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REVIEW ARTICLE

FUNCTIONALISM, ANAPHORA AND SYNTAX

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Susumu Kuno. *Functional syntax: anaphora, discourse and empathy*. University of Chicago Press. 1987.

1. Introduction¹

There are two very different major orientations in contemporary linguistic theory which may be characterized as 'formalist' and 'functionalist'. Formalist theories include the various varieties of generative grammar, e.g. Government-Binding theory (Chomsky 1981, 1986a,b), and formal-semantic theories like Montague Grammar. This is the majority direction in the field today. Functionalist theories and approaches are not so easily identified, in part because few of the linguists who call themselves 'functionalists' label their work with a theoretical name; rather, different strands of functionalist analysis are, for the most part, associated with particular individuals. Susumu Kuno [henceforth K] has been one of the major figures of the functionalist movement since the early 1970's, and *Functional syntax: anaphora, discourse and empathy* [henceforth FS] brings together revised versions of a number of his influential papers from the early and mid 1970's. It is an important book; it covers a great deal of empirical ground, and the major thread running through the book is the problem of anaphora, one of the central topics in current theoretical debates, and the various chapters present his approach to a number of anaphoric phenomena.

The discussion will proceed as follows. In §2 functionalism in linguistic theory will be characterized, and K's work will be located within the variety of approaches that call themselves 'functionalist.' In §3 analyses of anaphora will be discussed; first, the various formalist approaches criticized by K will be surveyed, second, functionalist analyses of anaphora, including those by K from the early 1970's will be discussed, and then finally K's account in *FS* will be evaluated. An alternative functional account of some of the phenomena K discusses will be presented. §4 and §5 deal with K's theories of logophoricity and empathy, and conclusions are given in §6.

2. What is functional syntax?

It would probably be impossible to come up with a definition of 'functional syntax' that would be acceptable to all of the linguists who claim to be doing it. In the most general sense, functional syntax is an approach to grammatical description and analysis that takes the communicative functions of linguistic structures to be crucial and central to their analysis and ultimately to their explanation. Within this broad characterization there are numerous points of contention, e.g. which functions are relevant and how are they to be defined?, what notion of structure is relevant?, is the notion of structure, however conceived, valid?

Nichols (1984) presents an overview of functionalist approaches to grammar and discusses eight individuals, groups ('schools') or theories which fall under this heading. She first of all distinguishes functionalist statements from functionalist analyses from functionalist theories. While there are many functionalist statements and analyses, there are few explicitly functionalist theories; Functional Grammar (Dik 1978), Systemic Grammar (Halliday 1984), and Role and Reference Grammar (Foley and Van Valin 1984, Van Valin in preparation) are the only approaches which purport to be full-blown theories of language structure. Among functionalist statements, Nichols distinguishes conservative, moderate, and extreme.

The conservative type merely acknowledges the inadequacy of strict formalism or structuralism, without proposing a new analysis of structure...The moderate type not only points out the inadequacy of a formalist or structuralist analysis, but goes on to propose a functionalist analysis of structure and hence to replace or change inherited formal or structural accounts of structure...Extreme functionalism denies, in one way or another, the reality of structure qua structure. It may claim that rules are

based entirely on function and hence there are no purely syntactic constraints; that structure is only coded function, or the like. (1984: 102-3)

The work of Dik, Halliday and Foley and Van Valin falls into the moderate functionalist category; they emphasize the importance of semantics and pragmatics for the analysis of language structure and do not deny that the notions of grammar or structure are central to the understanding of natural language, and they provide accounts of linguistic structure which are quite distinct from those assumed in generative theories. The extreme view is found in the works of Givón (e.g. 1979), Thompson (e.g. 1987) and Hopper's 'emergent grammar' (1987). This perspective denies the validity of the Saussurean conception of language as a structural system and argues in effect that grammar can be reduced to discourse. Extreme functionalists reject the work of moderate functionalists as not being truly functional, since it assumes that language is a structural system of some kind, and regard it with the same scorn that is reserved for formal linguistic theories. (Elizabeth Bates (1987) has remarked that functionalism is like Protestantism: it is a group of warring sects which agree only on the rejection of the authority of the Pope.)

K's view of functionalism is very different from that of both moderate and extreme functionalists:

Functional syntax is, in principle, independent of various past and current models of grammar such as case grammar, Montague grammar, relational grammar, generalized phrase structure grammar, lexical functional grammar, and various versions of Chomskian generative grammar such as standard theory, extended standard theory, revised extended standard theory, and government and binding theory. Each theory of grammar must have a place or places where various functional constraints on the well-formedness of sentences or sequences of sentences can be stated, and each can benefit from utilizing a functional perspective in the analysis of concrete syntactic phenomena. Therefore, in theory there is no conflict between functional syntax and, say, the government and binding theory of generative grammar. (p.1)

For K, functional syntax appears to be simply an additional component (in the *Aspects* sense) or module (in the *GB* sense) which can be added to any of the existing formalist theories of grammar; the basic notion of structure assumed by those theories is valid, and all that is needed is the addition of functional principles to fill in where purely syntactic principles fail. K's conception thus places him in the conservative functionalist category in Nichols' taxonomy.

Despite the ecumenical and idealistic stance taken in the above passage, K is not naive with respect to the potential for discord between formal and functional syntacticians.

In practice, however, there are numerous conflicts between the outlooks of pure and functional syntacticians with respect to how to analyze a given linguistic phenomenon. Pure syntacticians tend to give syntactic characterizations to linguistic phenomena which are in fact controlled by nonsyntactic factors. Or they label them as nonsyntactic phenomena and brush them aside. (p.1-2)

One of the major goals of the book is to present analyses of complex syntactic phenomena which "are free from the problems of the original syntactic generalizations and are capable of accounting for new sets of facts that pure syntacticians have failed to take into consideration." (p.2) One of the significant differences between K, on the one hand, and most moderate and extreme functionalists on the other is that he attempts to deal with the issues that are of major concern to formal syntacticians. Extreme functionalists rejects these issues as pseudo-problems generated by a distorting methodology, and moderate functionalists have tended to concern themselves with rather different sets of issues.² K illustrates his approach in the first chapter by reviewing the arguments regarding restrictions on extraction out of picture NPs. He shows that purely structural formulations like the Specified Subject Condition and Subjacency make the wrong predictions in many cases, e.g. they incorrectly predict that sentences like **This is the story that I haven't been able to get Mary's version of** are ungrammatical. His solution is to propose that, in the case of picture NPs with an overt possessor, the head noun can be extracted only if the possessor receives a contrastive interpretation, and this, he claims, follows from the more general 'Topichood condition for extraction' which applies to all extractions, both from picture NPs and clauses. It is stated in (1).

- (1) Topichood Condition for Extraction: Only those constituents in a sentence that qualify as the topic of the sentence can undergo extraction processes (i.e. *Wh*-Q Movement, *Wh*-Relative Movement, Topicalization, and *It*-Clefting). (p.23)

Topichood is a discourse-pragmatic, functional notion which may vary across identical syntactic configurations, and it is this variation which correlates with variable extractability and hence provides an explanation for the

facts in question. This is the essence of a functional explanation for syntactic phenomena, but the formulations K gives are inadequate in a number of crucial respects, as he himself acknowledges:

Crude though these formulations may still be, they are nevertheless the only hope for accounting for the phenomenon under discussion in the face of the failure of the syntactic approaches. Since there does not seem to be any syntactic clue for the solution, the most profitable research avenue seems to be that of continuing to refine and objectivize our functional approach. (p.28-9)

The primary problem is that K does not formulate his analysis in terms of any independently motivated theory of the flow of information in sentences in discourse. As Bever (1975) argued, functional explanations require independently motivated functional theories. Unfortunately, even though a number of K's early papers on functional syntax dealt with the issue of information flow (e.g. 1972a,b, 1975), he does not address it in this book beyond his few remarks in the introductory chapter. He cites space limitations as the reason and promises a full discussion in a subsequent book. This presages a startling reversal of some of his best-known positions concerning anaphora.

3. The analysis of anaphora

The term 'anaphora' in its most general sense covers two distinct albeit related phenomena, pronominals and reflexive-reciprocals, and K deals with both extensively. Each of these will be discussed separately, to the extent that it is possible. We begin with the problem of the conditions under which a pronoun can refer to a full NP within a sentence.

3.1 *Pronominalization*

3.1.1 *Structural and functional accounts*

There have been two major approaches to the problem of intrasentential pronominal reference in the past two decades.³ Structural analysis seeks to derive the restrictions on pronominal reference within a sentence from features of structural configurations, while functional analyses attempt to explain these phenomena in terms of discourse factors or pragmatic principles. We will survey both of these approaches in order to situate K's proposals in *FS* in their proper historical and theoretical context.

3.1.1.1 *Structural analyses*

The first restriction to gain widespread acceptance was the 'precede and command' principle of Langacker (1969) and Ross (1967); it stated that a pronoun cannot both precede and command its antecedent and was based on the following set of facts.⁴

- (2) a. John_i was very happy after he_i talked with Mary.
 b. After he_i talked with Mary, John_i was very happy.
 c. *He_i was very happy after John_i talked with Mary.
 d. After John_i talked with Mary, he_i was very happy.

In (2a,b,d) the pronoun does not both precede and command its antecedent, but in (c) it does, hence its ungrammaticality. The crucial notion of 'command' was defined as: **A** commands **B** if and only if the first S[entence] node dominating **A** also dominates **B**. While this formulation accounted for a wide range of data, there were a number of crucial exceptions to it, e.g. (3).

- (3) a. I saw [_{NP} [_{NP} his_i sister's] portrait of [_{NP} John_i]].
 b. *I saw [_{NP} his_i portrait of [_{NP} John_i's sister]].

The problem here is that both the pronoun and the full NP are dominated by the same S node and by the precede-and-command constraint both should be ungrammatical; yet (3a) is grammatical. In order to solve this problem, Lasnik (1976) proposed a revised definition of command, which he called 'kommand': **A** kommands **B** if and only if the first S or NP node dominating **A** also dominates **B**.⁵ This conception makes the same predictions with respect to (2) as the original one, and it makes the correct predictions with respect to (3); in (3a) **he** and **John** are in distinct NPs and therefore do not kommand each other, whereas in (b) they are both dominated by the same NP node and therefore since the pronoun precedes its antecedent, the sentence is ungrammatical. Lasnik also proposed that the indexing rule be formulated as a disjoint-reference rather than as a coreference rule; that is, instead of marking two NPs as coreferential, the rule should indicate that two NPs must be interpreted as disjoint in reference.

This analysis runs into trouble with sentences in which the normal word order has been altered, as in (4).

- (4) a. John_i saw a snake near him_i.⁶
 b. Near him_i John_i saw a snake.
 c. *He_i saw a snake near John_i.
 d. *Near John_i he_i saw a snake.

The precede-and-kommand restriction erroneously predicts that (4b) should be ungrammatical, because the pronoun both precedes and kommands its antecedent, and that (4d) should be grammatical, because the antecedent precedes and kommands the pronoun; it makes correct predictions with regard to (4a,c). Reinhart (1983) makes two new proposals: first, the notion of linear order has no relevance to the problem of anaphora and no theoretical status in syntactic theory, and second, the appropriate notion of command is 'c[onstituent]-command', which she defines as follows: **A** c-commands **B** if and only if the first branching node dominating **A** also dominates **B**.⁷ She posits the following coreference restriction: "A given NP must be interpreted as non-coreferential with any distinct non-pronoun in its c-command domain" (1983:43). This handles the sentences in (2) and (3) the same way as Lasnik's formulation; the crucial difference is with respect to (4). According to Reinhart, (4a) and (4b) have the structures in Figure 1.

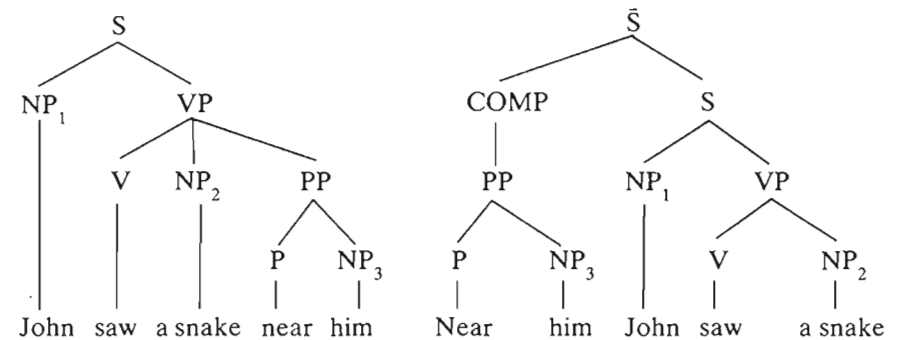


Figure 1

In (4a) **John**, NP₁, c-commands (and S-/k-commands [see fn. 4]) NP₂ and NP₃, as well as preceding them. However, NP₂ and NP₃ do not c-command NP₁, because each is dominated by one or more branching nodes (VP or PP and VP) which do not dominate NP₁; but they do S-/k-command NP₁, because they are all dominated by the same S node. The crucial structure is (4b); given Reinhart's proviso regarding the equivalence of S-bar with S for determining command relations (see fn. 5), NP₃ S-/k-commands and precedes NP₁, and therefore him should not be able to refer to **John**. However, on Reinhart's analysis, NP₁ still c-commands NP₃, since the S/S-bar dominating it also dominates NP₃, but NP₃ does not c-command NP₁.

because of the PP node dominating it. Hence her analysis predicts that coreference should be possible, and this is in fact correct. It is an important feature of her analysis that no reference to linear order is necessary for an accurate account of these facts.

Reinhart's final analysis is very different from all of the other structural analyses. She rejects the need for any sentence-level coreference rules beyond those needed for bound anaphora, i.e. phenomena like **Every linguist_i has his_i favorite language** in which a pronoun functions like a variable bound by a quantifier. Her reason for this is as follows.

Whatever way we may specify conditions on the referential interpretation of unbound pronouns within the sentence, there is always the problem that such pronouns can corefer freely (i.e. subject to pragmatic conditions only) across sentences. So, unless we introduce the problematic non-coreference rules there is no way to prevent a pronoun from selecting the 'wrong reference' from outside the sentence...[O]nce the procedures determining bound-anaphora interpretations are specified, there is, in fact, no need to establish sentence-level coreference rules. (p.157)

Thus coreference is a discourse and not a sentence-level phenomenon, and consequently the only facts that sentence grammar must account for are the allegedly pragmatics-free bound anaphora phenomena.⁸ Bound anaphora are subject to the c-command restriction, and she formulates the following coindexing rule:

Coindex a pronoun P with a c-commanding NP α (α not immediately dominated by COMP or \bar{S}).

Conditions: (a) If P is an R[eflexive]-pronoun, α must be in its minimal governing category.

(b) If P is a non-R-pronoun, α must be outside its minimal governing category. (158-9)⁹

These rules handle reflexive/reciprocals and bound anaphora cases like the one cited above. To handle the other cases of coreference, she proposes that,

whenever it is possible to express a bound-anaphora relation between two NPs, we will get non-coreference if we do not use this option which the grammar provides. In environments that allow R-pronouns to be coindexed this is the only option for bound anaphora. If we choose instead an option that does not allow coindexing as in... '**Zelda bores her**,' we get non-coreference. Similarly, in environments that allow non-R-pronouns to be coindexed, if we avoid this option by using a non-pronoun in a position

where a pronoun could be coindexed, we get non-coreference, as in... '**He thinks that Felix is a genius**.' (p.165-6)

What she is describing here is generalized conversational implicatures of the Gricean sort, and she specifies the speaker's and hearer's interpretive strategies as follows

Speaker's Strategy: Where a syntactic structure you are using allows bound-anaphora interpretation, then use it if you intend your expressions to corefer, unless you have some reasons to avoid bound anaphora.

Hearer's Strategy: If the speaker avoids the bound-anaphora options provided by the structure he is using, then, unless he has reasons to avoid bound anaphora, he did not intend his expressions to corefer. (p.167)

Thus Reinhart ends up proposing a functional account of pronominal reference outside the contexts where bound anaphora can occur and thereby removes most of the problem from the domain of sentence grammar.

The final structural account is that of Government-Binding theory [GB] (Chomsky 1981, 1986a,b). The essence of the Binding theory is contained in the three binding principles in (5).

(5) GB Binding Principles

- A. An anaphor must be A-bound in its governing category.
- B. A pronominal must be A-free in its governing category.
- C. An R-expression must be A-free everywhere.

'Anaphor' here denotes reflexive and reciprocal expressions only. 'A-bound' means coindexed with a c-commanding NP in an argument position; 'A-free' refers to the condition of not being so coindexed. 'R-expression' refers to lexical NPs, proper names and traces left by Wh-Movement. 'Governing category' is the minimal NP or S containing the anaphor or pronominal and a lexical governor. Binding theory is concerned primarily with capturing the alleged complementary distribution between anaphors and pronominals and with filtering out improper coindexings.

The actual Binding principles are somewhat more complicated than in (5), due to problems with determining the proper domain for reflexives (Principle A). Anaphors and pronominals are supposed to be in complementary distribution, but this is not always the case, as (6) from Chomsky (1986a) shows.

- (6) a. The children_i heard [_{NP}stories about each other_i].
- b. The children_i heard [_{NP}stories about them_i].

Principle A in (5) predicts that (6a) should be impossible, which it manifestly is not. Chomsky's solution is to say that "the relevant governing category for an expression α is the least C[omplete]F[unctional]C[omplex] [i.e. NP or S-RVV] containing a governor of α in which α could satisfy the binding theory with some indexing (perhaps not the actual indexing of the expression under investigation)." (1986a:171). Given that there is normally only one possible interpretation for a reflexive or reciprocal (sentences like **John talked to Bill about himself** are an exception, but the governing category [GC] is unambiguous in such cases), this is a thoroughly circular analysis: the correct GC for the anaphor is the one that gives the correct binding interpretation, and there are no independent criteria for determining the choice of the GC save the correctness of the binding interpretation. With regard to (6a), the analysis is that since *each other* cannot be bound properly in its NP, a CFC containing a lexical governor, this is not the correct GC, and therefore the whole S must be the proper GC, since this choice yields the right interpretation. This vicious circularity vitiates any potential explanatory force of the binding principles for anaphors.

3.1.1.2 *Functional analyses*

Much less effort has gone into developing a functional account of intrasentential pronominal reference, but two basic trends can be identified. The first is what will be labeled the 'discourse-pragmatic' approach and is concerned with the flow of information in sentences in discourse, and the second will be termed the 'Gricean' approach, because such accounts rely on Grice's Cooperative Principle and maxims of conversation (or derivatives therefrom) for their theoretical foundation. K is one of the pioneers of the discourse-pragmatic approach (Kuno 1972a,b, 1975), along with Bickerton (1975) and Bolinger (1979). One of the difficulties that a discussion of these analyses runs into is the lack of consistency with respect to terminology across authors, a problem much more severe with functionalists than formalists because of the lack of a widely accepted functional theoretical framework.

Bickerton and Bolinger each propose a single principle to govern intrasentential pronominalization. Both assume an analysis of sentences in terms of their information structure; Bolinger (and K) presupposes the Prague School conception of functional sentence perspective with its division of the clause into theme and rheme, while Bickerton operates with the concepts of presupposition and assertion. In order to provide a common

framework in which these accounts can be compared, I will employ the terminology of the theory of clausal information structure put forth in Lambrecht (1986, 1987), a theory which has its roots in the Prague School, Halliday, Jackendoff and others. Lambrecht identifies two primary information statuses that referring expressions may have and terms them 'topic' and 'focus'; these are discourse-pragmatic relations, not labels for the structural positions in which they may be instantiated. Topic is defined as "that entity which the sentence or proposition is **about**." (1986:84).¹⁰ It is important to note first, that not every sentence or utterance has a topic in it (see below), and second that the topic is not necessarily the first element in a sentence. There is a direct relationship between the topic element and the pragmatic presupposition of a sentence; Lambrecht describes it as follows:

What must be presupposed in the case of a topic is not the topic itself, nor its referent, but the status of the topic referent as a possible center of interest or matter of concern in the conversation...[T]he topic referent is **active** or **accessible** in the discourse... [T]he topic is contained in the pragmatic presupposition or is an element of the pragmatic presupposition. (p.102)

Focus, on the other hand, "is a device used to indicate the scope of the assertion in a sentence, i.e. as a formal mechanism whereby speakers contrast the asserted portion of a sentence with the pragmatic presupposition required by the sentence, in particular with the topic, which is part of that presupposition." (p.159) Focal information is new information, that is, it is "that part of the information expressed by a sentence which is not recoverable from preceding discourse." (p.159-60) The primary manifestation of focus in English is the prosodic prominence of the focal constituent(s). Lambrecht presents a complex taxonomy of focus types, starting from a fundamental distinction between broad and narrow focus. In narrow focus the focus includes only a single constituent, e.g. the object NP, while in broad focus the domain of focus extends over more than one constituent. Within broad focus, two subtypes are found: predicate focus, in which the subject is the topic and the predicate the focus, and sentence focus, in which there is no topic and the entire sentence is focal. Predicate focus is the unmarked type of focus in general, both in English and cross-linguistically, and it corresponds to the traditional 'topic-comment' division. Sentence focus is the marked broad focus type as it involves sentences which consist solely of focal material; some examples are given in (7).

- (7) a. Suddenly there arose a violent storm.
 b. *Mi si è rotta la macchina.* 'My car broke down.' (Italian)
 c. *Kuruma ga koshoo-shi-ta.* 'My car broke down.' (Japanese)

Presentational constructions like (7a) are perhaps the best examples of sentence focus; contrasting predicate-focus examples are given in (8).

- (8) a. The storm caused a great deal of damage in Jamaica last week.
 b. *La macchina si è rotta.* 'My car broke down.'
 c. *Kuruma wa koshoo-shi-ta.* 'My car broke down.'

Narrow focus is subdivided into two types, unmarked and marked. Unmarked narrow focus is narrow focus in the unmarked clause position for focus, which in English is final position, while marked narrow focus is narrow focus that falls to the left of the unmarked focus position. This contrast is illustrated in (9). (The focus is in small caps.)

- (9) a. A: What did Bill buy?
 B: He bought A NEW CAR. Unmarked narrow focus
 b. A: Who gave Mary the flowers?
 B: JOHN did./JOHN gave them to her. Marked narrow focus

The taxonomy of focus types can be summarized as in Figure 2. ('-' indicates the unmarked member of an opposition, '+' the marked member.)

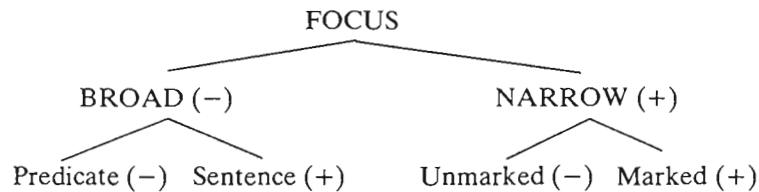


Figure 2

The final feature of this scheme relevant to this discussion is the markedness relations between the topic-focus contrast and the coding of NPs. The least marked coding for a topic is as an unstressed pronominal, which may be realized in a variety of ways, depending upon the language and the construction; it may be an unstressed independent pronoun, as in (9aB) in English, a clitic, as in French, a pronominal affix on the verb in a head-

marking language like Lakhota (Van Valin 1987) or a zero element. The least marked coding for a focus element is as an indefinite lexical NP, as in (7a) and (9aB). Each of these is the most marked coding for the complementary function, and there is a cline of possibilities of varying markedness connecting these two extremes.

We may now summarize the terminological standard to be used here and compare it with the terms used by K, Bolinger and Bickerton. (Following Lambrecht, the topic will be in italics and the focus in small caps; the potential focus domain will be underlined.)

(10)	<i>He</i>	<u>gave Mary SOME FLOWERS.</u>
Lambrecht	Topic	Focus
Bolinger ¹¹	Theme	Rheme
Bickerton	Presupposition	Assertion

With respect to intrasentential pronominalization, Bickerton proposes that "pronominalization flows from the presupposed NP [topic] to the asserted NP [focus]." (1975:26) He gives the following examples (a-g).

- (11) a. My punching *Bill*_i annoyed *HIM*_i.
 b. *My punching *him*_i annoyed *BILL*_i.
 c. What annoyed *Bill*_i was my punching *HIM*_i.
 d. *What annoyed *him*_i was my punching *BILL*_i.
 e. *It was my punching *BILL*_i that annoyed *him*_i.
 f. It was my PUNCHING *Bill*_i that annoyed *him*_i.
 g. It was my punching *HIM*_i that annoyed *Bill*_i.
 h. It was my PUNCHING *him*_i that annoyed *Bill*_i.

In all of the grammatical examples the antecedent lexical NP is the topic and the pronoun is either focal, as in (a), (c) and (g), or is also topical, as in (f) and (h). When the antecedent is the focus, as in (b), (d) and (e), the result is ungrammatical. This is striking, because this is the **opposite** of the unmarked situation in **intersentential** pronominalization, as illustrated in (12), in which a focus NP appears as a pronominalized topic in subsequent sentences.

- (12) In a house on a narrow lane lived AN OLD MAN_i. *He*_i was a cobbler...

A significant feature of Bickerton's proposal is that it makes no reference to the linear order of the NPs, and the apparent irrelevance of word order is shown by the contrasts between (c) and (e) and between (f) and (g). How-

ever, there are cases which seem to require reference to linear sequence.

- (13) a. *John_i* asked Mary to help *HIM_i*.
 b. **HE_i* asked Mary to help *John_i*.

As Reinhart (1983) points out, the antecedents in both of these examples are topics and the pronouns are foci, and yet only (a) is grammatical. Consequently, Bickerton's formulation is not sufficient by itself.

Bolinger proposes the following principle to explain intrasentential pronominalization: "The topic may be reidentified easily in the theme, but in the rheme only if the theme lacks a normally topical form (subject noun or subject pronoun)." (1979:306) He gives the following examples to illustrate it. (Conventions for marking topic and focus from (10) are added.)

- (14) a. **He_i* likes *JOHN_i*.
 Q: Did you have any trouble telling who *he_i* was?
 A: b. **He_i* was recognizable the moment *JOHN_i* arrived.
 c. *I* recognized *HIM_i* the moment *John_i* arrived.
 d. *The moment he_i arrived, John_i* was recognizable.

In (a) the pronoun is the topic in initial position and the antecedent NP is in final focus position, and coreference is impossible; the same is true in (b). This follows Bickerton's claim that the direction of pronominalization is topic → focus intrasententially. In (c) the pronoun is in what would normally be focus position, not topic position, and on the coreferential reading it cannot be fully destressed; compare it with **I recognized'im_i the moment JOHN_i arrived* in which the destressed, contracted form must be interpreted as topical and coreference is impossible. Finally, in (d) the pronoun is in a dislocated temporal phrase, which is presupposed hence topical, and the NP *John* is in subject position, the unmarked topic position; consequently coreference is possible, just as in (11h). Thus both Bickerton and Bolinger present roughly the same constraint on intrasentential pronominalization.

K's account (1972a,b, 1975) follows the same general lines, in particular the use of Prague School functional sentence perspective concepts.¹² A comparison of his terminology with Lambrecht's is given in (15).

- | | | |
|------|--------------------------------|-----------------------------------|
| (15) | <i>Kuno</i> | <i>Lambrecht</i> |
| | theme [sentence] ¹³ | predicate focus |
| | neutral description [sentence] | sentence focus |
| | contrast, exhaustive listing | marked narrow focus ¹⁴ |
| | old, predictable information | topic |
| | new, unpredictable information | focus |

K begins by arguing that it is essential to distinguish discourse from intrasentential pronominalization. It is the failure to make this distinction, he claims, that has led to much of the confusion in the discussion of pronominal reference. One of his most important claims is that intrasentential pronominalization is always forward, i.e. from left to right, never backward; backward pronominalization is always licensed by certain discourse conditions. K formulates the two principles in (16) to account for backward pronominalization:

- (16) a. **The Predictability Requirement on Backward Pronominalization:** Do not pronominalize the lefthand NP unless its referent is determinable (predictable) from the preceding context.
 b. **The Imitation Tendency:** If backward pronominalization is to apply, leave unpronominalized the NP in the 'known part' of the sentence. (1975:280)

He gives the following examples to illustrate these principles. (Information structure overlay added)

- (17) a. A: What did you do when you saw *Harry_i* getting mad?
 B: (?) *I CALMED him_i DOWN before Harry_i did something rash.*
 b. A: Who_i did you calm down when you saw *him_i* getting mad?
 B: **I calmed HIM_i down before Harry_i did something rash.*
 c. A: What did you do about *Harry_i*?
 B: **I CALMED him_i DOWN before Harry_i did something rash.*
 d. A: Who calmed *Harry_i*?
 B: **I calmed him_i down before Harry_i did something rash.*

It should be noted at the outset that all of the B responses are odd to a certain extent because the NP *Harry* is not pronominalized in the adverbial clause, as K himself notes; nevertheless, there is a clear difference in appropriateness between (17a) and (b-d). *Him* in B's response in (a) refers to the occurrence of *Harry* in A's question, not to the one in the following adverbial clause; there is no backward pronominalization. B's response in (b) is inappropriate because the referent of *him* has not been established, a violation of principle (15a). B's responses in (c) and (d) are bad because, as Bolinger puts it, the topic has been reidentified in the rheme (focus), a violation of K's principle (16b). Since the focus is the locus of the new, unpredictable information in the utterance and a full lexical NP is the least

marked kind of NP to function as focus, the result is a strong tendency to interpret **Harry** in (c) and (d) as referring to someone other than the referent of **him**; this is reinforced by the fact that **him** in these sentences is unstressed, making it the least marked form for a topic, and it has a clear referent in the previous utterance. These factors combine to make the interpretation of **him** as referentially dependent on **Harry** in (c) and (d) very unlikely, if not impossible. K points out the "danger of making generalizations on pronominalization..., as is generally the case, without any discourse contexts." (1975:287)

The claim that pronominalization operates in only a forward direction is a significant one, but it appears to be untenable. Carden (1982) discusses K's claims regarding backwards pronominalization from his 1972a and 1975 papers and adduces numerous examples of backward pronominalization in which the referent could not have been established in the discourse context. Two of his examples, all of which are taken from actual discourse passages, are given in (18).

- (18) a. After his_i recent election as Republican national chairman, Bill Brock_i said....
 b. When she_i was five years old, a child of my acquaintance_i announced a theory that she was inhabited by rabbits.

The lexical NP antecedents in these sentences were being mentioned for the first time in the discourses in question; in (b) the antecedent is an indefinite NP, the normal status of a NP being introduced for the first time. Such examples are serious counterexamples to K's principle (16a).¹⁵

In addition to the constraints in (16), K proposes a number of others, some structural and some functional. He retains, for example, the Langacker-Ross precede-and-command condition. The only functional constraint that will be discussed here is the 'Constraint on predictable theme pronominalization' which states: "do not pronominalize the predictable theme of the sentence [intrasententially]." (1975:280) He gives the examples in (19a,b) to illustrate it.

- (19) A: What will John_i do this Sunday?
 a. B: *IF JOHN_i can, he_i will go to see a movie. (cf. *He_i will go to see a movie, if JOHN_i can.)
 b. B: IF HE_i can, John_i will go to see a movie. (cf. John_i will go to see a movie, if HE_i can.)

All of the information in B's responses is new, except for the NP referring to **John** in A's question. This constraint rules out pronominalization of the topic NP by a non-topic and is essentially the same as Bickerton and Bolinger's restrictions discussed above. Thus all of the discourse-pragmatic functionalists propose basically the same constraint on intrasentential pronominalization.

We now turn to a Gricean account of pronominalization. Such an analysis attempts to derive possible coreference from implicatures generated by a number of factors, all of which are related to Grice's Cooperative Principle and concomitant maxims of conversation.¹⁶ We have already seen the basics of such an account in Reinhart's analysis, and Levinson (1987) presents a detailed account of the Gricean basis of these implicatures. He begins by restating the two parts of the Maxim of Quantity ("Make your contribution as informative as is required (for the current purposes of the exchange)," and "Do not make your contribution more informative than is required.") as the **Q-Principle** and **I-Principle**, respectively, each of which generates particular kinds of implicatures. Q[quantity]-implicatures "enrich utterance meaning just by inducing the negation of a stronger possible proposition" (p.402), e.g. 'Some of my best friends are linguists' Q-implicates 'Not all of my best friends are linguists.' The I-principle, formulated by Levinson as 'the maxim of Minimization' for speakers ("Say as little as necessary (bearing the Q-principle in mind)"), leads the hearer to enrich the utterance in particular ways, e.g. to "assume that stereotypical relations obtain between referents or events, UNLESS (i) this is inconsistent with that which is taken for granted, (ii) the speaker has broken the maxim of Minimization by choosing a prolix expression." (402) As an example, Levinson discusses the contrast between the sentences in (20).

- (20) a. Larry stopped the car.
 b. Larry caused the car to stop.

On the assumption that Larry is the driver, (20a) I-implicates that the stopping was done in the normal way, using the brake pedal, while the more complex expression in (b) implicates that it was not done in the normal way. Levinson labels implicatures from the form of the utterance 'Q/M-implicatures' ('M' for manner).

These three kinds of implicature, Q, I and Q/M, play a crucial role in the interpretation of referring expressions in discourse. Levinson summarizes how the preferred patterns of anaphoric interpretation follow from these principles.

[G]iven a choice between Lexical NP > Pronoun > Zero, a choice to the right will tend to implicate co-reference with another NP in the discourse in all loci where a reflexive could not have been used, while a contrastive choice to the left will tend to implicate a disjoint reading from another NP in the discourse that may otherwise be a possible antecedent. The pattern is generated by our principles as follows:

- (a) Where the syntax permits a direct encoding of co-referentiality, e.g. by the use of a reflexive, the use of an informationally weaker expression, e.g. a non-reflexive pronoun, will Q-implicate a non-coreferential interpretation.
- (b) Otherwise semantically general, minimally informative expressions (pronouns and gaps) will favour a co-referential interpretation by the I-principle, **unless**:
- (c) the use of a marked form, a lexical NP where a pronoun might have been used, or a pronoun where a zero might have occurred, will Q/M-implicate a non-co-referential interpretation. (411)

These principles account rather well for the (non-)coreference interpretations the standard cases of forward pronominalization intrasententially, but as Levinson notes, they run into trouble in dealing with backward pronominalization.

- (21) a. John_i thinks he_{vj} is a genius.
- b. He_i thinks John_j is a genius.
- c. John_i's friends despise him_{vj}.
- d. His_i friends despise John_{vj}.

The obligatory non-coreference reading in (b) follows from Levinson's account, but he is at a loss to account for the possibility of coreference in (d). At this point he abandons what he calls "a pure pragmatic account" and adopts Reinhart's analysis. His principles provide an explicit theoretical basis for the implicatures that Reinhart describes as determining (non-)coreference (cf. above). Levinson concludes:

Thus, adopting Reinhart's account, and supplementing it with our three interacting principles, we achieve a partial reduction of the Binding Conditions [cf. (5) above]: we retain an analogue of Condition A, governing reflexives and reciprocals, and add a grammatical rule for bound anaphora; all other co-referential interpretations will be due to the I-principle, operating within sentences just as it does across sentences in so called 'discourse anaphora', while all disjoint interpretations will be induced either by a Q-principle contrast with a more informative alternate (reflexive or bound-anaphora) or by a Q/M contrast between a reduced form

(favouring co-referentiality by the I-principle) and the fuller, lexical NP actually used. (p.417)

One of the striking features of these two types of non-structural explanation for pronominalization is that generally the adherents of each type neither refer to nor acknowledge the relevance of the other. That is, the Gricean pragmaticists do not refer to the discourse-pragmatic functionalists, and vice versa. There is no reference to any of K's work in Levinson, nor is there any reference in K's articles or *FS* to Grice or to the theoretical discussions that have been stimulated by his work. In his discussion of anaphoric patterns in Guugu Yimidhirr, an Australian Aboriginal language, Levinson simply dismisses discourse-pragmatics (in the sense used here) as being of no consequence for his analysis. This mutual rejection is all the more puzzling, because the two approaches are complementary, not contradictory. Let us consider again the examples in (21) which could not be handled in a "pure pragmatics" approach. K's principle (16a), despite Carden's counterexamples to it, is potentially useful here; the contribution of discourse-pragmatic factors to the interpretation of such examples is exemplified in (22), from Kuno (1975). (As with the examples in (17), the B responses are slightly odd because of the repetition of the lexical NP; it would be more natural to have a pronoun.)

- (22) a. A: Who is visiting John_i?
 B: His_i BROTHER is visiting John_i.
- b. A: Who is visiting who?
 B: *His_i BROTHER is visiting JOHN_i.
- c. A: Who is his_i brother visiting?
 B: *His_i brother is visiting JOHN_i.
- d. A: Who are John_i's brother and Bill_j's brother visiting?
 B: *His_i brother is visiting John_i, but I don't know about Bill_j's brother.

The coreference interpretation in a sentence like (21d) is possible when the reference of the pronoun has been established in discourse, and in such a case both the pronoun and the lexical NP are referring to the same discourse referent; the contrast between (22a) and (b) reveals this unambiguously. In discourse-pragmatic terms, both the pronoun and lexical NP are topical (presupposed), neither is part of the focus. Coreference is impossi-

ble if the lexical NP is in focus, as in (b) and (c) (which is not from K). In (a)-(c) there is a lexical NP occurring in a position where a pronoun is possible, and yet it does not generate the implicature of disjoint reference in all cases. Thus Levinson is correct to conclude that a purely Gricean account is not enough to deal with these cases. But the move to invoke principles of sentence grammar to fill the gap is not necessary, for there are discourse-pragmatic principles that provide an explanation as well. It is clear from these examples that the discourse-pragmatic function of the lexical NP as topic or focus is crucial to the interpretation; the implicature of disjoint reference ensues only when the NP is focal, and it fails when it is topical, in these examples. This follows Bolinger's and Bickerton's analyses as well; (c) would be an example of reidentification of the 'topic' in the rheme (focus) (Bolinger) or of pronominalization flowing from focus to topic (Bickerton). On the other hand, it must be emphasized that the contrast between topic and focus is not enough to predict coreference, as (23) shows.

- (23) A: Who is his_i brother visiting?
 B: His_i brother is visiting HIM_i.

To understand why the lexical NP implicates disjoint reference but the pronoun does not, Gricean principles are required. Thus, a complete functional account of these phenomena requires *both* kinds of principles, Gricean and discourse-pragmatic.

There is another reason why these two approaches should not be seen as antagonistic: the crucial concepts of the discourse-pragmatic program can be given Gricean foundations. One of the criticisms that is often made against discourse-pragmatic analyses is that the notions of topic and focus, while useful and intuitively reasonable, lack any kind of firm theoretical grounding. Kempson (1975) provides Gricean definitions of the notions of presupposition and assertion, and these underlie the concepts of topic and focus; Van Valin (1986) attempts to provide a characterization of 'focus domain' based on Kempson's formulations. Thus the ideas of discourse-pragmatic information structure and conversational implicature are essential tools for the analysis of pronominalization, and they both, directly or indirectly, are founded upon Grice's Cooperative Principle and maxims of conversation.

3.1.2 Kuno's account in Functional Syntax

It was pointed out in §2 that K regards his version of functional syntax as compatible with any theory of syntax, and an important consequence of this is his choice of the model of grammar that he employs in *FS*.

The generalizations that are presented in this book are of the kind that need to be incorporated into any theory of grammar. I assume, in this book, a model of grammar that is close to the theory that is represented in Chomsky's *Aspects of the Theory of Syntax*. (p.30)

This choice raises some very significant issues: if K's analyses are couched in terms a theory of grammar which makes crucial use of abstract underlying structures, extrinsic rule ordering, and a host of other features that have been abandoned by virtually all contemporary syntactic theories, is the applicability of his analyses to current theories compromised? And if it is, does that undermine the validity of the analyses themselves?

K begins his discussion by reviewing the major proposals regarding pronominalization, most of which were surveyed briefly in §3.1.1.1 above. He provides exceptions and counterexamples to each one, and his primary weapon is the facts in (4), repeated here for convenience; none of the syntactic accounts save Reinhart's can handle them.

- (4) a. John_i saw a snake near him_i.
 b. Near him_i John_i saw a snake.
 c. *He_i saw a snake near John_i.
 d. *Near John_i he_i saw a snake.

He points out that even her proposal makes the wrong prediction with respect to the examples in (24).

- (24) a. Near him_i, the investigator believed that John_i found a snake.
 b. *Near John_i, the investigator believed that he_i found a snake.

These examples are significant, because they exhibit the same anaphoric dependencies as in (4) but it is impossible for the subject NP in the complement clause to c-command the NP in the preposed PP. This suggests that the c-command relation in (4) is not in fact the relevant determining factor for coreference.

Much of K's discussion is devoted to resolving the following ordering paradox. (Keep in mind that all of the discussion is couched in *Aspects*

terms.) In the sentences in (4), the coreference patterns in the preposed variants, (b) and (d), correspond to the patterns in the unpreposed forms, (a) and (c), and so K concludes that the facts in (4) show that the rule of pronominalization must apply in the derivation before the rule of adverb preposing. He then presents the data in (25), which differ from those in (4) in certain important respects.

- (25) a. John_i found a snake behind the girl he_i was talking with.
 b. *He_i found a snake behind the girl John_i was talking with.
 c. Behind the girl John_i was talking with, he_i found a snake.
 d. Behind the girl he_i was talking with, John_i found a snake.

Here the coreference patterns of the preposed variants are not the same as those of the unpreposed versions, and therefore the grammaticality of (c) and (d) can only be accounted for if it is assumed that pronominalization applies *after* adverb preposing. Hence the facts in (4) and (25) lead to diametrically opposed conclusions regarding the ordering of pronominalization and adverb preposing.

K's resolution to this paradox is essentially the same as that presented in his 1972a and 1975 papers. He assumes the following rules for reflexives and disjoint reference (taken from Lasnik).

- (26) a. **Reflexive Rule:** A [+reflexive] NP must be coindexed with a clause-mate NP that k-commands it. A [-reflexive] NP must be marked for disjoint reference with a clause-mate NP that precedes and k-commands it.
 b. **Disjoint Reference Rule:** Mark NP₁ and NP₂ for disjoint reference if
 (i) NP₁ precedes and k-commands NP₂; and
 (ii) NP₂ is not a pronoun or reflexive.

The reflexive rule applies cyclically, while the disjoint reference rule applies to surface structure, i.e. applies after all other rules, including adverb preposing. With respect to (4a) and (4c), the reflexive rule applies to **him** in (4a) to mark it coreferential with **John**. This crucially presupposes that him is [+reflexive], a point that will be discussed in depth in §3.2. Since John is [-reflexive], the rule marks it and **he** as disjoint in reference. The later application of adverb preposing does not affect these assignments, and the disjoint reference rule cannot apply, because the NPs have already been marked by the reflexive rule. The facts in (4) are thus accounted for. In (25a) and (b), on the other hand, the reflexive rule cannot apply, because

the two NPs in question are not clause-mates, and consequently they are unmarked for (non)coreference. At surface structure the disjoint reference rule applies, marking the two NPs in (b) but not (a) as disjoint in reference, because only in (b) are the conditions for the rule met. If adverb preposing applies, as in (c) and (d), neither NP k-commands the other, and therefore the rule cannot apply, yielding possible coreference in both sentences. The ordering paradox is resolved in this way.¹⁷

K then begins an assault on the fundamental assumptions of GB Binding theory. He attributes the following set of assumptions to it. (p.72)

- (26) a. **Governing category:** There is a syntactically well-definable domain called a 'governing category' in which anaphors (reflexives and reciprocals) must find their antecedents; and NP, as well as S, constitutes such a domain.
 b. **C-command:** A single command concept controls binding, and it is that of c-command, rather than that of k-command or S-command.
 c. **Precedence:** Coreference or lack thereof can be determined without referring to the linear order of the NPs.
 d. **Homogeneity:** Coreference or lack thereof can be determined by applying *all* of the binding conditions at the same time (to LF-representation, to S-structure, or to both).
 e. **Obligatoriness:** All of the binding conditions apply obligatorily.

It is not possible to go into the details of each of his arguments against these positions, and consequently K's counter-positions will be summarized. With respect to (a), he first raises the problems noted with respect to (6) and then argues that NP is not a possible governing category for anaphors. This seems to fly in the face of well-known examples like **John admired Mary's drawing of herself**, in which the reflexive is bound in an NP, but K proposes that facts such as this follow from a 'chain-of-command' principle, which is given in (27).

- (27) If (i) two identical nodes A₁ and A₂ both k-command some other node B; and
 (ii) A₁ k-commands A₂; and
 (iii) A₂ does not k-command A₁; then any transformational operation involving A and B can apply only with respect to A₂ and B and not A₁ and B. Thus if there is a 'chain of

command' so that A_1 k-commands A_2 , A_2 k commands B and A_2 does not k-command A_1 but is identical to it, A_2 'controls' B, protecting it from the influence of A_1 .

This says simply that if there are two possible controllers for a reflexive or reciprocal pronoun, the 'closer k-commander' will be the controller. K has a great deal to say about the choice of controller for anaphors (in the GB sense), and this will be discussed in §3.2. It is sufficient at this point to note that (27) does not make the same claim as Principle A of the Binding theory regarding the governing category for anaphors.

The assumption regarding c-command as the relevant command concept, (26b), is, K argues, undermined by the fact that the chain-of-command principle makes crucial use of k-command and not c-command. This same principle plays a role in determining the domain for pronominal reference, since it is the complement of that for anaphors in GB. C-command is pertinent only to Principle C governing lexical NPs. Hence there is no single command concept operating in all of the binding principles.

Assumption (c), that linear order is irrelevant to determining coreference, is a major feature not only of GB but also of Reinhart's analysis. He cites the examples in (28) as evidence that c-command alone without reference to linear sequence is not adequate in all cases.

- (28) a. John took out a mirror, and he showed Mary_i herself_i.
 b. *John took out a mirror, and he showed herself_i Mary_i.

In these examples **Mary** and **herself** c-command each other within the same S, and therefore either they should both be bad, because a lexical NP is bound by a c-commanding NP (Principle C), or they should both be good, because the reflexive is bound in its governing category by a commanding NP (Principle A). In fact, only a precede-and-(c/k/S-)command analysis makes the correct prediction here. K takes this as evidence that linear order cannot be disregarded in the determination of coreference. There is some cross-linguistic evidence that strongly supports this conclusion. Williamson (1984) shows that in Lakhota, a Siouan language, there is no evidence for c-command restrictions on pronominal coreference and that the only limits on it are based entirely on the linear order of the elements involved; Mohanan (1983) makes a similar argument for Malayalam.¹⁸ Hence the view that linear order is irrelevant to the determination of coreference is untenable.

The last two assumptions, homogeneity and obligatoriness, are intimately linked in K's critique. The argument regarding homogeneity is

based on his resolution of the ordering paradoxes in (4) and (25): the reflexive rule (Principle A) must apply cyclically, but the disjoint reference rule for lexical NPs (Principle C) must apply after all other rules (in particular, fronting rules) have applied. Hence the binding conditions do not operate simultaneously at the same level of representation. The argument for the optionality of at least some binding principles is based on sentences like (29).

- (29) a. *John_i knew that Mary liked that picture of himself_i.
 b. John_i asked which pictures of himself_i Mary liked most.

The deep structure of (b) is identical to that of (a), and in the lowest-S cycle the reflexive rule would mark **Mary** and **himself** as coreferential in both; a later rule would filter the sentence out because of gender disagreement. This predicts that both sentences should be ungrammatical, but (b) is not. K's solution is to make the reflexive rule optional; it need not apply on the lowest S-cycle in (b) but does operate on the next cycle after the picture NP has been fronted, marking **John** and **himself** as coreferential. This shows, K claims, that the binding principles cannot be obligatory but that at least Principle A must be optional. This argument crucially presupposes K's multistratal analysis of the phenomena.

K concludes by presenting his reformulation of GB Binding theory.

(30) **Anaphor Rules** (Cyclical)

- Condition A': An anaphor is coindexed with a nonreflexive NP that k-commands it. (optional)
- N.B. 1: An S-structure that contains an anaphor which has not been coindexed with any other NP is unacceptable.
- N.B. 2: Anaphors are subject to the semantico-syntactic chain-of-command principle, with the principle applying more strongly to reflexives than to reciprocals.
- Condition B': A nonreflexive (pronominal or R-expression) is marked for disjoint reference in S with an NP that precedes and k-commands it. (obligatory)
- N.B.: Condition B' is subject to the chain-of-command principle.

Nonanaphor Rule (Postcyclical--applying to the S-structure)

Condition C': An R-expression is variably marked for disjoint reference with an NP that precedes and k-commands it. An R-expression is invariably marked for disjoint reference with an NP that precedes and c-commands it.

K presents a number of arguments and considerable evidence in support of his formulations. Regardless of whether they ultimately stand or fall empirically, his proposals raise important questions with respect to broader theoretical issues. As pointed out at the beginning of this section, K formulates his analyses in terms of the *Aspects* model of syntax but maintains that the generalizations are compatible in principle with any syntactic theory. This appears highly dubious in light of his actual proposals. To begin with, unlike the analyses presented in his earlier papers and the introductory chapter of FS, this is a purely structural analysis of anaphora; there is nothing functional about it. Therefore integrating his analyses into a syntactic theory would not involve the addition of some functional principle such as the one in (1); it would necessitate changes in the very conceptions of syntactic rules and representations themselves. His analyses of the facts in (4) and (25) depend crucially on a derivational model of grammar with multiple levels of syntactic representation, since one of the rules must apply in the underlying structure and the other to the output of the transformational operations in the derivation, especially the preposing rules. Furthermore, his account of the facts in (29) hinges vitally on the reflexive rule being optional rather than obligatory. One of his major points is that the pronominalization facts cannot be adequately handled in terms of only one level of syntactic representation. It is not possible to translate them into terms compatible with e.g. GB, as his reformulation in (30) shows graphically. Thus K's analyses require a model of syntax which incorporates features rejected by virtually all contemporary generative theories. There are two ways one could interpret this. On the one hand, they could be taken as arguments that monostratal models of syntax are in principle incapable of accounting for the full range of intrasentential anaphoric phenomena. On the other hand, if one were determined to maintain current assumptions regarding the nature of syntactic representation and rules, then it could be concluded that a purely structural account of these phenomena is impossible. What is clear is that K's adoption of an *Aspects*-style model of grammar is not an innocuous assumption.

For readers familiar with K's earlier work (cf. §3.1.1.2), the analysis of pronominalization in FS must come as something of a considerable shock and a major disappointment. By all appearances he has rejected his earlier functional analyses of pronominalization. He says that these chapters are revised versions of his papers from the 1970's, but in the case of pronominalization they amount to a reversal of his previous positions; they are formal syntax, not functional syntax.

3.1.3 *An alternative functional account*

The examples which seem from K's perspective to motivate most strongly a derivational account are (4) and (25), and they also happen to be the kind of examples which Reinhart (1983) uses to argue against Bolinger's and Bickerton's functional accounts of pronominalization. (Even in his earlier papers K did not have a functional-sentence-perspective-based analysis of them.) It is, therefore, essential for an (at least) descriptively adequate functional treatment of them to be proposed, if the functional approach is to be considered a viable alternative to formal approaches.

Reinhart devotes a chapter of her book to functional attempts to handle definite NP anaphora, and she notes that the principles proposed, e.g. Bolinger's and Bickerton's, appear to capture most of the facts that she handles in terms of c-command restrictions. With respect to (4) and (25) (repeated below), however, she claims that a functional account must fail, because the proposed phrase in (4b,d) and (25c,d) is a topic (theme, in Prague School terms) and accordingly there is no discourse-pragmatic difference to motivate the varying coreference possibilities.

- (4) a. John_i saw a snake near him_i.
 b. Near him_i John_i saw a snake.
 c. *He_i saw a snake near John_i.
 d. *Near John_i he_i saw a snake.
- (25) a. John_i found a snake behind the girl he_i was talking with.
 b. *He_i found a snake behind the girl John_i was talking with.
 c. Behind the girl John_i was talking with, he_i found a snake.
 d. Behind the girl he_i was talking with, John_i found a snake.

If a functional (pragmatic) contrast could be found between the proposed phrases in (4) and (25), contra Reinhart, then a functional explanation of these contrasts would be possible.

Let us begin by recalling the explanation for the unpreposed variants that was given in §3.1.1.2. Both Bickerton and Bolinger argued that intrasentential pronominalization operates *topic* → *focus*, and assuming normal predicate focus in these examples, this explains the grammaticality of (4a) and (25a) and the ungrammaticality of (4c) and (25b). K showed that backward pronominalization is possible when the referent of the pronoun was already established in the discourse and that the coreferential full NP must be in the 'given' part of the sentence, which is violated in (25b). The crucial question to be answered is, why is (4d) ungrammatical but (25c) grammatical?

The first step in answering it is the recognition that there are **two functionally distinct** preposed positions in English, which will be labeled the 'left detached position'[LDP] and the 'clause-initial slot'[CIS], respectively.¹⁹ They are illustrated in (31).

- (31) a. Who did John see at the party?
CIS
b. As for John, Mary saw him last week.
LDP
c. At the party, who did John see?
LDP CIS
d. John I haven't see in two weeks.
CIS

The CIS is the position in which Wh-words occur in unmarked movement questions, and when the element in it is a non-Wh NP, there is always a gap in the following clause, never a resumptive element. Gundel (1974) labels constructions like (31d) 'focus topicalizations', when the preposed NP is focal, 'topic topicalizations' when it is topical. Constructions in which an argument occurs in the LDP, e.g. (31b) are usually called 'left dislocations,' and there is a resumptive pronoun in the clause referring to the NP in the LDP. If the element in the LDP is an adjunct, as in (c), then there is no resumptive element in the clause. In all cases, the LDP phrase is topical, i.e. presupposed. The two positions are also distinguished prosodically; there is normally an intonational break after the LDP phrase, whereas the CIS phrase is not set off by such a break and is part of the intonation contour of the clause.

Reinhart has an extensive discussion of the differential behavior of preposed PPs, arguing that sentential (adjunct) PPs appear as a sister to S-bar

under the E[expression] or S-double bar node (in our terms, in the LDP), as in (31c), while VP (argument) PPs appear in COMP (in our terms, the CIS), as in (31a). One of the important differential properties of the two positions is the ability to occur with questions. As would be expected from their functional characterizations, an LDP phrase can cooccur with a question, either yes-no or Wh, since it is always presupposed and therefore never part of the assertion or question, but a CIS phrase cannot (unless the element in the CIS is a Wh-word), because since it is clause-internal, it would prevent the tensed auxiliary from appearing clause-initially, which is the primary indicator of interrogative illocutionary force in English. (Examples adapted from Reinhart)

- (32) a. In Ben's office, how does she act? LDP
b. *In Ben's office what did she place? CIS
c. In Ben's office, is she an absolute dictator.? LDP
d. *In Ben's office did she place a new brass bed? CIS

Crucially, the two types of preposed phrases have different coreference properties: NPs in LDP phrases can be construed as coreferential with the subject of the following clause, while those in CIS phrases cannot. (Examples from Reinhart)

- (33) a. In Ben_i's office, he_i is an absolute dictator. LDP
a'. In his_i office, Ben_i is an absolute dictator.
b. *In Ben_i's office he_i placed a new brass bed. CIS
b'. In his_i office Ben_i placed a new brass bed.
c. With Rosa_i's new job, she_i 'll end up in the hospital. LDP
d. *With Rosa_i's new boss she_i doesn't argue. CIS

Since the NP in the LDP is presupposed and therefore topical, it may be the antecedent for the subject, which is also topical; moreover, because one of the constraints on the occurrence of an NP in an LDP is that it be established in the discourse context (see Prince 1981, Lambrecht 1986), the construction meets K's principle (16a) governing backward pronominalization, and consequently (33a') is grammatical.²⁰ The NP in the CIS, on the other hand, is focal, not topical, and herein lies the explanation for its differing coreference properties. In (33b) **Ben** is the focus and **he** is the topic, and therefore pronominalization is *focus* → *topic*, which is impossible intrasententially, while in (b') **his** is part of the focus and **Ben** is the topic, yielding *topic* → *focus* pronominalization, the grammatical intrasentential pattern. This contrast can be seen clearly in (34), in which preposed NPs and not

PPs are involved; there is no ambiguity between focus topicalization and dislocation here.

- (34) a. HIS_i BROTHER John_i can't stand. CIS
 b. *JOHN'S_i BROTHER he_i can't stand.
 c. As for his_i brother_j, John_i can't stand him_j. LDP
 d. As for John_i's brother_j, he_i can't stand him_j.

Thus the different coreference properties of the two types of preposed phrases follows from their distinct functional properties. It is thus incorrect to claim, as Reinhart does, that all preposed phrases are themes, i.e. topical.

Returning to the examples that motivated this discussion, we see that the sentences in (4) are exactly parallel to those in (33): **John** is topic and **near him** is focus, and in the grammatical examples there is topic → focus pronominalization and in the ungrammatical ones focus → topic pronominalization. The preposed phrases in (25), on the other hand, behave exactly like LDP phrases; this can be seen in their behavior with respect to questions.

- (35) a. Behind the girl John was talking to, what did Bill find?
 b. Behind the girl John was talking to, did Bill find a snake?

These contrast sharply with (36).

- (36) a. ??Near her what did John find?
 b. ??Near her did John find a snake?

It might be objected that since the locative PP with **find** is an argument and not an adjunct, all of the preposed PPs with **find** must be located in the same position, namely the CIS, and therefore there is no functional contrast between the preposed PPs in (4) and (25).²¹ However, this argument does not go through, for the following reason. One of the facts which Reinhart discusses is that when additional material is added to preposed PPs, their coreference properties change. The reason for this is the more informational content there is in the preposed phrase, the more difficult it is to interpret it as a focus. Clause-initial foci tend strongly to be succinct (witness the highly marked nature of complex Wh-phrases in questions), while LDP phrases, particularly when they function to provide setting information, are often quite complex. If the preposed phrase is interpreted as topical, then there is no problem with topic → topic pronominalization, as in (25).

We have, thus, provided a discourse-pragmatic explanation of the coreference properties of the sentences in (4) and (25), using the framework and generalizations introduced in §3.1.1.2. It also handles the sentences in (24), which K argued were problematic for Reinhart's c-command analysis; in (24a) there is topic → focus pronominalization, while in (b) it is focus → topic. Since many of them came from K himself, it is somewhat ironic that he chose to take a purely structural approach to the problem. In any case, coreference patterns such as these do not provide evidence against functional analyses; indeed, in light of the failure of monosyllabic, non-derivational structural analyses, this treatment shows that the functional approach is a very viable alternative.

3.2 Reflexivization

Most of the discussion regarding anaphora (in the general sense) has centered on pronominalization rather than reflexivization, because it is generally assumed that reflexivization (at least in English) is much less complex and more easily described. There are a number of assumptions about reflexivization in English that are shared by virtually all analysts. First, reflexive-reciprocal forms [henceforth R-forms] are in complementary distribution with pronominals and lexical NPs in argument positions (cf. (6)). Second, all binding of a referring expression within the same S involves an R-form. Third, the syntactic domains in which R-forms can be bound are NP and S, and there is no long-distance binding by an antecedent outside the S in which an R-form occurs, unlike e.g. Icelandic. Consequently, most analyses posit a reflexivization rule something like Principle A of the GB Binding theory: an R-form must be bound by an antecedent in a particular structural relation to it, e.g. c-command, within the same NP or S.

K attacks the first and third assumptions while maintaining the second; it will be seen, however, that it too is questionable. The first assumption is not only crucial for structural analyses, but it is also vital for implicature-based analyses like those of Levinson and Kempson (1984). K presents the following examples to illustrate the problematic nature of the assumption about the distribution of R-forms.

- (37) a. John_i wrote to Mary about himself_i/*him_i.
 b. John_i compared Bill with himself_i/*him_i.
 c. John_i left his family behind *himself_i/him_i.
 d. John_i has many friends around *himself_i/him_i.

- e. John_i found a snake near *himself_i/him_i.
- f. John_i pulled the blanket over himself_i/him_i.
- g. John_i spilled gasoline all over himself_i/him_i.
- h. John_i has no confidence in himself_i/him_i.

(37a,b) represent the situation that is widely believed to represent the English situation with respect to the distribution of R-forms and pronominals. However, in (c)-(e) there is a referring expression bound by an antecedent within the same S, and yet the predicted reflexive form is ungrammatical and the occurrence of a pronominal is grammatical. This is the opposite of the situation in (a)-(b). Finally, in the final three examples both forms, R and non-R, are possible with the same interpretation of coreference with the subject. There is, however, a semantic contrast between the two forms in (f)-(h); it is brought into sharp relief in the pair of sentences in (38).

- (38) a. John_i has gum on him_i. (=John has gum stuck to/on him, John has gum in his pocket)
 b. John_i has gum on himself_i. (=John has gum stuck to/on him, *John has gum in his pocket)

The form with **him**, (38a), has two readings, one in which John is affected by having gum stuck on him in some way and one in which he is less affected by only having gum on his person, e.g. in a pocket. The (b) form with **himself**, on the other hand, has only the more affected reading. Thus the contrast between **himself** and **him** in these cases is not coreference but rather affectedness. This opposition leads K to posit the semantic constraint in (39).

- (39) **Semantic Constraint on Reflexives:** Reflexive pronouns are used in English if and only if they are the direct recipients or targets of the actions represented by the sentences. (p.67)

This constraint is not the whole answer, because (38a) can have the more affected reading; the main point is that the form with the reflexive can have this interpretation only. The situation is even more complicated than this, however. In the sentences in (40) (from David Wilkins, personal communication), the semantic contrast involves more than affectedness.

- (40) a. Bill_i has paint all over him_i.
 a'. *Bill_i has paint all over himself_i.
 b. *Bill_i got paint all over him_i.
 b'. Bill_i got paint all over himself_i.

The issue here is not affectedness, since **all over** is compatible with both **him** in (a) and **himself** in (b). Rather, the contrast seems to revolve around the more active role of the subject in the (b) examples, as indicated by the verb **get** as opposed to **have**, than in the (a) examples; **himself** is more felicitous when the subject does something to bring about the state of being covered with paint, while **him** seems to be more appropriate to a description of the resulting state of affairs without any implication that the subject contributed to it by his actions. Hence the semantic constraint in (39) must be supplemented to include the contrast in (40).

It is clear, then, that both R-forms and pronominals can be coreferential with another NP within the same S under certain conditions, and that the supposed complementary distribution of R-forms and pronominals fails not only in non-argument positions but also in certain argument positions. This is a dilemma for all of the standard structural accounts of pronominals and R-forms.

This lack of distributional complementarity is extremely problematic for the implicature theories of coreference discussed in §3.1.1.2 as well. Levinson's analysis of the contrast between R-forms and pronominals is that "where the syntax permits a direct encoding of co-referentiality, e.g. by the use of a reflexive, the use of an informationally weaker expression, e.g. a non-reflexive pronoun, will Q-implicate a non-coreferential interpretation." (1987:410) This, however, makes the wrong prediction with respect to (37f-h) and (38), since the contrast between the two referring expressions is something like affectedness and not coreference in these cases.

The second assumption, that all binding of a referring expression within the same S involves an R-form, is rarely made explicit, but it motivates K's analysis of **him** in (37c-h) and (38a). He claims that "all non-nominative personal pronouns are ambiguous between [-reflexive] and [+reflexive]." (68) Thus in all of these examples **him** is [+reflexive], which is why it can be bound S-internally. The condition in (39) is then reformulated to apply only to [+reflexive] forms with **self**. This solves the binding problem in these examples by definitional fiat; the analysis is thoroughly circular and non-explanatory. If one asks, 'why can **him** be bound S-internally in (38a)?', the answer is, 'because it is [+reflexive]'. If, on the other hand, one asks, 'how do you know that **him** is [+reflexive] in this sentence?', the answer is, 'because it is bound S-internally.' There are no independent criteria for identifying a pronoun as [\pm reflexive] beyond the binding facts.

This brings up the issue of the third assumption, namely the domain of reflexivization (and, by implication, of pronominalization). The assumption was formulated with respect to the nonexistence of long-distance reflexivization in English, but the question of short-range pronominalization is equally important. Short-range pronominalization between two definite NPs, at least one of which is in a non-argument position, is relatively common and much discussed, e.g. **John_i's mother loves him_i**. Such examples are not considered particularly problematic; since the full NP and the pronoun do not c-command each other, the usual binding formulations do not apply here. More troubling are the cases like those in (37), (38) and (40) in which there is short-range argument-binding of a pronominal in an argument position. The problem is this: it is clear that there are grammatical contexts of obligatory reflexivization, e.g. **Mary_i saw herself_i/*her_i** and (38a,b), and they necessarily involve arguments binding arguments; when a non-argument is involved, a pronominal instead of an R-form is used. From cases like these the erroneous conclusion has been drawn that the domain of obligatory reflexivization [DOR] is the S, which is the domain of possible reflexivization in English; this has been reinforced by the lack of interclausal reflexivization.²² This is very convenient for theories of autonomous syntax, because this domain can be characterized in purely phrase-structure terms with no reference to grammatical relations or semantic roles. However, as we have seen, S is not the DOR, and as an inspection of the sentences in (37) shows, the correct domain cannot be defined purely in phrase-structure terms, because all of the VPs in these examples have the structure [_{VP} V NP PP]. Moreover, because reflexivization involves arguments, it is highly unlikely that predicate-argument relations would be irrelevant to determining the DOR. While a thorough investigation of the proper characterization of this domain is beyond the scope of this discussion, certain of its features are obvious. Direct and indirect objects are in the DOR, as are some other kinds of prepositional objects; the ultimate explanation for the distinctions among prepositional objects with respect to reflexivization will have to be semantic, not syntactic; K's principle (39) is the first step toward an adequate semantic characterization. What we have, then, is a DOR which is defined in terms of syntactic and semantic predicate-argument relations, and it is in this domain, not in S, that the complementary distribution between R-forms and pronominals holds. Accordingly, it is in this domain that the standard binding formulations and the implicature theories are valid. Thus on this analysis there is no reason to

claim that a pronoun like **him** can be [+reflexive]; it is simply a pronominal, [-reflexive], which can occur bound S-internally if it is not in the DOR.

The issue of the potential domain of reflexivization is a very important one for K; he employs it in his critique of GB. One of his major points is that NP is not a governing category (domain) for reflexivization. The kind of sentences in (6), repeated here in (41a), along with the (b) and (c) examples show that, as has long been recognized, a reflexive within an NP can be bound from outside of it.

- (41) a. The children_i heard [_{NP} stories about each other_i].
 b. John_i bought [_{NP}a portrait of himself_i] at the studio.
 c. John_i bought [_{NP}a reproduction of [_{NP}a portrait of himself_i]] at the studio.

More significant are cases where there is a potentially controlling possessor NP in the NP.

- (42) a. *Mary_i wouldn't care a bit about John's opinions of herself_i.
 b. ?Mary_i wouldn't care a bit about anybody's opinions of herself_i.

K notes that while many speakers do not find (42b) fully acceptable, they do find it much better than (42a). The chain-of-command principle in (27) handles the sentences in (42), but it must be supplemented in order to account for the variable strength of the potential controllers in (42). K proposes two scales for determining the relative strength of potential controllers of an R-form; the syntactic one is related to the problem of determining the DOR.

(43) A. **Syntactic Scale**

The control of the subject of a verb for anaphor binding varies in strength according to the syntactic role of the anaphor:

- Strongest: The verb's direct object anaphor
 Middle: Object-of-preposition anaphor
 Weakest: Picture noun anaphor

B. **Semantic Scale**

The control of an NP for anaphor binding varies in strength according to the semantic/discourse nature of the potential controller NP:

- Strongest: Definite animate NP
 Middle: Definite inanimate NP
 Weakest: Dummy it, indefinite unspecific pronouns
 (e.g. **nothing, anything, nobody, anybody**),
that for previously mentioned event/state.
 (96)

The two sentences in (42) are identical with respect to the syntactic scale, but they differ sharply with regard to the semantic scale. The intervening potential controller in (a) is a definite animate NP, the strongest potential controller type, while in (b) is an indefinite nonspecific pronoun, the weakest type. K claims that the variation in acceptability between (42a) and (b) is a function of this difference.

The examples discussed thus far have involved an R-form inside an NP being bound by an NP outside of its NP; K also gives examples where it is necessary to go outside of the S containing the R-form to find its antecedent.

- (44) a. They_i made sure that it was clear to each other_i that this needed to be done immediately.
 b. They_i made sure that nothing would prevent each other_i's pictures from being displayed.
 c. They_i made sure that that wouldn't prevent each other_i's pictures from being displayed.

In each of these sentences there is an intervening potential controlling NP, but in each case it is the very weakest kind of controller and is unable to block coreference between the main clause subject and the R-form in the embedded clause. This is a very limited kind of long-distance reflexivization, not at all like that found in e.g. Icelandic, but taken together with the facts relating to short-range argument pronominalization, they further undermine the assumption that S is the appropriate domain for defining reflexivization and pronominalization. Thus each of the three assumptions listed at the beginning of this section have been shown to be questionable to varying degrees.

Virtually the entire discussion in chapter 4 of *FS* is devoted to the issue of determining the potential controller of an R-form. K first looks at argument R-forms in simple clauses. The standard case involving potential controller ambiguity is given in (45a), in which either the subject or the direct object can be understood as the controller, with subject being the unmarked choice.

- (45) a. John_i talked to Bill_j about himself_{ij}.
 b. One of the students_i talked to Bill_j about himself_{ij}.
 c. A student_i talked to Bill_j about himself_{ij}.
 d. A passerby_i talked to Bill_j about himself_{ij}.
 e. Someone_i talked to Bill_j about himself_{ij}.

In all of these sentences **Bill** is a potential controller, but the possibility of construing the subject as controller decreases from (b) through (e); the changes in the subject NP correspond to a slide down the semantic scale in (43B). When the positions of the possible controllers are reversed, the same phenomenon is found, as it becomes increasingly difficult to interpret the direct object as controller.

- (46) a. Bill_i talked to one of the students_j about himself_{ij}.
 b. Bill_i talked to a student_j about himself_{ij}.
 c. Bill_i talked to a passerby_j about himself_{ij}.
 d. Bill_i talked to someone_j about himself_{ij}.

K proposes four interacting hierarchies to account for the strength of the controller in constructions such as these; empathy will be discussed in §5.

- (47) a. **Empathy Constraint on Reflexives:** A sentence that contains a reflexive pronoun that is not a direct object of the verb requires that it be interpreted as one produced from the camera angle of the referent of the reflexive if the sentence is in the tense and aspect that requires an explicit camera angle with respect to the event described in the sentence.
 b. **Surface Structure Hierarchy:** Reflexives are better when their antecedents are in subject position than otherwise: Subject > Nonsubject.
 c. **Speech-Act Empathy Hierarchy:** It is difficult for the speaker to describe an action or state involving him while taking someone else's camera angle.
 d. **Anaphoricity Hierarchy:** In sentences that require the speaker to establish an explicit camera angle, the higher their antecedents are in the Anaphoricity Hierarchy, the better the reflexives are: Definite NPs > Indefinite NPs > Indefinite Pronouns. (p.158-9)

K assigns each of the factors numerical values and then computes the potential acceptability of a sentence. For example, in (46) **Bill** is subject and definite, and accordingly the value is (+2), which predicts that it should be grammatical. In (46d), on the other hand, **someone** is a nonsubject and an indefinite pronoun, yielding a value of (-3), which predicts that that reading should be unacceptable, which it is. Regardless of the ultimate validity of the particular hierarchies and the components that K proposes, his basic point, that the choice of the controller is not rigidly determined syntactically in many cases but rather is the result of the complex interaction of syntactic, semantic and discourse-pragmatic factors, is correct.

K next turns his attention to the controllers of picture noun [PN] reflexives in simplex sentences, and for these he proposes seven interacting hierarchies and variables.

- (48) a. **Awareness Condition for Picture Noun Reflexives:** Use of a PN reflexive is obligatory if the referent of the reflexive perceived/perceives/will perceive the referent of the PN as one that involves him. Use of a PN nonreflexive pronoun is obligatory otherwise. The above constraint is strongest if the awareness is concurrent with the action or state represented by the sentence and weaker if the awareness is not concurrent with the reference time but prior to it. Concurrent awareness > Prior awareness > Nonawareness
- b. **Picture Noun Agent as Controller for Reflexivization:**
- (1) Possessive NPs as PN agents are strong controllers for reflexivization.
 - (2) Semantic PN agents which are coreferential with some overt NPs in the sentence are also strong controllers for reflexivization.
 - (3) Indirect PN agents also serve as relatively strong controllers for PN reflexivization.
 - (4) *By*-agentive NPs of PNs are weak controllers for reflexivization.
- c. **Picture Noun Agent as Intervening NP:**
- (1) Possessive NPs on PNs serve as strong intervening NPs for PN reflexivization (except in idiolects in which indefinite **anyone's** and **anybody's** serve only as weak intervening NPs).

- (2) Semantic PN agents that are coreferential with some overt NPs in the sentence have the same blocking function against PN reflexivization.
 - (3) *By*-agentive PN agents also serve as intervening NPs, but their blocking power is considerably weaker than the other two.
- d. **Semantic Case Hierarchy of Picture Noun Reflexives:** An agent NP is the strongest trigger for PN reflexives. An experiencer NP and a benefactive NP are the second strongest triggers. A goal NP is a weak but possible trigger. Other NPs cannot trigger PN reflexivization. Agent > Experiencer/Beneficiary > Goal > Other cases
- e. **Surface Structure Hierarchy for Reflexivization:** Surface subject is the strongest trigger for reflexivization. Surface object is the second strongest trigger. Other NPs are weaker triggers than either of the above two. Subject > Object > Others
- f. **Anaphoricity Hierarchy:** We assume the following hierarchy regarding the relative degrees of anaphoricity: First-person pronoun > Other definite NPs > Indefinite NPs > In definite pronouns (**someone**, **anyone**, etc.) Then, reflexives are better when their antecedents are higher in the Anaphoricity Hierarchy than any other NPs in the same sentence.
- g. **Humanness Hierarchy:** The higher the triggering NP is in the humanness hierarchy, the better the result of reflexivization. Human > Nonhuman animate > Inanimate (p.179-80)

Again, K assigns arbitrary numerical weights to the members of the different hierarchies and computes the expected acceptability of the particular choice of controller. Some examples with their "trigger potential" value are given in (49).

- (49) a. John_i showed Mary of picture of himself_i. +5
- b. John showed Mary_i a picture of herself_i. 0
- c. *Mary liberally quoted from an American novelist_i in a book about himself_i. -19
- d. ?John_i hates stories about himself_i by Jane. -2

The merit of K's discussion of reflexivization triggers does not stand or fall on the viability of each of these factors or the exact correctness of each of the hierarchies. Considerable research is necessary before their empirical validity can be firmly established. Rather, the significance of his arguments lie in the demonstration that the determination of the trigger or controller of reflexivization in English is not a simple matter of syntax but rather involves the complicated interplay of a range of syntactic, semantic and discourse-pragmatic features. From a functionalist perspective, K's analysis of reflexivization is much more satisfying than his account of pronominalization.

4. Logophoricity

In his 1972b and 1975 papers, K argues that what he calls 'direct discourse perspective' must be incorporated into theories of pronominalization in order to account for otherwise mysterious phenomena, and chapter 3 of *FS* is a presentation of those arguments without much revision. In §3.1.2 it was shown that the rule determining disjoint reference for pronominals must apply after all other transformations had applied, in particular after rules like adverb preposing which change the linear order of NPs. The following examples, however, call that into question.

- (50) a. Ali_i repeatedly claimed that he_i was the best boxer in the world.
 b. *He_i repeatedly claimed that Ali_i was the best boxer in the world.
 c. ??That Ali_i was the best boxer in the world was claimed by him_i repeatedly.
 d. (?)That he_i was the best boxer in the world was claimed by Ali_i repeatedly.

By all of the accounts discussed in §3.1.1.1 and by K's account, summarized in (30), (50c) should be fine, since the pronoun S-/k-commands but does not precede/does not c-command the lexical NP, but in fact it is marginal; its unpassivized form, (b), is ungrammatical. K says that this suggests that "passive sentences involving pronouns and full NPs are acceptable or unacceptable depending upon whether the corresponding active sentences are acceptable or unacceptable," (p.103) but this the opposite of the situation that was found in sentences like (25). K pronounces this another rule-ordering paradox.

After reviewing several sets of sentences, some of which follow the pattern in (50) and others which conform to the pattern in (25), K proposes that the crucial distinction lies in the nature of the complement and the complement-taking predicate: if the complement represents the thoughts, beliefs or utterances of the subject of the complement-taking predicate, then the (50) pattern holds; otherwise the pattern in (25) obtains. These 'logophoric' predicates are the key to understanding these anaphoric phenomena, and they are quite important for others as well, e.g. long-distance reflexivization in Icelandic and Japanese crucially involves logophoric considerations.

K was the first generative linguist to notice the importance of logophoricity for the analysis of pronominalization. In keeping with his use of an anachronistic model of grammar, he proposes that in underlying structure logophoric complements are represented as direct discourse complements and that such complements then undergo a rule of indirect discourse formation, in order to give the non-direct discourse surface forms. The underlying form for (50a) would be something like (51).

- (51) [Ali claimed ["I am the best boxer in the world"]]

The indirect discourse formation rule changes the pronoun in the complement to match the person, number and gender of the subject of the logophoric verb and makes the other adjustments necessary for turning (51) into (50a). K suggests that there is no way to predict whether a verb is potentially logophoric or not: "Whether a given verb must or need not undergo indirect discourse formation is an idiosyncratic feature that must be specified in the lexicon." (p.107)

As with his analysis of pronominalization, the actual derivational treatment of logophoricity that K put forth is thoroughly incompatible with contemporary theories of syntax, both formal and functional. He attempts to render it somewhat compatible with GB by adding a logophoric rule to his revision of GB presented in (30). It is given in (52).

- (52) **Logophoric Rule** (cyclical)
 Condition D': Given a verb that takes [+logo 1/2] NPs and a logophoric complement clause, an R-expression in that complement clause must be marked for disjoint reference with the [+logo 1/2] NPs. (p.148)

This potential incompatibility is less of a problem in this case, however, for Sells (1987b) presents an analysis of logophoricity within Discourse Representation Theory (Kamp 1981) which does not involve abstract syntactic representations or derivations of any kind. K's generalizations about logophoricity should be storable in other theories. It should also be noted that whether a complement-taking predicate is potentially logophoric or not should not be an idiosyncratic feature of its lexical entry, given a theory with a rich enough lexical semantic representation scheme for verbs and semantically-based theory of complex sentences.²³

5. Empathy

The final topic discussed in *FS* is what is usually termed 'perspective' or 'point of view' in literary studies; K labels it 'empathy perspective' and characterizes it in terms of the 'camera angle' from which an event is described. Given an event involving two participants, **A** and **B**, a speaker could describe it from **A**'s camera angle, from **B**'s camera angle, or from an objective camera angle. He illustrates these contrasts with the following sentences in which John and Bill are brothers.

- | | | |
|---------|--|---------------------|
| (53) a. | Then John hit Bill. | Objective |
| b. | Then John hit his brother. | John's perspective |
| c. | Then Bill's brother hit him. | Bill's perspective |
| d. | Then Bill was hit by John. | Bill's perspective |
| e. | ?? Then John's brother was hit by him. | Conflicting |
| f. | ?? Then his brother was hit by John. | Conflicting |
| g. | Then Bill was hit by his brother. | Bill's perspective. |

K defines empathy as in (54a) and accounts for the marginality of (53e) and (f) by proposing the constraint in (54b).

- (54) a. **Empathy:** Empathy is the speaker's identification, which may vary in degree, with a person/thing that participates in the event or state that he describes in a sentence. (p.206)
- b. **Ban on Conflicting Empathy Foci:** A single sentence cannot contain logical conflicts in empathy relationships. (p.207)

For example, in (53e), the description of Bill as 'John's brother' indicates empathy with John, but the use of a marked construction, in this case the passive, to make Bill the subject signals empathy with him, and therefore

there is, according to K, a conflict between distinct empathy foci which violates (54b).

A likely source for the insight into the significance of empathy phenomena is the lexicalization and grammaticalization of social deixis relations in the Japanese verbal system. K exemplifies this with Japanese verbs of giving.

- | | | | |
|------|-----------------|---|---------------------------------------|
| (55) | | A-series | B-series |
| a. | Informal: | <i>yar-u</i> | <i>kure-ru</i> |
| b. | Semi-honorific: | <i>age-ru</i> (recipient honorific) | — |
| c. | Honorific: | <i>sasiage-ru</i> (recipient honorific) | <i>kudasar-u</i>
(giver honorific) |
- (56) a. *Taroo ga Hanako ni okane o yar-u.*
to money give-PRES
- b. *Taroo ga Hanako ni okane o kure-ru.*
give-PRES
'Taroo gives money to Hanako.'

Despite the fact that both sentences in (56) receive the same translation in English, there is an important difference between them: *yar-u* describes the event from the perspective of the subject, the giver, while *kure-ru* presents it from the point of view of the recipient, the grammatical indirect object. This can be seen clearly in sentences involving a first-person argument; since the speaker always has the most empathy with himself, conflicting empathy foci are generated if the wrong verb is used.

- (57) a. *Boku wa/ga Hanako ni okane o yar-u/*kure-ru.*
'I give money to Hanako.'
- b. *Hanako wa/ga boku ni okane o *yar-u/kure-ru.*
'Hanako gives money to me.'

(*Boku* means 'I, me'.) *Kure-ru* cannot be used with a first-person subject, as in (57a), because the verb presents the perspective of the indirect object, not the subject. Similarly in (b), a first-person indirect object is impossible with *yar-u*, because this verb describes the action from the perspective of the subject. This type of lexicalized deixis is not unique to Japanese; it is commonly found in verbs of motion, e.g. **come** vs. **go** and related verbs in English, where the choice of verb is determined in part by the speaker's perspective on the motion (see Fillmore 1971).

As with reflexive controller choices, K presents a number of hierarchies relating to empathy choices. The main ones are given in (58).

- (58) a. **Descriptor Empathy Hierarchy:** Given descriptor x (e.g., **John**) and another descriptor $f(x)$ that is dependent upon x (e.g. **John's brother**), the speaker's empathy with x is greater than with $f(x)$. $E(x) > E(f(x))$, e.g. $E(\text{John}) > E(\text{John's brother})$. (p.207)
- b. **Topic Empathy Hierarchy:** Given an event or state that involves A and B such that A is coreferential with the topic of the present discourse and B is not, it is easier for the speaker to empathize with A than with B : $E(\text{discourse-topic}) > E(\text{nontopic})$. (210)
- c. **Surface Structure Empathy Hierarchy:** It is easier for the speaker to empathize with the referent of the subject than with the referents of other NPs in the sentence. $E(\text{subject}) > E(\text{other NPs})$. (p.211)
- d. **Speech Act Empathy Hierarchy:** The speaker cannot empathize with someone else more than himself. $E(\text{speaker}) > E(\text{others})$. (p.212)
- e. **Word Order Empathy Hierarchy:** It is easier for the speaker to empathize with the referent of a left-hand NP in a coordinate structure than with that of a right-hand NP. $E(\text{Left-hand NP}) > E(\text{Right-hand NP})$ (p.232)

It should be noted that these principles relate to syntactic choices, like those in (53) and not, with the exception of (d), to the kinds of lexicalized deixis illustrated by the Japanese verbs of giving. When all of the hierarchies in (58) are taken together, it appears that they can all be reduced to a single principle: $E(\text{more topical NP}) > E(\text{less topical NP})$. The preposed possessors in (58a) are highly topical (Riddle 1984, Deane 1987); subject is the unmarked topic position in English, as we have seen; speech act participants are highly topical, due to what Silverstein (1981) calls "the unavailability and transparency of metapragmatic reference" (p.241); and finally, following the Prague School and others, more topical elements tend to be to the left of less topical elements, *ceteris paribus*.

Thus the empathy phenomena K discusses appear to boil down to two sets of phenomena: speaker's choices regarding lexicalized deixis (e.g. deciding whether to describe a motion event as **coming** or **going**) and topicality. Speakers do seem to have considerable freedom of choice regarding lexical deixis alternatives, and here some notion of 'empathy,' 'perspective' or 'point of view' seems justified. With respect to topicality, however,

speakers have much less freedom of action, and moreover the kinds of decisions that are made regarding topicality seem rather different from those regarding deixis. It is not clear what is gained by labeling both of these phenomena 'empathy.' K's attempt to bring all of them together and unify them under the single concept of empathy is, therefore, rather problematic.

6. Conclusion

Functional Syntax is clearly an important book; it covers a great deal of empirical ground and deals with a number of issues which are of central importance to contemporary linguistic theory, most notably anaphora. It cannot be said, however, that K succeeds in making a convincing case for his conception of functional syntax. With respect to the complex issue of pronominalization, he abandons his earlier functional analyses and proposes a purely structural account of the conditions for definite NP anaphora, an account which is couched in a model of grammar that is incompatible with virtually all current theories of syntax. He is rather more successful in showing that the choice of the controller of a reflexive/reciprocal expression is far more complicated than current treatments allow, and he demonstrates that this choice is the result of the intricate interplay of syntactic, semantic and pragmatic factors. His discussions of logophoricity and empathy are based largely on his previously published work; his generalizations about logophoricity and pronominalization are the kind of functional generalizations that can be incorporated into syntactic theories, perhaps along the lines suggested in Sells (1987b), and the extent of the relevance of a concept like empathy remains unclear, since it can be reduced to two other, rather better understood notions.

This book finds itself in something of a predicament; it tries to address a very disparate group of linguists, and yet it seems very likely that it will not reach its intended audience. On the one hand, the discussion of anaphora is very relevant to work in GB, but if for no other reason than its title it is unlikely that it will be read by GB researchers. On the other hand, many functionalists, particularly those of the extreme persuasion, will be turned off by K's conservative functionalism and willingness to propose structural instead of functional analyses in many cases. This would be an unfortunate result, for K's work is worthwhile reading for syntacticians of all theoretical perspectives.

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NOTES

1. I would like to thank Knud Lambrecht, Johanna Nichols, Peter Sells and David Wilkins for comments on an earlier draft.
2. One exception to this is work on Role and Reference Grammar, e.g. Van Valin (1985, 1986, 1990a,b), Cutrer (1986) and Jolly (1986), which has proposed analyses many of the phenomena at the forefront of formal syntactic theory, e.g. control, unaccusativity, extraction restrictions, case marking.
3. A third approach, based on formal semantics, will not be discussed; see e.g. Bach and Partee (1980), Keenan (1974, 1988).
4. Unless otherwise noted, the examples are from K's discussion; I have not provided the original references from which K took the examples.
5. In his discussion K refers to the original notion of command as 'S-command' and to Lasnik's concept of 'kommand' as 'k-command.'
6. These examples also raise the important question as to how a pronoun in an argument position can refer to an NP within the same clause; all theories of anaphora predict that only a reflexive pronoun should be possible here, but that is in fact ungrammatical (***John saw a snake near himself**). This will be a major topic of discussion in §3.2.
7. She adds a crucial provision to the effect that in the case of branching nodes of the same category, e.g. S-bar and S, the two nodes count as a single branching node for the purposes of determining c-command relations.
8. See Kempson (1984) for arguments that bound anaphora can be subject to pragmatic conditions.
9. 'Minimal governing category' is used in the same sense as in GB theory; see below.
10. See Reinhart (1981) for a formal characterization of the pragmatic aboutness relation.
11. The equation of theme and topic is not exact, since Bolinger (and K) link the theme function to initial position in a sentence. In Lambrecht's terms this is a reflection of the fact that the unmarked position for the topic to occur is in subject, i.e. initial, position.
12. The discussion here will be based primarily on K's 1975 paper, which supersedes the earlier ones in many crucial respects.

13. K uses this term in two ways. First, like Bolinger, he employs it to refer to the element in initial position in the sentence which the sentence is about. Second, he also uses it in contrast with neutral description sentences, which, he claims, lack a theme and are all new information. Thus he uses it sometimes to mean, in Lambrecht's terms, initial topic and sometimes to designate a predicate focus construction.
14. This means simply that contrast and exhaustive listing are types of marked narrow focus; it is not meant to imply that they do not have distinct interpretations.
15. Carden's critique is perhaps the reason why K does not discuss examples of backwards anaphora like those in (17) in *FS*; there is no reference to Carden's paper in the bibliography. See Sells (1987a) for a discussion of some of the discourse factors affecting the acceptability of backwards anaphora.
16. Kempson (1984) presents a programmatic sketch of an anaphora theory of this type based on the Sperber & Wilson (1986) theory of relevance. She states that the theory of relevance entails that "the only factor that constrains the construction of contexts in addition to any relevant specification of elements in the language and the principle of relevance, is the assumption that certain types of information are immediately accessible...." (p.4). She then claims that

the concept of definiteness associated with both pronouns and definite NPs simply is that of guaranteed accessibility. If a speaker uses a pronoun or definite NP, then he is indicating to the hearer that a representation of an NP type is immediately accessible to him in the sense specified--either from the scenario of the utterance itself, or from the preceding utterance, or from preceding parts of the same utterance, or from concepts expressed by what precedes the anaphor. (p.4)

 While she illustrates the working of this analysis with a few examples, it is difficult to determine whether it is capable of dealing with the full range of examples that are discussed in the anaphora literature.
17. This is essentially the same solution he gave in his 1972a and 1975 papers.
18. I am indebted to Peter Sells for bringing Mohanan's analysis to my attention.
19. The term 'left detached position' is from Lambrecht (1986). Dik (1978) argues for this same contrast, labeling them simply 'P1' and 'P2.'
20. The fact that **Ben** is in subject position, the unmarked topic position, meets K's principle (16b); note the unacceptability of (i) in which **Ben** is focus rather than topic.

(i) *In his_i office, Mary likes to kiss Ben_i.
21. Interestingly, there are some speakers of English for whom (4d) is fully grammatical on the coreference reading, and these speakers seem to require a pause after the preposed PP. This suggests that such speakers interpret the PPs as being in the LDP rather than CIS, and this would predict that they would find questions like (35) perfectly grammatical, which they do.
22. I am ignoring reflexives in picture NPs for the moment.

23. Role and Reference Grammar (Foley and Van Valin 1984, Van Valin in preparation) is such a theory, and Van Valin & Wilkins (1989) shows how the syntactic properties of complements can be predicted from the semantic representations of their complement-taking predicates. For similar arguments, see Wierzbicka (1988).

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