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# FUNCTIONAL APPROACH TO PRONOMINAL ANAPHORA

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This article examines the role of context in restricting pronominal coreference. The analysis is carried out within the functional framework — an area very much neglected in present-day research. Complex and simple sentences are dealt with in two sections. As a starting point for the discussion I have chosen a major functional principle of Bickerton (1975) as I consider his paper to be one of the most articulate attempts at constraining anaphora. To retain clarity of exposition I have included a brief introductory passage on the relevant aspects of the functional approach.

#### INTRODUCTION

The analysis presented below is consistent with the main principle of the functional approach — the priority of function over structure. The term "function" is used here in the sense of Leech (1983). Thus both the interpersonal function (language as an expression of one's attitudes) and the textual function (language as a means of constructing a text) can be handled by pragmatic, rather than grammatical description. For an interesting discussion see Leech (1983: 56 - 78). The underlying assumption here is that linguistic description as a whole may be independent of the function to which a given element is put but that certain structures can actually be function-dependent.

Levinson (1983:40) defines functionalism as "explanation of some linguistic feature by reference to external factors (especially causes and functions)". He then goes on to say that "the possibility exists that language structure is not independent (contrary to Chomsky's well-known views) of the uses to

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which it is put. That is to say, it may be possible to give powerful functionalist explanations of linguistic phenomena by reference to pragmatic principles." (Levinson 1983:40). Function — dependence is an important asset when it comes to explaining cases which are troublesome on syntactic grounds.

The functional analysis has often been employed to describe pronouns. In the two sections which follow some problems of pronominal coreference are considered in a more detailed way.

## PRONOMINAL ANAPHORA IN COMPELX SENTENCES

Bickerton (1975) constrains pronouns by means of a single rule, given below in (1).

(1) Coreference is possible between two NPs if both are thematic or if the pronoun is included in the rheme but its antecedent is part of the thematic section. (Based on Bickerton 1975: 32)

An example will clarify the issue. (Asterisks are used throughout to precede grammatically ill-formed sentences).

- (2) a. Speaker A: Mary's terrible upset. What did you do to offend her?
  - \*b. Speaker B: Well, I just told her, what I thought of Maryi.

The most natural rejoinder to (2a) would have both subscripted NPs pronominalized in (3).

(3) Speaker B: Well, I just told her; what I thought of her;.

This is largely due to the fact that under normal conditions pronouns carry a weak degree of stress because they represent old information. To retain *Mary* as in (2b) is to give it unnecessary prominence. Observe, however, that the response to (2a) becomes a little more coherent with *Mary* in the object position of the main clause, as in (4).

(4) Speaker B: Well, I just told Mary, what I thought of heri.

Contextual superiority of (4) over (2b) can be handled in terms of rule (1). Consider the following dialogue.

- (5) a. Speaker A: Why did they go there?
  - b. Speaker B: They went there to see the Queen.

(theme) (rheme)

The theme-rheme caesura follows the there adverbial. New information is represented by the infinitival clause to see the Queen. Let us observe the effects of negation on (5b).

- (6) a. They didn't go there to see the Queen.
  - b. It is not the case that they went there to see the Queen.

What we seem to have thus negated is not the very act of going (theme) but rather the purpose of the visit (rheme), as both sentences in (6) easily yield themselves to the interpretation that they went there to, say, kill the Prime Minister. (The fact that (6b) also admits of a different interpretation need not concern us here). The following generalization seems to be appropriate.

(7) Most typically it is the rheme that is denied under negation. (cf also Smith and Wilson 1979: 165)

The denial of discourse-anaphoric fragments is possible only with the introduction of a new sentence element, but even then it is marked and unusual. Bearing this in mind observe (8) which is the negated counterpart of (4).

- (8) a. I didn't tell Mary<sub>i</sub> what I thought of her<sub>i</sub>.

  I told her the story of my life.
  - \*b. I didn't tell Maryi what I thought of heri.

    I preferred to write it out to her.

(8b) is acceptable only with a reinterpretation of the stress pattern so as to assign to tell a clearly contrastive function. In other words, the scope of negation extends most naturally here over the sentential object what I thought of her which we might therefore assume to represent new information in (4). Furthermore I told Mary is background information in (2) because of the interlocutor's earlier remark Mary's terribly upset which firmly establishes. Mary in the foreground of the on-going discourse.

To conclude: the her of (2b) is discourse-anaphoric while Mary belongs to the rhematic segment. Coreference is blocked. In (4), however, Mary as the object of tell is thematic and the pronoun rhematic. Coreference in (4) is possible, as correctly predicted by functional rule (1).

It is worth noting that this rule renders unnecessary some of the structural constraints on coreference. Consider for instance sentences in (9). They were first discussed in Postal (1971:23).

- (9) a. What annoyed Billi was my punching himi.
  - \*b. What annoyed him; was my punching Billi.
  - c. It was my punching him; that annoyed Billi.

<sup>1</sup> Negation, is doubtless, a more complex problem than that. I am conscious of the on-going debate concerning the status and scope of negation in natural languages (and in particular the unresolved question of ambiguity). This, however, does not affect the issues raised in this paper so I have decided to work on the assumption that internal sentence negation is pragmatically dominant.

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To account for (9) Postal introduces constraint (10).

(10) Backwards Pronominalization is banned across a copular verb of referential identity [his emphasis].

The rule predicts the ungrammaticality of (9b) where him occurs to the left of the lexical be and Bill occupies the sentence-final position. In (9c) the two NPs are placed on the same side of was. Consequently, Backwards Pronominalization is applicable. And finally (9a) is, in transformational terms, a case of Forwards Pronominalization. Constraint (10), however, fails to account for (11).

(11) My punching him; was Billi's major gripe.

Contrary to what (10) seems to be saying, the sentence is acceptable with a weak degree of stress on him and Bill. Both (9) and (11) find a natural explanation within the functional framework. The wh-clauses of the cleft pattern in (9) can easily be shown, by means of negation tests, to represent old information.

(12) a. It is not true that what annoyed Bill was my punching him.
b. It wasn't my punching him that annoyed Bill.

Negation extends over new sentence elements (cf. 7). Both (12a) and (12b) imply that something annoyed Bill. Hence Bill's annoyance should be thematic as it does not fall within the scope of negation. And this is all that is needed for rule (1) to apply.

An analogical explanation holds for (13) below, which was first advanced by Kuno (1975: 292) as a counterexample to rule (1).

- (13) a. My punching Billi was what annoyed himi.
  - b. My punching him; was what annoyed Billi.

Kuno observes that what annoyed him represents old information in (13) and my punching him is a new discourse element. This leads to the inevitable rejection of (1) as being too general: "the sentence is grammatical in spite of the fact that the Bill in the known part has been pronominalized because what is involved here is Forward Pronominalization and not Backwards Pronominalization" (Kuno 1975: 292). I believe Kuno's analysis to be wrong. In the first place observe that (13b) is acceptable only with the primary stress on punching or on my. (Kuno admits it indirectly by assuming a weak degree of stress on Bill.) In consequence, (13b) is interpreted accordingly: it takes for granted, in addition to the fact that something annoyed Bill, also the fact that it was something I did to him. What it introduces for the first time into the discourse is only that punching rather than anything else was the source of Bill's annoyance. Bill and him in (13) are in the thematic

segment and that is why they can be coreferential. Thus (13) turns out to be an argument to support constraint (1).

The essence of this argument seems to be that the antecedent must represent old information. The term "old information" should be understood broadly so as to include cases where an object is mentioned for the first time but is either predominant in the minds of both speakers or exists within view (cf. Kuno 1975). This particular application of the rule involves a degree of pragmatic control over the pronoun (cf. Hankamer and Sag 1976: 391) as it suggests that objects visible to the speaker and/or hearer can easily become part of the extralinguistic context.

Under this interpretation the famous Bach-Peters sentences can be accounted for.

(14) The man who hit it, shot the MIG, that chased him.

The transformational analysis has been unable to convincingly account for the relation holding between the *it* and the *MIG* of (14). Let us start by tracing a context in which (14) could naturally be uttered. Such a context is not easy to find which accounts for the relative conversational "oddity" of the sentence. However, it has been pointed out to me (Tom Wachtel, personal communication) that (14) could perhaps, with a stress on *hit* and *him*, be a coherent response to (15).

- (15) Who shot the MIG and who was it chasing?
- (15) firmly establishes the MIG in the known segment. Rule (1), under the broad interpretation of the old information load, correctly predicts that a rejoinder to (15) might allow the pronoun to precede its antecedent, as in (14). The rule also allows cases where (14) is uttered without any linguistic context, for instance while pointing to a falling MIG. We would assume then that the plane has been sufficiently salient in the minds of both speakers.

It should be clear by now that rule (1) makes a very powerful claim on the interpretation of pronouns: every pronoun must have an antecedent in the preceding context. This seems a very commonsensical observation: after all we should first establish what it is that we are going to talk about before actually indulging into a conversation. And yet this claim is too powerful. There are cases which the rule cannot handle. Consider (16).

(16) As he prepares for his trip of South America, John Paul II spoke of the tensions in the region

Please note that (16) was included in the opening summary of the BBC news bulletin. No listener was supposed, therefore, to have had any preconceived ideas about the identity of the subject pronoun in the first part of (16). It was only after the Pontiff's name had been disclosed that listeners were

given a referent for the pronominal subject of the as-clause. It is interesting in this connection to observe how the change in the linear order of the constituents affects the grammaticality of the whole utterance. The anaphora options are given below.

- (17) a. As John Paul II prepares for his trip he spoke of the tensions in the region.
  - b. As he prepares for his trip John Paul II spoke of the tensions in the region.
  - c. John Paul II spoke of the tensions in the region as he prepares for his trip.
  - \*d. He spoke of the tensions in the region as John Paul II prepares for his trip.

Only the last of the four sentences in (17) would not be uttered to describe the actions of one single person. I suggest that the reason is purely functional. Recall at this point that one of the principles of functionalism is the priority of function over structure. This means that any given structure should unambigously perform the function to which it is put. From this follows an important guideline for language users: speakers should not confuse their interlocutors as to, inter alia, the grammatical status of the utterance. Observe that anybody exposed to sentence (17d) would face considerable processing difficulties: having heard the initial part one would naturally (though mistakenly) assume he spoke of the tensions in the region to be a complete sentence. In (17b) on the other hand the introductory conjunction is a signal that the utterance will continue beyond the boundaries of the as-clause and so the hearer ought to be on the look-out for possible antecedents. An analogical explanation holds for (18).

- (18) a. When he came Tom called me a fool.
  - \*b. Hei called me a fool when Tomi came.

On hearing the pronoun in (18a) the listener might well expect its antecedent to turn up in the superordinate clause as he is by then expecting the superordinate clause itself at any rate. No such reasoning is possible in the (b) sentence. We cannot link the subject pronoun with the *Tom* of the latter part of the utterance as we have hardly been prepared for a follow-up to he called me a fool. And it is this mistaken presupposition that blocks coreference in (18b).

These two examples have shown, I believe, the need for an important restriction on anaphora in complex sentences: with a pronoun and its antecedent in separate clauses we can interpret the pronoun as referring to a following antecedent provided that the hearer has been expecting the utterance to continue beyond the boundaries of the pronoun-containing, introductory

clause. This awareness of utterance complexity can be achieved through an appropriate opening phrase, e.g. when, the fact that, as soon as, etc., since phrases like when he came home are ungrammatical by themselves while he came home is perfectly acceptable as it stands. Thus we would await a continuation in the former case, though not necessarily in the latter.

When no such syntactic signal is available, it is still possible to retain the pronoun/antecedent pattern. The hearer then must be offered ample contextual opportunities to reconsider his original (mistaken) interpretation of the pronoun. Sentences in (19) are a good example.

- (19) \*a. Hei refused because Tomi was a man of honour.
  - b. Hei refused to cooperate with the enemy because Tomi was a man of honour, a man to whom the safety of his skin came a very long way behind his loyalty to his country.

It seems that the relative length of the sentence performs an analogous function to the syntactic markers of subordination which were referred to earlier on. The hearer is given time to go over his anaphora options without being caught off-balance with the unexpected appearance of an antecedent. The context in (19b) helps create the impression that the sentence really is about Tom. Hence its superiority over (a).

In this section I examined some of the exceptions to the antecedent-pronoun pattern. These can be handled in terms of rule (1). I have also tried to demonstrate that the pronoun-antecedent pattern of complex sentences can be accounted for by means of either syntactic or contextual markers of coreference. The time has come, then, to have a closer look at the anaphora options in simple sentences. Possessive NPs are notorious in this respect. No convincing structure-based interpretation of the problem has been worked out so far. In the next section I will present a few suggestions on how to handle possessive NPs in terms of FSP.

# SIMPLE SENTENCES: COREFERENCE WITH POSSESSIVE NPs

Let us observe, to start with, that sentences containing possessive NPs suggest the inadequacy of (1).

- (20) a. In heri apartment Ritai smokes pot.
  - \*b. In Ritai's apartment shei smokes pot.

It could be shown by means of a negation test (which I have left out for reasons of space) that both *Rita* and *her* represent old information in (20). Since (1) allows coreference between old information items, (20b) is incorrectly predicted to be grammatical. To account for this discrepancy Bickerton suggests that (1) be made sensitive to the derivational history of possessive

phrases whenever stress is neutral (cf. Bickerton 1975: 29). It amounts to saying that structures like (21) below derive from those like (22).

- (21) Rita's apartment
- (22) the apartment belongs to Rita

These speculations are meant to demonstrate the need for a further constraint on pronominalization.

(23) Where one NP has been part of the theme throughout its derivational history and the other has not, pronominalization shall be from the former to the latter. (based on Bickerton 1975:32)

Bickerton's account is unconvincing for a number of reasons. First, and perhaps less importantly, the introduction of Deep Structure embedding is inconsistent with Bickerton's own views on functionalism which he perceives as a chance "to discard the old framework entirely and to start over from scratch with a different framework" (p. 9). Furthermore, if we allow certain transformations to operate within the functional framework, constraints on these transformations should also be applicable. In particular, notice that (22), advanced as an underlying string for (21), clearly violates the recoverability constraint on transformations. Obviously, the apartment belongs to Rita is a very likely but, from the semantic point of view, in no way exclusive paraphrase — and in this case underlying representation — of Rita's apartment. In an equally plausible interpretation it might denote the apartment which Rita designed, furnished or perhaps temporarily inhabits without necessarily owning it. In other words there is no way of establishing the DS string for (21). This is inconsistent with the recoverability constraint.

Notice finally that if Rita's apartment is to mean (and be derived from) the apartment which Rita furnished, designed etc., then the rhematic status of Rita is much more problematic than in the case of the straightforward the apartment belongs to Rita. Moreover, (21) could just as well be derived from Rita owns the apartment (the two are, to my mind, largely synonymous) where Rita is an old information item. These facts suggest that the solution for possesives antecedents should be sought elsewhere.

Let us first examine to what extent functional principle (1) is capable of handling possessive anaphors. Consider the examples in (24).2

- (24) \*a. In Tomi's speech hei abused the government.
  - b. In hisi speech Tomi abused the government.
  - c. Tom; abused the government in his; speech.
  - \*d. Hei abused the government in Tomi's speech.

The preposed adverbial represents old information in (24a) and (24b). A natural question to precede (24b) would thus be Did he have anything interesting to say in his speech?, which takes for granted the hearer's familiarity with the form but not the content of Tom's message. Both (24c) and and (24d) are impossible as responses to this question. That suggests that the sentencefinal adverbial is a necessary discourse fragment being part and parcel of the new information load. (24c) is a likely rejoinder to, say, In what way did Tom abuste he government? Here, unlike cases (a) and (b), it is the means of opposing the government which has attracted our attention, with Tom in the background of the discourse. It follows that Tom is "known" in (24c) while his belongs to the new information segment. These are the exact conditions for rule (1) to apply. By the same token we will reject (24d) as it allows the pronoun in the known part with its antecedent introduced as a new discourse element. Example (24b) is just as straightforward: pronominalization is possible either way with the two NPs in the known part of the utterance. Principle (1), however, should also be applicable to (24a) which strongly resembles the (b) sentence in terms of information distribution. We have to account for its failure in this respect. Observe the same pronoun/antecedent pattern in the following examples.

- (25) a. For his; wife Bill; would give his life.
  - \*b. For Billi's wife hei would give his life.
- (26) a. In heri room Maryi committed suicide.
  - \*b. In Maryi's room shei committed suicide.

The (a) sentences are more natural when identity of reference is intended (cf. also note 2). In a sense this might seem counterintuitive since "an object of possession" is introduced first before its actual "possessor" had been disclosed. Examples (b), on the other hand, are more readily interpreted as disjoint in reference. This is due to the fact that the preposed forms (which I shall call adverbials even though the exact grammatical status of some of these is debatable) usually represent old information and proper nouns, if they appear in the thematic segment, tend to be reduced to their respective pronominal forms. It follows then that an unreduced NP in a preposed adverbial is not coreferential with an NP in the "known" part. To put it differently: if a fully lexical NP is retained in a preposed adverbial, it is largely to avoid confusion, so that the lexical NP is not misinterpreted as being coreferential with the subject pronoun. We might thus be tempted to generalize as in (27).

- (27) Possesive determiners should precede their antecedents.

  This explains why (28) is often considered unacceptable.
  - (28) In Johni's apartment hei often smokes pot.

The interpretation here crucially depends on stress distribution. Several more readings are possible in spoken language.

The problem with such sentences is, however, that they are fine at least for some native speakers. Grammaticality judgements here are fuzzy and the speaker's hesitance should be reflected in any descriptively adequate theory of pronouns. I am inclined to think that the key factor involved is that of "willingness to cooperate". The speakers who accept (28) might reason thus: "I assume that X wants to communicate to me the fact that somebody smokes pot. There is no other plausible referent for the main clause pronoun since none has turned up in the afore-going discourse, and therefore I may conclude that X means John. I do not doubt that X talks sense". All that suggests that there is nothing inherently ungrammatical about the asterisked sentences in (24-26) as well as in (28) which greatly reduces the plausibility of rule (27). The hearer's final decision is determined to a considerable degree by context clues. Observe (29).

- (29) a. In Johni's family hei is the brightest.
  - b. In his family John is the brightest.

The (a) sentence seems slightly odd. It is important to remember that it becomes much more natural if a sufficiently rich context is provided.

- (30) a. Speaker A: John is a real genius. Few people can stand up to him.
  - b. Speaker B: Don't exaggerate. There are some brighter sparks even in John's family.
  - c. Speaker A: Are you crazy? In John's family he is certainly the brightest.

The subject pronoun he is coreferential with John's in (30c); but is does not have to be, since the referent of he is independently recoverable from the preceding context. This is what rule (1) predicts. Further support for the rule comes from the observation that the coreference link between the John's and the he of (29) is possible for most speakers only with John as the topic of the discourse. Notice that (31b) is unacceptable in the context of (31a), since John is not discourse-anaphoric there.

(31) a. Speaker A: Who do you think is the brightest in John's family? ?b. Speaker B: In kohn's family he is the brightest.

I have tried to demonstrate that rule (27), appealing as it might seem to us at first sight, should be approached with caution: the pronominal form may follow its antecedent with a context provided. That is why (32) is possible.

(32) The women in Gold's family believed he liked his food excessively salted.

- (32) rounds up the description of a family gathering where Mr Gold's likes and dislikes were fervently discussed. Consider yet another example.
  - (33) To Partridgei's regret, shei had not succeded in learning that.

The sentence has been taken from Agatha Christie's *The Moving Finger* and the reader does not have a single doubt that *Partridge* and *she* do in fact refer to the same person. The correct ordering seems to be contextually determined.

#### CONCLUSIONS

In this paper I have tried to examine the problem of context-dependence of pronominal anaphora. The exceptions to the established antecedent-pronoun pattern in complex sentences have been shown to be due to contextual and syntactic factors. The possessive NPs have been investigated in the second section. And here as well context clues have turned out to be the ultimate criterion. The functional constraints, admittedly vague and ill-defined, are intuitively satisfying as they agree with our common sense understanding of interpersonal communication whereby we tend to move from what is known to what is unknown but not the other way round. It seems fair to say that functional considerations might be the source of some crucial insights and as such should be incorporated into any descriptively adequate theory of language.

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