundary', in W.J.M. Levelt and G.B. Flores d'Arcais (eds), pp. 219-46.
- Martyna, W. (1980) 'The psychology of the generic masculine', in S. McConnell-Ginet *et al.* (eds), pp.69-78.
- Matisoff, J.A. (1973) *The Grammar of Lahu*, Berkeley: University of California Press.
- Mey, J.L. (1985) *Whose Language?: A Study in Linguistic Pragmatics*, Amsterdam: John Benjamins.
- Miller, C. and Swift, K. (1976) *Words and Women: New Language in New Times*, Garden City, New York: Doubleday Anchor.
- Minsky, M. (1977) 'Frame-system theory', in P.N. Johnson-Laird and P.C. Wason (eds) *Thinking: Readings in Cognitive Science*, Cambridge: Cambridge University Press, pp.355-76.
- Mittwoch, A. (1983) 'Backward anaphora and discourse structure', *JOP* 7:2, pp.129-40.
- Mohanan, K.P. (1983) 'Functional and anaphoric control', *LI* 14:4, pp.641-74.
- Monsell, S. (1984) 'Components of working memory underlying verbal skills: a "distributed capacities" view', in H. Bouma and D.G. Bouwhuis (eds) *Attention and Performance X: Control of Language Processes*, pp.327-50.
- Montalbetti, M.M. (1984) *After Binding: On the Interpretation of Pronouns*, PhD thesis, MIT.
- Morton, J. (1977) 'Facilitation in word recognition: experiments causing change in the Logogen Model', published in P.A. Kolars, M.E.

References

- Wroldal, and H. Bouma (1979) (eds) *Proceedings of the Conference on the Processing of Visible Language*, New York: Plenum Press, pp.259–68.
- (1979) 'Word recognition', in J. Morton and J.C. Marshall (eds) *Psycholinguistic Series Vol. 2: Structures and Processes*, London: Paul Elek, pp.107–56.
- Nilsen, A.P. (1972) 'Sexism in English: a feminist view', in N. Hoffman, C. Secor, and A. Tinsley (eds) *Female Studies VI*, Old Westbury, New York: The Feminist Press.
- (1973) 'The correlation between gender and other semantic features in American English', paper presented to the Linguistic Society of America.
- (1977) 'Linguistic sexism as a social issue', in A.P. Nilsen, H. Bosmajian, J.L. Gershuny, and J.P. Stanley (eds) *Sexism in Language*, Urbana, Illinois: National Council of Teachers of English.
- Noordman, L.G.M. (1979) *Inferring from Language*, Berlin: Springer-Verlag.
- Nooteboom, S., Kruyt, T., and Terken, J. (1980) 'What speakers and listeners do with pitch accents: some explorations', manuscript no. 397, Instituut voor Perceptie Onderzoek, Eindhoven.
- Norman, D., Rumelhart, D.E., and the LNR Research Group (1975) *Explorations in Cognition*, San Francisco: Freeman.
- Nunberg, G.L. (1979) 'The non-uniqueness of semantic solutions: polysemy', *Linguistics and Philosophy* 3:2, pp.143–84.
- Oakhill, J. (1982) 'Constructive processes in skilled and less-skilled comprehenders' memory for sentences', *British Journal of Psychology* 73:13–20.
- Oakhill, J. and Yuill, N. (1986) 'Pronoun resolution in skilled and less-skilled comprehenders: effects of memory load and inferential complexity', *Language and Speech* 29:1, pp.25–37.
- Oh, C.K. and Dinneen, D. (1979) (eds) *Syntax and Semantics Vol. 11: Presupposition*, New York: Academic Press.
- Oswalt, R. (1977) 'The causative as a reference switching mechanism in Western Pomo', in *Berkeley Linguistic Society*: 3, Berkeley: University of California Press, pp.46–54.
- Ouhalla, J. (1987) 'Verbless sentences', paper presented at University College, London, 29 April 1987.
- Perrin, M. (1978) 'Who's who in Mambila folk stories', in J.E. Grimes (ed.) *Papers on Discourse*, Dallas: Summer Institute of Linguistics, pp.115–18.
- Piaget, J. (1924) *The Language and Thought of the Child*, New York: Humanities Press.
- Posner, R. (1980) 'Semantics and pragmatics of sentence connectives in natural language', in J.R. Searle, F. Kiefer, and M. Bierwisch (eds) *Speech Act Theory and Pragmatics*, Dordrecht: Reidel, pp.169–203.
- Prince, E.F. (1978a) 'On the function of existential presupposition in discourse', in D. Farkas, W. Jacobsen, and C. Tudrys (eds) *Papers from the Fourteenth Regional Meeting of the Chicago Linguistic*

- Society*, Chicago: CLS, pp. 362–76.
- (1978b) 'A comparison of WH-clefts and IT-clefts in discourse', *Language* 54:4, pp.883–906.
- (1979) 'On the Given / New distinction', in W. Hanks, C. Hofbauer, and P. Clyne (eds) *Papers from the Fifteenth Regional Meeting of the Chicago Linguistic Society*, pp.267–78.
- (1981a) 'Toward a taxonomy of Given-New information', in P. Cole (ed.), pp.223–55.
- (1981b) 'On the inferencing of indefinite this NP's', in A.K. Joshi *et al.* (eds), pp.231–50.
- (1985) 'Fancy syntax and "Shared Knowledge"', *JOP* 9:1, pp.65–81.
- Quine, W.V. (1960) *Word and Object*, Cambridge: MIT Press.
- Redeker, G. (1985) 'References to story characters in interactive and non-interactive narration', paper delivered at the International Pragmatics Conference, Viareggio, Italy, 3 September 1985.
- Reinhart, T. (1981a) 'Pragmatics and linguistics: an analysis of sentence topics', in *Philosophica* 27:1, *Special Issue on Pragmatic Theory*, pp.53–94.
- (1981b) 'Definite NP anaphora and C-command domains', *LI* 12:4, pp.605–35.
- (1983a) 'Coreference and bound anaphora: a restatement of the anaphora questions', *Linguistics and Philosophy*, 6:1, pp.47–88.
- (1983b) *Anaphora and Semantic Interpretation*, Worcester: Croom Helm.
- (1984) 'Center and periphery in the grammar of anaphora', in B. Lust (ed.) *Studies in the Acquisition of Anaphora*, Dordrecht: Reidel, pp.123–50.
- (1986) 'On the interpretation of "donkey"-sentences', in E. Traugott, A. Ter Meulen, J. Snitzer Reilly, and C.A. Ferguson (eds) *On Conditionals*, Cambridge: Cambridge University Press.
- Rizzi, L. (1982) 'Negation, WH-movement and the null subject parameter', in L. Rizzi (ed.) *Issues in Italian Syntax*, Dordrecht: Foris, pp.117–84.
- Rochester, S.R. and Martin, J.R. (1977) 'The art of referring: the speaker's use of noun phrases to instruct the listener', in R.O. Freedle (ed.), pp.245–69.
- Russell, B. (1905) 'On denoting', in F. Zabeeh *et al.* (1974) (eds), pp.141–58.
- Sachs, J.S. (1967) 'Recognition memory for syntactic and semantic aspects of connected discourse', *Perception and Psycholinguistics* 2:437–42.
- Sacks, M. and Schegloff, E.A. (1979) 'Two preferences in the organization of reference to persons', in G. Psathas (ed.) *Everyday Language: Studies in Ethnomethodology*, New York: Irvington, pp.15–21.
- Sadock, J.M. (1974) 'Read at your own risk: syntactic and semantic horrors you can find in your medicine chest', in M.W. La Galy, R.A. Fox and A. Bruck (eds), *CLS* 10:599–607.

References

- Sag, I.A. (1977) *Deletion and Logical Form*, MIT PhD dissertation, reproduced by Indiana University Linguistics Club, Bloomington, Indiana.
- Sag, I. and Hankamer, J. (1984) 'Toward a theory of anaphoric processing', *Linguistics and Philosophy* 7:3, pp.325-45.
- Sanford, A.J. and Garrod, S.C. (1981) *Understanding Written Language*, Chichester: John Wiley & Sons.
- (1985) 'On the real-time character of interpretation during reading', *Language and Cognitive Processes* 1:1, pp.43-59.
- Schachter, P. (1977) 'Does she or doesn't she?', *LI* 8:4, pp.763-7.
- Schank, R.C. (1980) 'Language and memory', *Cognitive Science* 4:243-84.
- Schank, R.C. and Abelson, R. (1977) *Scripts, Plans, Goals and Understanding*, Hillsdale, N.J.: Erlbaum.
- Schiffman, R.J. (1984) 'The two nominal anaphors *it* and *that*', in J. Drogo *et al.* (eds), pp.344-57.
- Schmerling, S.F. (1976) *Aspects of English Sentence Stress*, Austin: The University of Texas Press.
- Schulz, M. (1975) 'The semantic derogation of women', in B. Thorne and N. Henley (eds), pp.64-76.
- Searle, J.R. (1958) 'Proper names', *Mind* LXVII:266, pp.166-73.
- (1969) *Speech Acts*, London: Cambridge University Press.
- Sells, P. (1984) *Syntax and Semantics of Resumptive Pronouns*, PhD thesis, University of Massachusetts.
- Shibamoto, J.S. (1980) *Language Use and Linguistic Theory: Sex-Related Variation in Japanese Syntax*, doctoral dissertation, University of California at Davis.
- (1987) 'The womanly woman: manipulation of stereotypical and nonstereotypical features of Japanese female speech', in S.U. Philips, S. Steele, and C. Tanz (eds) *Language, Gender, and Sex in Comparative Perspective*, Cambridge: Cambridge University Press, pp.26-49.
- Shlonsky, U. (1987) 'Subject inversion in Hebrew and the pro module', paper presented at GLOW, Venice, March 1987.
- Shulman, H.G. (1972) 'Semantic confusion errors in short-term memory', *JVLVB* 11:221-7.
- Silverstein, M. (1976) 'Hierarchy of features and ergativity', in R.M.W. Dixon (ed.) *Grammatical Categories in Australian Languages*, Canberra: Australian Institute of Aboriginal Studies, pp.112-71.
- Smith, N.S.H. (1975) 'Proper names - whence why and how?', in A. Kraak (ed.) *Linguistics in the Netherlands 1972-1973*, Amsterdam: Van Gorcum.
- Smith, N.V. (1982) (ed.) *Mutual Knowledge*, London: Academic Press.
- Soames, S. (1979) 'A projection problem for speaker presuppositions', *LI* 10:4, pp.623-66.
- (1982) 'How presuppositions are inherited: a solution to the projection problem', *LI* 13:3, pp.483-545.

- Solan, L. (1983) *Pronominal Reference: Child Language and the Theory of Grammar*, Dordrecht: Reidel.
- (1984) 'Focus and levels of representation', *LI* 15:1, pp.174–8.
- Spender, D. (1981) *Man Made Language*, London: Routledge & Kegan Paul.
- Sperber, D. and Wilson, D. (1982) 'Mutual knowledge and relevance in theories of comprehension', in N.V. Smith (ed.), pp.61–131.
- (1986) *Relevance*, Oxford: Blackwell.
- Stalnaker, R. (1978) 'Assertion', in P. Cole (ed.) *Syntax and Semantics 9: Pragmatics*, New York: Academic Press, pp.315–32.
- Stenning, K. (1978) 'Anaphora as an approach to pragmatics', in M. Halle, J. Bresnan, and G.A. Miller (eds) *Linguistic Theory and Psychological Reality*, Cambridge: MIT Press, pp.162–200.
- Stirling, L. (1986) 'Switch-Reference and discourse representation', paper presented at University College, London, 12 November 1986.
- Strawson, P.F. (1956) 'On referring', in F. Zabeeh *et al.* (1974) (eds), pp.159–92.
- (1959) *Individuals*, London: Methuen.
- (1964) 'Identifying reference and truth values', in F. Zabeeh *et al.* (1974) (eds), pp.193–216.
- Swinney, D.A. (1979) 'Lexical access during sentence comprehension: (re)consideration of context effects', *JVLVB* 18:645–59.
- (1982) 'The structure and time-course of information interaction during speech comprehension: lexical segmentation, access, and interpretation', in J. Mehler, E.C.T. Walker, and M. Garrett (eds) *Perspectives on Mental Representations: Experimental and Theoretical Studies of Cognitive Processes and Capacities*, Hillsdale, N.J.: Erlbaum.
- Tai, J.H.-Y. (1978) 'Anaphoric constraints in Mandarin Chinese Narrative', in J. Hinds (1978a) (ed.), pp.279–338.
- Tanenhaus, M.K., Carlson, G.N., and Seidenberg, M.S. (1985) 'Do listeners compute linguistic representations?', in D.R. Dowty, L. Karttunen, and A.M. Zwicky (eds) *Natural Language Parsing*, Cambridge: Cambridge University Press, pp.359–408.
- Tanz, C. (1980) *Studies in the Acquisition of Deictic Terms*, Cambridge: Cambridge University Press.
- Taraldsen, K.T. (1980) 'On the nominative island condition, vacuous application, and the *that*-trace filter', Indiana: Indiana University Linguistics Club.
- Terken, J. and Nootboom, S.G. (1988) 'Opposite effects of accentuation on verification latencies for Given and New information', *Language and Cognitive Processes* 2:3 / 4, pp.145–63.
- Thavenius, C. (1982) 'Exophora in English conversation', in N.E. Enkvist (ed.) *Impromptu Speech: A Symposium*, Abo: Akademi.
- Thorndyke, P.W. (1977) 'Cognitive structures in comprehension and memory of narrative discourse', *Cognitive Psychology* 9:77–110.
- Thorne, B. and Henley, N. (1975) (eds) *Language and Sex: Difference and Dominance*, Rowley, Mass.: Newbury House.

References

- Trabasso, T., Rollins, H., and Shaughnessy, E. (1971) 'Storage and verification stages in processing concepts', *Cognitive Psychology* 2:239-89.
- Tryon, D.T. (1970) *Conversational Tahitian*, Berkeley: University of California Press.
- Tulving, E. (1972) 'Episodic and semantic memory', in E. Tulving and W. Donaldson (eds) *Organization and Memory*, New York: Academic Press, pp.382-404.
- Tulving, E. and Pearlstone, Z. (1966) 'Availability versus accessibility of information in memory for words', *JVLVB* 5:381-91.
- Vetterling-Braggin, M. (ed.) (1981) *Sexist Language: A Modern Philosophical Analysis*, N.P.: Littlefield, Adam & Co.
- Wanner, E. (1974) *On Remembering, Forgetting, and Understanding Sentences*, The Hague: Mouton.
- Weitman, S. (1985) 'National Orientations of Israelis, 1882-1980', discussion paper no. 4-85. A revised, translated version is to appear in *Annales: Economies-Societes-Civilizations*.
- Welmers, W.E. (1973) *African Language Structure*, Berkeley: University of California Press.
- Wierzbicka, A. (1986) 'Does language reflect culture? evidence from Australian English', *Language and Society* 15:3, pp.349-74.
- Wilks, Y. (1975) 'A preferential pattern-seeking semantics for natural language inference', *Artificial Intelligence* 6:53-74.
- Wilson, D. (1975a) 'Presupposition, assertion, and lexical items', *LI* 6:1, pp.95-114.
- (1975b) *Presupposition and Non-Truth Conditional Semantics*, London: Academic Press.
- Wilson, D. and Sperber, D. (1986) 'Pragmatics and modularity', in A.M. Farley, P.T. Farley, and K.E. McCullough (eds) *CLS 22 Part 2: Papers from the Parasession on Pragmatics and Grammatical Theory*, Chicago: Chicago Linguistic Society, pp.67-84.
- Wolfson, N. and Manes, J. (1980) 'Don't "Dear" Me!', in S. McConnell-Ginet *et al.* (eds), pp.79-92.
- Wood, L.A., Kroger, R.O., and Leong, I. (1986) 'Social competence and rules of address', *Journal of Language and Social Psychology* 5:3, pp.161-80.
- Wykes, T. (1981) 'Inference and children's comprehension of pronouns', *Journal of Experimental Child Psychology* 32:264-78.
- Xu, L. (1986) 'Free empty categories', *LI* 17:1, pp.75-93.
- Xu, L. and Langendoen, D.T. (1985) 'Topic structures in Chinese', *Language* 61:1, pp.1-27.
- Yekovich, F.R., Walker, C.H., and Blackman, H.S. (1979) 'The role of presupposed information in integrating sentences', *JVLVB* 18:535-48.
- Yule, G. (1981) 'New, current and displaced entity reference', *Lingua* 55:41-52.
- Zabeeh, F., Klemke, E.D., and Jacobson, A. (1974) (eds) *Readings in Semantics*, Urbana: University of Urbana Press.
- Ziv, Y. (1975) 'On the relevance of content to the form-function

References

correlation (an examination of extraposed relative clauses)', in R.E. Grossman *et al.* (eds), pp.568–79.

Sources

- Almog, R. (1969) *Hasde ha-Laila shel Margarita*, Tel-Aviv: Tarmil (Hebrew).
- (1971) *Be-Erets Gzera*, Tel-Aviv: Am Oved, pp.7–19 (Hebrew).
- Baron, D. (1943) *Le-'et 'ata*, Tel-Aviv: Oved (Hebrew).
- Berlovich, Y. (1984) *Sipurey Nashim*, N.P.: Tarmil (Hebrew).
- Be'er, H. (1979) *Notsot*, Tel-Aviv: Am-Oved (Hebrew).
- Ben-Ner, I. (1976) *Shgi'a Kafrit*, Tel-Aviv: Am-Oved (Hebrew).
- (1979) *Ahare ha-Geshem*, Jerusalem: Keter (Hebrew).
- Bichovsky, E. (1976) *Migre Tafel and Five More Stories*, Tel-Aviv: Tarmil (Hebrew).
- Cahana-Carmon, A. (1966) *Bi-Kfifa Ahat*, Tel-Aviv: Sifriyat-ha-Po'alim, pp.1–100 (Hebrew).
- Chadashot*, a daily paper (Hebrew).
- Dorit, A. (1985) 'Minim ve-Zanim', *Noga* 10, (Hebrew).
- Groult, B. (1986) *The Three Quarters of Time*, translated into Hebrew by A. Inbar, Tel-Aviv: Maariv.
- Haaretz*, a daily paper (Hebrew).
- Haolam Haze*, a weekly magazine (Hebrew).
- Har-Even, S. (1982) 'Bditot', in *Bdidut*, Tel-Aviv: Am-Oved, pp.9–38, (Hebrew).
- Harwood, D. (1982) *Tea and Tranquillisers: The Diary of a Happy Housewife*, London: Virago.
- Koteret Rashit*, a weekly magazine (Hebrew).
- Kramer, C. (1975) 'Sex-related differences in address systems', *Anthropological Linguistics* 17:198–207.
- Laisha*, a woman's weekly magazine (Hebrew).
- Librecht, S. (1986) *Tapuchim min Ha-midbar*, Tel-Aviv: Sifriyat Hapoalim (Hebrew).
- Maariv*, a daily paper (Hebrew).
- Noga*, a feminist magazine (Hebrew).
- Oz, A. (1965) *Artsot ha-Tan*, Ramat-Gan: Massada, pp.1–159 (Hebrew).
- Paley, G. (1956/1980) *The Little Disturbances of Man*, London: Virago Press (reprint).
- Pdetzur, R. (1983) 'The weakness of the strong man', *Haaretz*, 1 January 1983 (Hebrew).

- Politika*, a bi-monthly magazine (Hebrew).
- Puchachevsky, N. (1930) *Ba-Kfar U-va-Avoda*, Tel-Aviv: Hedim, pp.59–168 (Hebrew).
- Shofman, G. (1942) *Be-Terem Arga'a*, Tel-Aviv: Am-Oved, pp.11–170 (Hebrew).
- Smilansky, M. (1934) *Bne-'arav*, Tel-Aviv: Hitachdut-Ha-'ikarim, pp.117–37 (Hebrew).
- (1955) *'im Preda*, Tel-Aviv: Tversky (Hebrew).
- Steinberg, J. (1957) *Kal Kitve Ya'aquob Steinberg*, Tel-Aviv: Dvir, pp.219–63 (Hebrew).
- Terkel, S. (1967) *Division Street: America*, New York: Avon.
- 'Trouble on the Set: An Analysis of Female Characters on 1985 Television Programs', National Commission on Working Women (U.S.).
- Tucker, J.E. (1985) *Women in Nineteenth Century Egypt*, Cambridge: Cambridge University Press.
- Walker, A. (1971) 'How did I get away with killing one of the biggest lawyers in the state? It was easy in *You Can't Keep a Good Woman Down*, San Diego: Harcourt Brace Jovanovich.
- West, R. (1935) 'Life Sentence', in *The Harsh Voice*, reprinted in 1982, London: Virago, pp.42–3.
- Yadin, Y. (1971) *Bar-Kokhba*, Jerusalem: Weidenfeld & Nicholson & Maariv, (Hebrew).
- Yediot Ahronot*, a daily paper (Hebrew).
- Yehosua, A.B. (1972) *9 Sipurim*, Ramat-Gan: Ha-Kibbutz ha-Meuhad, pp.9–156 (Hebrew).
- (1977) *Hameahev*, Jerusalem: Shocken (Hebrew).
- (1982) *Gerushim Meucharim*, Tel-Aviv: Ha-Kibbutz ha-Meuchad (Hebrew).
- Young, E.H. (1934 / 1985) *The Curate's Wife*, London: Virago Press (reprint).

Name index

- Akinnaso, N. 226
Allan, K. 225
Anderson, A. 24
Anderson, S.R. 51, 65
Aoun, J. 141
Ariel, M. 4–6, 17, 35, 43, 78, 86,
91, 127, 167, 192, 207, 211,
212, 215, 217, 225, 232, 235,
236, 237
Atkinson, R.C. 14
Austin, J.L. 5
- Ball, C.N. 197
Bardovi-Harlig, K. 65
Bar-Hillel, Y. 1
Bartlett, F.C. 12
Bates, E. 77, 91
Bentivoglio, P. 75, 77
Berman, R. 228, 235
Bever, T.G. 131, 132
Billier-Lappin, Y. 156, 158
Blakemore, D. 86
Bok-Bennema, R. 230
Bolinger, D. 56, 58, 159, 202, 236
Borer, H. 106–7, 109–11, 113–16,
122–4, 129, 149–51, 227–9, 231
Bosch, P. 157, 158, 189, 201, 228
Bouchard, D. 101
Brill, G.A. 174, 175
Broadbent, D.A. 23, 233
Brown, C. 60, 61, 74, 77, 80, 81
Brown, R. 72, 207
Byrne, F. 129
- Cameron, D. 62, 227
- Caramazza, A. 174, 177
Carden, G. 158, 159
Carrel, P.L. 194, 195
Carroll, J.M. 131, 132
Carston, R. 233
Carter, D. 233
Cassirer, E. 78
Chafe, W.L. 5, 9, 11, 28
Chang, S.J. 78
Chi, N.T.H. 221
Chomsky, C. 67
Chomsky, N. 66, 97, 101, 106,
163, 236
Clancy, P.M. 20, 28, 31, 76, 77,
89
Clark, E.V. 51
Clark, H.H. 5, 6, 9, 13, 20–2, 38,
51, 174, 177, 178, 185, 186, 234
Cole, P. 146
Comrie, B. 118, 138, 140, 225
Cooreman, A. 77, 78
Cornish, F. 73
Craik, F.I.M. 13, 221
Creider, C. 78
Cullen, C. 126, 127
- Dahl, D.A. 67
Dixon, R.M.W. 79
Donnellan, K.S. 5, 34, 36, 39
Dooling, D.J. 221
Doron, E. 148, 150, 153
Du Bois, J.W. 186
Dummett, M. 5
- Eakins, B. 207

- Eakins, G. 207
Ehrlich, K. 174, 177, 180, 181
Eid, M. 77, 91
Enc, M. 25
Engdahl, E. 148, 149, 152
Enninger, W. 92
Ennulat, J.H. 28
Erku, F. 188, 189
Erteschik-Shir, N. 111, 152, 156
Ervin-Tripp, S.M. 207
Evans, G. 37, 38, 43, 200, 202,
222, 223, 234

Fauconnier, G. 198
Fillmore, C.J. 51–3
Finer, D.L. 141, 142, 144, 147
Flores d'Arcais, G.B. 132
Fodor, J.A. 131, 181
Foley, W.A. 87, 88, 111, 135–9,
141, 142, 144, 146, 160
Ford, M. 207
Fox, A. 77, 91
Fox, B.A. 27
Frege, G. 4, 5
Friedrich, P. 207
Fulkerson, D.C. 26, 207

Garnham, A. 174, 175
Garrod, S.C. 12, 16, 17, 23, 25,
26, 75, 174, 176, 180, 181, 185,
186, 188, 201, 233, 235
Garvey, C. 174
Gasser, M. 77
Gazdar, G.J.N. 191, 193, 196
Gilman, A. 207
Giora, R. 49, 208, 222, 233, 235
Givón, T. 17, 20, 25, 31, 62, 74,
77, 78, 81, 118, 138, 140, 141,
145, 221, 225, 228, 229
Gleason, H.A. 28
Goodenough, W.H. 215
Goodwin, W.H. 39
Graham, A. 207
Greenberg, J.H. 78
Grice, H.P. 1, 2, 5, 163, 165, 166
Grober, E. 174
Grosz, B.J. 52, 75
Gundel, J.K. 67, 128, 188, 189

Haegeman, L. 143
Haiman, J. 138–43, 145, 230
Halliday, M.A.K. 9, 51, 60, 63
Hankamer, J. 58–60, 224
Harlow, S. 126, 127
Harris, M. 78, 79
Hasan, R. 9, 51, 60, 63, 92
Heizner, Z. 27
Henry, A. 124–6, 174, 206, 229
Hermon, G. 101, 140, 146, 230
Hinds, J. 76–8, 89, 90, 226
Hirst, W. 174, 175
Hobbs, J.R. 20
Hoijer, H. 141
Horn, L.R. 83
Huang, C.T.J. 106, 107, 123,
124, 229

Isard, S. 25, 75

Jacobsen, W.H. 140
Jaggar, P. 77, 78
Jarvella, R.J. 12
Jespersen, P. 38, 205, 236

Karttunen, L. 191, 194–6
Kasher, A. 100, 103, 163, 221,
227
Keenan, E.L. 51, 65, 188, 225,
236
Kempson, R.M. 82, 182, 185,
191, 221
Kimball, J. 230
Kintsch, W. 223
Komisarjevsky Tyler, L. 175, 181
Kramer, C. 207
Krámský, J. 39, 78, 79, 205
Kuno, S. 5, 9, 10, 203, 204, 218,
226, 236
Kurzon, D. 51

Lachman, R. 221
Lakoff, R. 51–2, 185, 199, 206
Lambert, W.E. 207
Langendoen, T.D. 124, 191
Lappin, S. 111, 152, 156
Lesgold, A.M. 12
Levinsohn, S. 78

Name index

- Levinson, S.C. 65, 82–5
Levy, E. 24
Li, C.N. 26, 27, 77, 126, 224
Linde, C. 25, 52, 75
Lockhart, R.S. 13
Longacre, R. 22, 90, 145
Lujan, R. 91
Lyons, J. 22, 51, 52, 67, 78, 199
- McCawley, J.D. 22
McClelland, J.L. 14, 15
McCloskey, J. 101, 149
McConnell-Ginet, S. 173
McCray, A. 155–8, 232
MacKay, D.G. 26, 207
Maclaran, R. 51, 185, 223
McLendon, S. 145
Maling, J. 148
Manes, J. 207
Maratsos, M. 67
Marshall, C.R. 5, 6, 13, 177, 185
Marlsen-Wilson, W. 17, 20, 73,
· 132, 172, 175, 181, 221, 225
Martin, J.R. 21
Martyna, W. 207
Matisoff, J.A. 79
Mey, J.L. 211
Miller, C. 207
Minsky, M. 12
Mittwoch, A. 155, 231
Mohanani, K.P. 101, 160
Monsell, S. 14
Montalbetti, M.M. 91, 101, 104,
154, 229
Morton, J. 14, 173
Mullet, R.L. 221
Munro, P. 138, 140, 141, 143,
145, 230
- Nilsen, A.P. 207
Noordman, L.G.M. 222
Nooteboom, S. 67, 183, 225, 226
Norman, D. 24
Nunberg, G.L. 36, 198
- Oakhill, J. 174, 175
Oswalt, R. 230
Ouhalla, J. 128
- Perrin, M. 28
Peters, S. 191
Piaget, J. 72
Posner, R. 27, 222
Prince, E.F. 5, 9, 10, 177, 185–7,
192, 194–7, 200, 206
- Quine, W.V. 5
- Redeker, G. 24
Reinhart, T. 66, 105, 154–6, 224,
226, 230, 231
Richter, G. 194
Rizzi, L. 106, 123
Rochester, S.R. 21
Russell, B. 5
- Sachs, J.S. 12
Sacks, M. 82
Sadock, J.M. 59–61
Sag, I.A. 58–60, 224
Sanford, A.J. 16, 17, 23, 25, 26,
75, 174, 176, 180, 181, 185,
186, 188, 201, 233, 235
Savin, H.B. 191
Schachter, P. 224
Schank, R.C. 12, 13
Schegloff, E.A. 82
Schiffman, R.J. 52, 75
Schmerling, S.F. 65
Schulz, M. 207
Searle, J.R. 5, 36
Sells, P. 148, 149, 152, 153
Sengul, C.J. 20, 21
Shibamoto, J.S. 208
Shlonsky, U. 228
Shulman, H.G. 13
Silverstein, M. 134–6, 160
Smith, N.S.H. 38–9
Soames, S. 191
Solan, L. 66, 162, 183
Spender, D. 207
Sperber, D. 2–4, 83, 100, 103,
163, 165, 166, 172, 182, 185,
226, 232
Stalnaker, R. 236
Stenning, K. 66, 183, 224
Stirling, L. 141, 142, 145

- Strawson, P.F. 5, 34, 36, 39
Swift, K. 207
Swinney, D.A. 181, 182, 222
- Tai, J.H.-Y. 78, 236
Tanenhaus, M.K. 12, 201
Tanz, C. 51
Taraldsen, K.T. 106
Terken, I. 67, 225, 226
Thavenius, C. 51
Thompson, S.A. 26, 27, 77, 126,
224
Thorndyke, P.W. 221
Trabasso, T. 12
Tryon, D.T. 79
Tulving, E. 13, 221
- Van Valin, R.D. 87, 88, 111,
135–9, 141, 142, 144, 146, 160
- Wanner, E. 12
- Weitman, S. 209
Welmrs, W.E. 79
Wescourt, K.T. 14
Wierzbicka, A. 85, 215
Wilks, Y. 233
Wilson, D. 2–4, 17, 20, 28, 73,
83, 100, 103, 132, 163, 165,
166, 172, 175, 181, 182, 185,
191, 196, 221, 225–7, 232
Wolfson, N. 207
Wood, L.A. 211
Wykes, T. 174
- Xu, L. 124–6, 160, 229
- Yekovich, F.R. 12
Yule, G. 17, 20, 22, 58, 74
- Zaenen, A. 148
Ziv, Y. 152, 234

Subject index

- Accessibility hierarchy 29, 31, 40, 55, 69–93, 99, 117, 139
- AGR 106–11, 114–20, 122–4, 128–30, 140, 141, 149, 150, 160–3, 228. For AGR types *see* zero subjects
- Attenuation, degree of in marker 20, 61–2, 81, 82, 84–8, 91, 92, 98, 99, 108, 116, 119, 120, 123, 129, 140, 161, 162
- ‘Avoid Pronoun’ principle/Overt Pronoun Constraint 100–5, 140, 154, 229
- backwards anaphora 99, 101, 104, 125, 133, 138, 147, 148, 155–61, 204, 231, 232
- Binding and Binding conditions 97–100, 105, 124–6, 141, 142, 151, 162, 163, 230, 236; *see also* pragmatics vs. grammar
- C-command 125, 130, 141, 155, 159, 230
- clause linkage/sentence cohesion, degree of 27, 48–9, 99, 100, 103, 108, 111–13, 118, 120–2, 127, 131–63; *see also* Unity criterion
- cliticized pronouns *see* pronouns
- Competition over antecedenthood 28, 31, 34, 74, 76–8, 81, 89, 93, 99, 151, 215
- context, role of in interpretation 1–22, 31, 33, 36, 56–8, 69–73, 78, 86, 98, 105, 124–5, 160, 165–97, 198, 201, 221, 222, 224, 229, 232, 233, 235, 236; *see also* General Encyclopaedic Knowledge Context, Linguistic Context, Physical Context
- contextual implications 2, 3, 82, 166, 167, 169, 170, 178, 179, 199, 201, 233, 236
- co-reference 18, 65, 66, 77, 87, 98, 104, 134, 135, 139, 140, 141–7, 154, 155, 156, 161, 162, 185, 230
- definite article 38, 39, 53, 78–9, 84, 205, 236
- definite descriptions 6–8, 17, 18, 20, 23, 24, 27, 33–46, 50, 69, 71, 73, 74, 75, 80, 81, 84, 98, 104, 134, 162, 165, 168, 185–7, 189, 190, 201, 216, 217, 222, 225, 230, 234; *see also* Low Accessibility Markers
- deictic expressions and demonstrative pronouns 6–8, 17–19, 21, 22, 25, 34, 36, 43, 47, 51–5, 69–70, 73, 74, 75, 78–9, 80–1, 84, 86, 88, 91, 98, 104, 128, 130, 142, 145, 162, 167, 174, 178, 183, 190, 199, 205–6, 223; *see also* Intermediate Accessibility Markers
- demonstrative pronouns *see*

- deictic expressions and demonstrative pronouns
- Distance/Recency of Antecedent 18–22, 23, 24, 28–9, 31, 33, 34, 42, 43, 46, 49, 51, 52, 57, 64, 71, 74, 76–8, 81, 89, 93, 99, 108, 148, 149, 151, 154–5, 156–9, 161, 180, 191, 223, 225, 231, 232
- Dominant Information (as defined by Erteschik-Shir and Lappin) 50, 111, 152, 156–9
- Encyclopaedic Knowledge *see* General Encyclopaedic Knowledge Context
- gaps and deleted elements 8, 20, 58–61, 106, 150–5, 221, 229; *see also* zero subjects
- General Encyclopaedic Knowledge Context 3, 6–12, 17, 33, 35, 42–4, 54, 66, 69–72, 93, 167, 169–70, 177–80, 190–1, 193, 221, 222
- Given information 5–11, 66, 159–60, 185, 187, 235
- grammaticalization 97–101, 104–5, 108, 134, 137, 138, 141, 144, 147, 182, 227, 229, 230, 231; *see also* pragmatics vs. grammar
- High Accessibility Markers 18, 20–2, 25, 26, 28, 31, 54, 56–68, 72, 73, 76, 80, 84, 88, 89, 93, 98, 118, 129, 130, 147, 150, 162, 163, 185, 191, 204, 209, 220, 230, 233; *see also* pronouns
- Higher Accessibility Markers (by comparison) 44, 46, 53, 77, 93, 103, 133, 141, 150, 161, 199, 204, 207, 215–19, 230
- Implicature 155, 193, 197
- Inferred Antecedent 3, 167, 184–90, 210, 214, 217, 219, 222, 223, 224, 234, 235
- Informativity (of Accessibility Markers) 29, 34, 53, 80–8, 91, 92, 98, 99, 116, 122, 129, 145, 161, 162, 208, 215, 219, 226, 230
- Intermediate Accessibility Markers 18, 19, 21, 25, 31, 47–55, 58, 67, 93, 191, 199, 206, 224; *see also* deictic expressions and demonstrative pronouns, pronouns (first- and second-persons)
- Linguistic Context 3, 5–11, 17, 18, 35, 42, 44, 56, 58–9, 60, 63, 69–70, 93, 161, 166, 169–71, 190–1, 193–4, 222
- Low Accessibility Markers 12, 17, 18, 20, 21, 22, 24, 28, 31, 33–46, 53, 54, 57, 58, 64, 68, 72, 76, 78, 80, 84, 89, 90, 93, 98, 133, 156, 158, 159, 171, 185, 189, 195, 197, 198, 201, 206, 208, 219, 233, 237; *see also* definite descriptions, proper names
- Lower Accessibility Markers (by comparison) 24, 26, 33, 36, 41, 42, 45, 46, 50, 56, 66, 78, 80, 81, 84, 88, 98, 103, 105, 108, 117, 128, 134, 147, 150, 151, 161, 163, 172, 181, 199, 200, 202, 204, 206, 212, 213, 215, 216, 219, 232
- names *see* proper names
- New Information 10, 13, 20, 35, 47, 50, 62, 65–6, 89, 139, 152, 158–61, 166, 176, 185, 187, 200, 201, 205–6, 208, 217, 223, 225, 232
- Overt Pronoun Constraint *see* 'Avoid Pronoun' principle
- Phonological Size *see* Attenuation
- Physical Context 3, 5–11, 17, 35,

Subject index

- 42, 44, 47, 51, 58–60, 63,
69–70, 93, 166, 169–71, 190–1,
193–4
- pragmatics vs. grammar 1–2, 4,
56, 97–105, 106–9, 118–19,
122–3, 126, 129–30, 133–8, 139,
141, 144, 147, 154–5, 162–3,
165, 181–4, 226–7, 229, 230,
233
- presupposition (existential) 4–5, 8,
168, 190–7
- PRO 73, 101, 104, 105, 125, 137
- pro 29, 60, 73, 97–8, 101, 103–15,
119, 123–6, 128, 129, 149, 150,
160, 227, 229, 230, 232; *see*
also zero subjects, zero topics
- pronouns: cliticized 61–2, 68, 73,
80, 81, 84, 85, 99, 104, 114–20,
122, 162, *see also* High
Accessibility Markers; full first-
and second-persons 47–51,
54–5, 114, *see also* Intermediate
Accessibility Markers; full
third-person 8, 10, 18–27, 41,
44, 48, 56, 61–3, 65–8, 71, 72,
73, 77–8, 80, 89–91, 97–8,
100–6, 114–22, 125–7, 133, 140,
141, 145, 148, 155–61, 162,
172–4, 176, 177, 180, 183–5,
200, 203–4, 209, 210, 211, 216,
226, 227, 228, 229, 230, 232,
233, 234, *see also* High
Accessibility Markers;
Resumptive 58, 99, 138,
147–55, 161, *see also* full third-
person pronouns; stressed 58,
61, 64–8, 70–4, 78, 80, 81, 84,
88, 90, 91, 183, 226, 233, *see*
also High Accessibility Markers
- proper names: first names 40–1,
44–6, 73, 75, 81, 92, 202–3,
207–9, 212, 215–19, 223, 237;
full names 39–45, 73, 80–1, 90,
172, 204, 208, 210–11, 216,
223, 226, 237; general 6, 7, 15,
27, 33, 36–40, 41–3, 45, 50–1,
62, 73, 75, 85, 90, 91–2, 104,
133–4, 143–4, 162, 172, 184,
190, 200–6, 208, 212, 214–15,
219, 220, 222, 223, 224, 232,
236, 237, *see also* Low
Accessibility Markers
- Rationality, as defined by Kasher
100, 103, 163, 175, 221
- reflexives 73, 85, 86, 98, 99,
104–5, 125, 177, 203–4
- Relevance, as defined by Sperber
and Wilson 2–4, 12, 30, 34, 36,
37, 66, 70, 82–7, 100, 103, 143,
147, 165–8, 170–3, 175–80,
182–5, 188, 197–200, 208, 217,
221, 224
- Resumptive Pronouns *see*
pronouns
- Rigidity of referring expressions
29, 36, 39–41, 44, 81–2, 84–8,
92, 98, 116, 129, 161, 162, 184,
226
- Saliency of antecedents 9, 10, 16,
17, 19, 22–5, 28, 29, 31, 33, 41,
46–51, 57–8, 59–61, 62–3, 67,
72, 99, 108, 111, 118, 120,
122–3, 126, 128, 129, 130, 139,
140, 151, 156, 161, 162, 178,
189, 223, 225, 229; *see also*
topic antecedents
- scale of accessibility *see*
Accessibility hierarchy
- split antecedents 110–13, 115,
118, 123, 125
- Switch-Reference Markers (S-R)
58, 88, 136, 138–47, 161, 230;
Different Subject Marker (DS)
138–46, 161, 162, 230; Same
Subject Marker (SS) 138–47,
161, 162
- topic antecedents 19, 22–6, 28,
29, 31, 46, 49, 50, 52, 62, 63,
77, 90, 103, 107, 120, 122–6,
128, 138, 156, 161, 162, 173,
175, 180, 183, 223, 229, 233
- Unity criterion 29, 31, 33, 35, 39,