

## The Modes of Pronominal Reference and their Constraints

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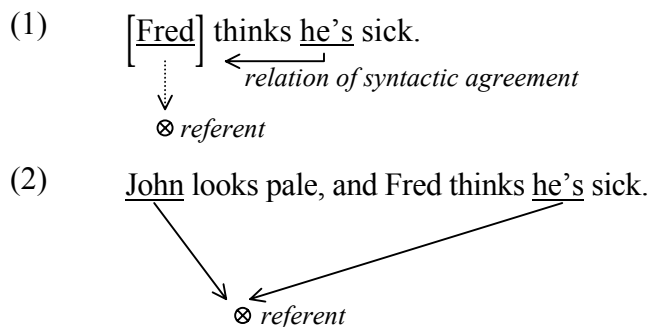
### 0.

This paper addresses itself to two standard problems about pronouns:<sup>1</sup> (i) the (fairly recent) problem of providing constraints on the interpretation of pronouns, and (ii) the (very old) problem of explaining how linguistic forms that are semantically as attenuate as pronouns can ever refer to anything specific rather than being indefinitely ambiguous whenever they occur (as one might expect).

Neither problem has yet been solved with any degree of theoretical or empirical satisfactoriness, and I should like to suggest that the first problem could not even have been solved without there being at least a tentative solution to the second. There is no good reason to expect that all forms from a form class as diverse as the class of pronouns should behave semantically in the same way, in particular, that all pronouns should link up to their antecedents and referents by means of the same kind of process. And as long as we do not know which processes exactly we want to constrain, the formulation of constraints on the interpretation of pronouns would look a bit like guess work.

### 1.

Accordingly we shall attend to the second problem first. And in order to eventually arrive at a classification of pronoun uses according to three different modes of “pronominal reference”, we shall begin with a first distinction between pronouns that occur referentially as opposed to pronouns that occur non-referentially. The difference as far as English personal and possessive pronouns are concerned, is not a difference in form: the same forms occur in either use. Let me illustrate the difference by means of two diagrams.



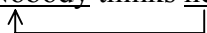
In (1) the pronoun links up by syntactic agreement to the syntactic position that is occupied by Fred. This relation is independent of reference and of a purely syntactic nature. In (2) the

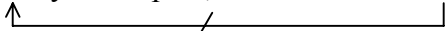
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<sup>1</sup> This paper is largely based on research carried out for my Ph.D. thesis (Bosch 1980). Most points dealt with in the present paper are treated there more extensively. The present paper differs however in taking a somewhat different view on the notions of deixis and referentiality. I am indebted for extensive discussions of matters dealt with in this paper to a good number of people, in particular however to Thomas Ballmer and Helmut Schnelle.

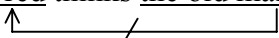
pronoun and John both occur referentially and happen to refer to the same referent: their relation is mediated by reference. Pronouns functioning in the former way I propose to call syntactic agreement pronouns, short: SP; pronouns functioning as in diagram (2) we might call referential pronouns, short: RP.


It should be clearly understood that we are only concerned in the above diagrams with one particular use of the pronoun: the use where it links up to Fred in (1) and where it links up to John in (2). Now, if our claim that in this use the pronoun in (1) occurs non-referentially is correct and if the “anaphoric” relation is not mediated by reference, then the relation should also hold if we have a clearly non-referential antecedent in place of the referential Fred. Correspondingly, in (2) the “anaphoric” relation would have to break down upon such a substitution because there the relation is mediated by reference and if we replace one of the two related expressions by a non-referential one, no referentially mediated link is possible. The following sentences, resulting from such a substitution, show that these consequences of our claim turn out correct:

(3) Nobody thinks he's sick  


(4) Nobody looks pale, and Fred thinks he's sick.  


It furthermore follows from our claim about the pronouns in (1) and (2) that the RP in (2) should be replaceable by any other suitable referential NP that can refer to the same referent without any damage to the anaphoric relation. No such substitution should however be possible for the pronoun in (1): that pronoun is an agreement morpheme and hence may reasonably be expected to be morphologically fixed. Also this consequence turns out correct:

(5) Fred thinks the old malingerer is sick.  


(6) John looks pale, and Fred thinks the old malingerer is sick.  


The essential difference between RP and SP is, to repeat, that the former occur referentially and the latter do not. But what is it for an expression to occur referentially? Intuitively we should like to say that an expression occurs referentially in an utterance iff that utterance can be interpreted only with respect to a context where there is a referent for that expression. But why then should we not say that nobody occurs referentially? For nobody may indeed be said to be understood just by referring to a particular function: a nice name for it is “the booby prize function” for it is kind enough to assign the much desired truth value 1 to just those poor properties that otherwise never manage to get it (not anyway when they are applied to persons). But still, we are not happy to say that nobody should occur referentially. Because it would always, quite independently of context, refer to that function, it would, in a sense, trivially comply with our requirement for referential occurrence, just like all of the s.c. logical vocabulary would: and, or, if, then, etc. All these expressions would refer to functions of one or the other kind, but always to the same, independently of context. But these items would of course be the last whose occurrence we should happily call referential. So we might then amend our referentiality definition as follows:

An expression *E* occurs referentially in an utterance *U* iff *U* can be interpreted only with respect to contexts where *E* has a referent and if *E* does not by definition have a referent in all contexts.



- (8) Ojo ro pe oun mu-sasa.  
 (Ojo think COMP SP be-clever)  
 Ojo thinks he is clever (he = Ojo).

(the examples are taken from Faltz 1977). Furthermore, a good number of French and English based pidgin languages take the third person singular masculine pronoun as a general subject agreement marker (cf. Givón 1976 for examples and references).

I hope these considerations have made the notion of as non-referential syntactic devices somewhat more attractive. For the referential character of pronoun occurrences on the other hand, I take it that no argument is required.

Although now the statement that SP behave like person Agreement markers may count as at least a sketch of an answer to the question of “how pronouns refer” for the case of SP, the mere statement that RP are linked to their antecedents or referents by processes of reference can hardly count as an answer to the question of how they refer, i.e. of how they manage to refer to specific objects despite their attenuate semantics.

Apollonius Dyskolus, who for all we know was the first to explicitly discuss the problem of how pronouns refer, also supplied us with the proposal for a solution: he said that pronouns refer either through deixis or through anaphora (cf. his Peri Antonymias, 10 B). I cannot here go into a text critical discussion to argue for what I take to be Apollonius’s understanding of deixis and anaphora. I simply take the definitions for the two notions offered by Konrad Ehlich (1979) which I believe render the Apollonian notions correctly:

“The deictic procedure is a linguistic means to achieve the focussing of the hearer’s attention towards a specific item which is part of the respective deictic space.”

“The anaphoric procedure is a linguistic means to make the hearer continue (sustain) a previously established focus towards a specific item which he had oriented his attention to before” (1979:913).

The two notions are here defined in terms of linguistic behaviour; but it would be nice if we had definitions also in terms of linguistic structure. In order to get structural definitions eventually, we shall briefly take a look at some notions about context and context change as they have been developed over the past years by a good number of people (including myself) and most notably by Ballmer (1978). We assume that each utterance is a tool in one sense or the other for transforming an established context into a new one. Of course, context here is not to be understood as context in rebus but as a construct built up and changed continually in the course of discourse. In a sense, context may also be seen as a reconstruction of context-in-rebus within the discourse. Now, for an utterance to be able to change an established context, it must first of all link up to, refer to parts of an established context. And by saying something about it (if we just restrict ourselves to assertive utterances) the utterance then changes the established context  $C_0$  into its successor  $C_1$ . To take a simple example, consider an utterance of

- (9) Fred walks.

This utterance may link up to  $C_0$  by referring to an individual called “Fred” in  $C_0$ , by means of the constituent Fred. And to this individual it attributes the property that, according to our knowledge of English, is referred to by the verb to walk. But sentence (9) could also be uttered linking up to a context in which there is no individual Fred available but instead a

particular property referred to by the verb to walk. The utterance would then be saying about this property that it is a property of Fred's. In either case, the new context, resulting from the utterance of (9), would normally contain both the individual Fred and the property of walking as one of his properties. The two ways of construing (9), either about Fred or about walking, are paralleled by differences as to emphasis: the constituent that refers to what the utterance is about is de-accented, and the other carries the emphasis. The difference is also, obviously, paralleled by different options as to the contextualization: if (9) is an answer to a question like "And how is Fred going to get there?" it is, Fred being given in the established context, about Fred; if (9) comes as an answer to a question like "Does anybody walk?" however, the utterance will be about walking rather than Fred.

In accordance with Ehlich's definitions of anaphora and deixis, we should now like to say that in (9) Fred occurs anaphorically where the sentence is used to say something about Fred, and that walks is used anaphorically where the sentence is used to say something about walking. Accordingly, we can also have an anaphoric pronoun in place of Fred, or a verb phrase anaphor in place of walks:

(10) And how is Fred going to get there? He wálks.

(11) Does anybody walk? Fréd does.

In either case the anaphor or the anaphorically used full constituent is used as a means, in Ehlich's terms, to sustain a previously established focus, or, in terms of context change, to link up to an established context. Deictically used expressions, on the other hand, would be means to achieve a new orientation of focus of attention; in terms of context change: would focus on something still to be introduced into the context. But how can this be done? How do we know what to focus on if it is not yet in our focus of attention? The reader will probably know that famous formulation by Frege: that the sense of an expression leads us to its reference, and that the sense of an expression is what everybody can grasp who knows the language. Hence: if we are told about Fred that he walks, our knowledge of the sense of the expression walks will help us to locate the referent of that expression in the new context: that property of walking that applies, as we are told, to Fred. Similarly, the sense of the name Fred (i.e. the set of Fred's properties -or Fred's "character") will tell us what person to look for and what person to introduce into the new context as the bearer of the property of walking, when we are told about walking that this is one of Fred's properties.

The proposal we are making then is that expressions which focus on something new, on something not yet in the established context, do so via their sense. Still, we would not want to call all expressions so used deictic expressions. In particular neither Fred nor walks would be called deictic although they comply with the conditions of deicticity we have so far explained. Although then the conditions given so far are necessary for deictic occurrence, they are not yet sufficient. Prototypical deictically used expressions would be for instance the he, this, that, there in the following sentences:

(12) It's hé who you are looking for.

(13) Hé is-going to buy the next round.

(14) {This/Thát} is the Windermere Hotel.

(15) Thére you see a typical Victorian jardenier.

Now we might want to say that these expressions give us next to no properties of the objects they are supposed to make us focus on. In a sense this is right. But they do give us an indication as to the location in the pointing space where we find those objects; and in that sense they also give us properties of the objects. And in any case it is the sense of the deictic

expressions that leads us to their reference. Expressions without a sense (English it is such an expression)<sup>3</sup> accordingly cannot be used deictically but can refer only anaphorically.

The role of constituents of utterances for context-change, and accordingly their referring to their sense or to a particular referent, is conveniently accommodated in the function-argument structures we can assign to the corresponding sentences. For sentence (9) above we propose the following two structures, each representing one of the two understandings we have discussed:<sup>4</sup>

- (16) a.  $\lambda x$  walks  $x$  . Fred                      b.  $\lambda P P$  Fred .  $\lambda x$  walks  $x$

In each case the argument is the object the corresponding utterance says something about; and it is also the argument-expression that refers to an object in the established context. With regard to these function-argument structures, we call them focus-sensitive function-argument structures, the notions of anaphoric and deictic occurrence can now be defined as follows:

An expression  $E$  occurs anaphorically in an utterance  $U$  iff its translation in the focus-sensitive function argument structure of  $U$  is an argument expression.

An expression  $E$  occurs deictically in an utterance  $U$  iff its translation in the focus-sensitive function argument structure of  $U$  is a functor, that functor refers to a locational property, and  $E$  occurs referentially in  $U$ .

Perhaps the last condition in the definition of deictic occurrence is superfluous; this would depend on what precisely is a locational property, a notion we have only hinted at above but which we do not yet have a full account for. The intention of the referentiality condition in any case is to exclude non-referential expressions like e.g. the logical vocabulary (which would be translated as functors into our function-argument structures) from being marked as deictic.

With this explication of the anaphoric vs. deictic distinction within the realm of referentially occurring expressions we have now completed our exposition of the pronoun classification we want to propose. To sum up, we distinguish the following types of occurrences according to the corresponding modes of “pronominal reference”:<sup>5</sup>

- |   |        |
|---|--------|
| (i) non-referential syntactic agreement pronouns (SP) | } (RP) |
| (ii) referential anaphoric pronouns (AP)              |        |
| (iii) referential deictic pronouns (DP)               |        |

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<sup>3</sup> It in English cannot occur deictically and cannot take emphatic stress. Cf. e.g.:

(i) It's {\*it/hé} you are looking for.

It can furthermore be used to anaphorically refer to unidentified objects (no other English pronoun can be so used). Cf. the contrast:

(ii) When the game-keeper was coming out of the bushes I thought {it/he} was a boar and I shot.

Using he in (ii), instead of it would be adding insult to injury: then I am saying that I thought the game-keeper was a boar. What I should be saying in order to use (ii) as an excuse is that I thought that what was coming out of the bushes was a boar: and in order to say that, i.e. in order to refer to the unidentified object, I have to use it.

<sup>4</sup> Although in different terms, basically the same distinction in the structuring of assertions was already proposed by Russell (1905), when he talked about the primary vs. secondary occurrence of definite descriptions. Also Strawson (1964) discusses a very similar distinction extensively.

<sup>5</sup> Note that of course the AP vs. uP distinction is manifested in linguistic forms in many languages; take for instance French il vs. lui etc. But cf. also English predicate nominal constructions: “It’s {<sup>?</sup>I/me}”.

## 2.

In the second part of this paper we are now attending to the problem of constraints on the interpretation of pronouns, restricted however, to AP and SP.

SP we regard, to repeat, as agreement morphemes that occur in complex functors or argument expressions and express agreement with the respective argument expression or functor. In function-argument structures they can accordingly be represented by variables that are bound by the abstractor that keeps together, as it were, the complex functor or argument expression in which the SP occurs. To the extent that function-argument structures are matched by syntactic surface structures, SP are commanded by their antecedents. Accordingly, we propose the following constraint on SP (the Syntactic Agreement Constraint, short: SAC):

SAC: Non-referential pronouns (SP) can be “anaphorically” related to an NP only if

- they occur inside (but are not identical to) either the functor or the argument-expression of which the NP is the argument-expression or functor respectively, and
- they agree with that NP syntactically.

This is all we want to say about SP for the moment. A good deal more research into agreement processes in a wider sense and over a good number of diverse languages is needed before a better understanding of the functioning of SP, in particular in relation to other forms of agreement, can be achieved.

When we go on now to AP, we should briefly reflect upon how AP pick their referents. Semantically the pronoun does not have the power to single out its referents, Too many possible referents would remain as the possible referents of he, she, or it. We can sensibly use AP only, when their intended referents are, in the current context, more salient already than all other possible referents. And the most salient object at any moment in discourse, we suggest, is the object the discourse is about. When we have been talking about Fred for a while and no other man, and then we say “I have never really understood him”, him inevitably will refer to Fred. Or when we have been sitting in silence for a while and hear an enormous noise outside, and I get up to the window and say “It's an old Austin”, it will refer to that noisy car outside. What a discourse is about at a certain moment or what it can or cannot be interpreted as being about is sometimes a difficult decision, and intuitions are not always very clear. But neither are intuitions about what a certain anaphor can and cannot refer to. So basically this is nothing to worry about. Still, sometimes intuitions can be made clearer by means of the popular question test we briefly referred to earlier. To give an illustration to support the connection between anaphoric relations and aboutness, take the following sentences:

(17) Near John he saw a snake.

(18) Near him John saw a snake.

I take it that no anaphoric relation between he and John in (17) is possible; an analogous relation in (18) however is possible. Intuitively we should also say that the first sentence can clearly not be interpreted as saying anything about John, but the second can. The question test supports this intuition: (18) would, but (17) would not be an appropriate answer to a question about John, cf.

(19) What did you say about John?

- (17) Near John he saw a snake.

- (18) Near him John saw a snake.

Now this gives us at least a good *prima facie* case for an aboutness constraint on anaphora that should be saying roughly something like this:

An anaphorically used expression can only refer to an object which the discourse at the relevant moment is about.

For clarification of the notions: we say strictly that a speech act is about an object (of whatever complexity and whatever abstractness); but we also say, in a derived way of speaking, that a sentence *S* (independent or embedded) can be about an object *O*. A sentence *S* is about *O* iff *O* is the referent of the highest argument expression in the function-argument form of *S*. Furthermore we say that *S* is indirectly about *O* if *S* is (directly) about *O'* and *O'* is given by explicit reference to *O*. Also *S* is indirectly about *O* if *S* is directly or indirectly about *O'* and *O'* is given by explicit reference to *O*. Accordingly a sentence like

- (20) In the flat above John's shop he had no electricity.

would be directly about the location given as "in the flat above John's shop" and indirectly about John's shop, John, and perhaps the flat above John's shop.

With the clarification of direct and indirect aboutness we can now give the actual aboutness constraint on anaphora (short: the ABC):

ABC: For an anaphor *A* that occurs in an independent or embedded sentence *S* to refer to an object *O*, *S* must be interpretable as being directly or indirectly about *O*.

The ABC accounts straightforwardly for cases of the type brought into the pronoun discussion by Lakoff (1968) and Bolinger (1977), where there is no apparent syntactic difference between a pair of sentences but the anaphora options in both sentences are different. Cf. e.g.

- (21) a. He was still a little boy when I first saw John.  
b. He was a little boy when I saw John.
- (22) a. In the flat above John's shop he had no electricity.  
b. In the flat above John's shop he lived.
- (23) a. Julia hit him before Max left in his Rolls Royce for a dinner engagement at the Ritz.  
b. Julia hit him before Max left.
- (24) a. He lied to me, and John was my friend.  
b. He lied to me, and John grew raddishes.
- (25) a. In John's family, he's the genius.  
b. In John's family he's welcome.

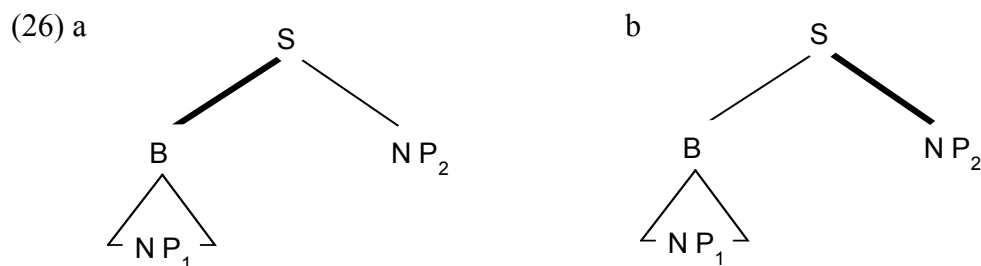
In all the (a) sentences, he and him can have an anaphoric relation to John and Max respectively. The corresponding relations in the (b) sentences are not possible. The relevant difference is that all the (a) sentences but none of the (b) sentences can be taken to be about John or Max, at least in the more usual kind of contextualizations. The question test may be used to corroborate this intuition.

The ABC makes crucial use of the notion of aboutness. And that notion is a highly context-dependent one. It is however, as we remarked, reconstructible in terms of focus-sensitive function-argument structures. As the ABC is formulated however, it does not make use of this

reconstruction and is quite neutral as to the type of grammar we employ. Although aboutness is a context-dependent notion, it is itself subject to context-independent constraints: a sentence cannot be about just any of the referents of its constituents and, correspondingly, some sentence-internal anaphora options are excluded. The relevant constraint is the following (we call it the Anaphora-Constraint, short: AC):

AC: Two NPs may be anaphorically related only if neither of them is (a constituent of) a functor or argument-expression of which the other is the argument-expression or functor respectively.

The AC excludes anaphoric relations between the NPs in all and only structures of the following type:



(where functor nodes are marked by being linked by a fat line to their dominating node). Note that the AC is a constraint on AP and not on SP (NP<sub>1</sub> as an SP could be “anaphorically” related to NP<sub>2</sub>!) Note further that the terminologically similar pronominalization constraint derived from Keenan’s (1974) functional principle excluded the anaphoric dependence of NP<sub>2</sub> on NP<sub>1</sub> in (a) and of NP<sub>1</sub> on NP<sub>2</sub> in (b), but not the other two relations. Reinhart’s constraints (1976) excluded the anaphoric dependence of NP<sub>2</sub> on NP<sub>1</sub> in both (a) and (b) and required for the dependence of NP<sub>1</sub> on NP<sub>2</sub> that NP<sub>1</sub> be a pronoun. Accordingly, Reinhart cannot exclude the anaphoric relation between Fred and him in

(27) Fred hit him.

She has to allow for the anaphoric relation in (28), and there is no difference in c-command relations, on which her constraints are based:

(28) Fred hit himself.


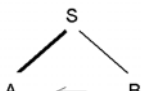
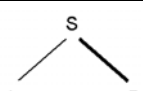
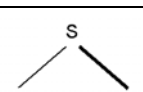
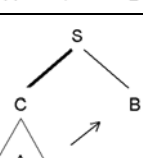
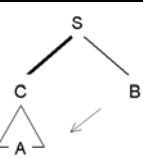
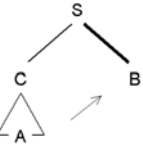
For us there is no problem here, because himself is an SP, and the AC is concerned only with referential items. Under Keenan’s constraint, (27) was not excluded either.

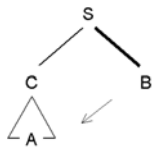
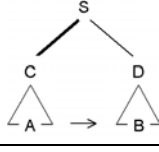
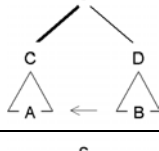
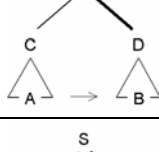
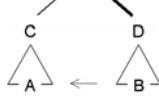
But except the fact that to the best of my knowledge there are no counterexamples to the AC, there is another theoretically far more interesting advantage to it: the AC can be proved to be correct in the sense that it is a mere consequence of the notions of function and argument in terms of which it is formulated. Thus if the AC does in fact hold empirically, it does so not by way of hocus-pocus (as was typically the case for transformationalist constraints, which some transformationalists tried to give a more reasonable appearance by attributing a “mental reality” to the hocus-pocus) but for good (analytic) reasons. Consider the above structures in (26): in (a), NP<sub>2</sub> cannot possibly depend anaphorically upon NP<sub>1</sub> because otherwise the argument would not be determinable independently of the function that is applied to it: we could not say what we are talking about without saying what it is we want to say about it. And NP<sub>1</sub> in (a) cannot anaphorically depend upon NP<sub>2</sub>, because otherwise the function could not be given independently of the argument: we could not say what it is we want to say about NP<sub>2</sub> independently of NP<sub>2</sub>. Note however that in the case where the position of NP<sub>1</sub> is taken by an SP, the function B does not contain a reference to NP<sub>2</sub> but the position of NP<sub>1</sub> would be occupied by a variable bound by a lambda-abstractor: hence in this case the function can be

given independently of the argument. The case of NP<sub>1</sub> depending anaphorically upon NP<sub>2</sub> in (b) is analogous to what we have discussed already: again the argument could not be determined independently of the function. And NP<sub>2</sub> in (b) cannot anaphorically depend upon NP<sub>1</sub> because the function must be determined independently of the argument (also, in our terms NP<sub>2</sub> cannot be an anaphor anyway because it is a functor).

Note that this sketch of a proof for the AC does not depend on the notion of aboutness, nor on the notion of context change; but also within those conceptual schemes the AC can be proved eventually.

With the SAC, the ABC, and the AC we have now a complete set of constraints on anaphora in the wide sense, i.e. including syntactic agreement pronouns, which are not anaphors in the proper sense, and also including nominal anaphors. We have not been concerned however with VP-anaphora and anaphora of other syntactic categories; nor have we been dealing with other pronoun forms than the English personal and possessive pronouns. Some extensions of the approach here sketched to other data are fairly obvious and others need a lot more research; but we shall not speculate here on possible extensions. Rather, to conclude, let me give a tabular synopsis of what is excluded by the three constraints proposed. The table is given on the next page (the arrow-notation employed there, e.g.  $A \rightarrow B$ , means that A depends “anaphorically” upon B).

no.		conceptual exclusion	exclusion by ABC	exclusion by AC	exclusion by SAC
1.		A can't be an anaphor bec. it is a functor +	-	+	+
2.		-	S is not about A +	+	+
3.		-	S is not about B +	+	+
4.		B can't be an anaphor bec. it is a functor +	-	+	+
5.		-	-	+	-
6.		-	S is neither dir. nor indir. about A +	+	+
7.		-	S is not about B +	+	-

no.		conceptual exclusion	exclusion by ABC	exclusion by AC	exclusion by SAC
8.		B can't be an anaphor bec. it is a functor +	-	+	+
9.		-	-	-	+
10.		-	S is neither dir. nor indir. about A +	-	+
11.		-	S is neither dir. nor indir. about B +	-	+
12.		-	-	-	+

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