

## ON THE INTERPRETATION OF STRESSED PRONOUNS<sup>1</sup>

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### Abstract

In this paper I will argue that meaning effects of stress on pronouns are general interpretive effects of constituent focus. I propose two constraints, Contrastive Stress and Continuing Topic, to deal with the interpretation of stressed pronouns in English. These two constraints and their interaction also account for some well-known data that are usually analysed via the Complementary Preference Hypothesis.

### 1. STRESS ON ANAPHORIC PRONOUNS

In the 1974 movie *The conversation* the utterance *He'd kill us if he got the chance* plays a major role.<sup>2</sup> The leading actor Gene Hackman fears for the killing of the 'us' after having tape-recorded their conversation for his client, who happens to be the 'he'. In the end, however, the couple has killed Hackman's client and not the other way around. After this surprising outcome, we hear the central utterance once more, but then we suddenly hear *He'll kill US if he got the chance*, with stress on *us*. Did we previously misunderstood the utterance or didn't hear well? No, our interpretation of the utterance is deliberately manipulated by the makers of the movie. The last time the recorded utterance is played, it is pronounced differently. This obviously changes the whole plot. Only at that point in the movie, we understand part of the central utterance as containing the horrible message: *we'll kill HIM*. How come?

All languages in the world appear to have personal pronouns, but they come in different forms, for instance full versus reduced ones or free versus bound ones. In languages that have both reduced and non-reduced pronouns, the reduced ones are specialized for anaphoricity, the non-reduced ones have focus functions (cf. Bresnan 2001). In languages that do not have different types of pronouns, the interaction with prosody gives the same result: unstressed pronouns need less effort; hence they are specialized for anaphoricity, while the stressed ones have focus functions. However, stress is used for different reasons in language (new information, contrast, shift in reference) and it is not always clear what principles guide a hearer's interpretation of a stressed or unstressed pronoun in a certain context. What are the different types of constraints that play a part in (un) stressed pronoun resolution and how do these interact? In this article the interpretation of stressed pronouns in discourse will be analysed in an optimality theoretic fashion.

Pronouns are usually studied in their anaphoric uses, although it is well known that they can be used deictically as well. For example, Bosch (1983) gives the following question-answer pair:

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<sup>2</sup> Thanks to Ellen Prince for drawing my attention to the role of (un)stressed pronouns in this movie. As she told me, she was so confused when she had first seen (or, rather, heard) this movie in the cinema, that she went back the other night, to watch it again and find out about the trick with the (un)stressed pronouns.

- (1) Did anybody leave that lecture yesterday?  
 (2) HE left.

As Bosch notes, in reply to the question in (1) there would be nobody in the focus of attention who *he* could link up to. Instead, *he* would have to bring somebody into focus that has not been in focus already. In such a case, *he* is accented, indicated by the capitals in (2). Bosch (1983) adds “in order to bring into focus someone who has not already been the focus of attention, *he*, in the deictic use, would most naturally be accompanied by a pointing gesture” (Bosch, p.58). In written texts, this pointing is sometimes described, as in the following examples (boldface is mine; pronouns that were put in italics by the author to indicate that they are stressed, are replaced by pronouns in capitals):

- (3) In their fort on the Lynx Hills the three Lynkestids, the sons of Aioropos, stood on their brown stone ramparts. It was an open place, safe from eavesdroppers. **They had left their guest downstairs**, having heard what he had to say, but given no answer yet. Around them stretched a reat sky of white towering clouds, fringed with mountains. It was late spring; on the bare peaks above the forests, only the deepest gullies showed veins of snow.  
 ‘Say what you like, both of you,’ said the eldest, Alexandros, ‘but I don’t trust it. What if this comes from the old fox himself, to test us? Or to trap us, have you thought of that?’  
 ‘Why should he?’ asked the second brother, Heromenes. ‘And why now?’  
 ‘Where are your wits? He is taking his army into Asia, and you ask why now.’  
 ‘Well,’ said the youngest, Arrabaios, ‘that’s enough for him surely, without stirring up the west? No if it had been that, it would have come two years ago, when he was planning to march south.’  
 ‘As HE says’ - **Heromenes jerked his head towards the stairway** - ‘now’s the time. Once Philip’s set out, he will have his hostage for us.’ He looked at Alexandros, whose feudal duty it was to lead their tribal levies in the King’s war. He stared back resentfully; already before this, he had been thinking that once his back was turned, the others would ride out on some mad foray that would cost him his head.<sup>3</sup>

[HE = the guest downstairs]

- (4) ‘This lad’s only nineteen,’ said Heromenes. ‘If Philip dies now, with no other son besides the lackwit, then YOU’ - **he stabbed his finger at Alexandros** - ‘are next in line.’

[YOU = Alexandros]

In most cases, however, pronouns are anaphoric. Anaphoric pronouns refer to individuals already introduced and salient in the discourse. There is an antecedent in the linguistic context to which the pronoun is anaphorically linked. As such, anaphoric pronouns are often continuing topics or at least, they are part of the background and not in focus. Because of this, anaphoric pronouns are usually de-accented, yet this is not necessarily the case. Anaphoric pronouns may be stressed as well, in which case the accent does not indicate deixis, nor the introduction of a novel referent in the discourse, but rather it signals *contrast* in the discourse. Consider the following examples of dialogues from Vallduví (1990) (stress indicated by capitals again):

<sup>3</sup> The examples in (3) and (4) are taken from the novel *Fire from Heaven* by Mary Renault.

- (5) S1: Good morning. I am here to see Mrs. Bush again.  
 S2: Sure, Mr. Smith. Let's see... One of her assistants will be with you in a second.  
 S1: Could I see *HER* today? I'm always talking to her assistants.
- (6) [At a grocery's cash register]  
 S1: It's \$1.20... o.k... Here's your change and here's your broccoli.  
 S2: Thank you.  
 S1: Thank *YOU*.

In the dialogue in (5), the stressed pronoun *her* is anaphoric as it refers back to Mrs. Bush. Constituent (or narrow) focus evokes contrast within a contextually salient set of alternatives (Rooth 1992). A rhetorical relation of contrast is established between two similar but in at least one respect crucially different events (Mann & Thompson 1988, Asher 1994). In the dialogue in (5) the relevant contrast is between the event of seeing one of Mrs. Bush's assistants versus the event of seeing Mrs. Bush herself. That is, in (5) the conversational implicature evoked by the accent on *her* is that the first speaker *does not* want to see one of Mrs. Bush's assistants (cf. Rooth 1992). Similarly, in (6), the accent on *you* in *thank you* establishes a relation of contrast between the event when speaker 1 thanks speaker 2 and the one when speaker 2 thanks speaker 1. That is, the conversational implicature is understood as: *Don't thank me*.

Consider as a further illustration of the contrast evoking function of stress the following paradigm:

- (7) a. *HE* kissed me.  
 b. He kissed *ME*.  
 c. *HE* kissed *ME*.

Without further context, the pronoun *he* in (7a) can be interpreted either deictically or anaphorically. When it's an anaphoric pronoun, the stress evokes a contrastive interpretation that may be paraphrased as *HE, not somebody else, kissed me*. Similarly, (7b) is paraphrased as *He kissed ME, not somebody else*. Now, what happens in (7c)? I claim that the relation of contrast evoked by the two stressed pronouns in (7c) – in the absence of further context – is interpreted as the contrast between two similar yet crucially different situations, namely one when he kissed me and the other when I kissed him. The implicature of *HE kissed ME* can thus be formulated as *And not the other way around*.<sup>4</sup>

## 2. KAMEYAMA'S COMPLEMENTARY PREFERENCE HYPOTHESIS

In this article I will argue against Kameyama (1999) who claims to have a unified account of interpretation preferences of stressed and unstressed pronouns in discourse. Kameyama's central intuition is expressed as the "Complementary Preference Hypothesis" taking the interpretation preference of the unstressed pronoun as the base from which to predict the interpretation preference of the stressed pronoun in the same discourse position.

<sup>4</sup> I do not want to exclude the possibility that in the *presence* of further context (it has to be quite a rich context, then) it is possible to establish contrast between two other situations, for example *HE kissed ME* versus *SHE kissed YOU*.

- (8) *Complementary Preference Hypothesis (CPH)*: A focused pronoun takes the complementary preference of the unstressed counterpart.  
(Kameyama 1999, p.315)

So, Kameyama claims that the preferred value of a stressed anaphoric pronoun in discourse is predictable from the preferred value of its unstressed counterpart, and that they draw their values from the same ‘currently salient’ subset of the domain. The problem of choosing among alternative values for pronouns has been investigated in the framework of centering theory (Grosz *et al.* 1995). Unstressed pronouns, in particular, are primarily used to indicate the *backward-looking center*, or as I will call it in this article, the *continuing topic*. In Kameyama’s approach, an unstressed pronoun normally realizes a ‘maximally salient entity’ of an appropriate number-person type. This for example accounts for the preference for a pronoun to corefer with the matrix subject in the previous utterance as in the following example, discussed by Kameyama (1999).

- (9) John hit Bill. Mary told him to go home.  
[him = John]

In (10) however, world knowledge about the relation *hit* (namely, that when *x* hits *y*, *y* is normally hurt) overrules the fact that John is more salient than Bill, which results in Bill preferred over John for the unstressed counterpart of *he*.<sup>5</sup> As a consequence, the complementary preference hypothesis makes John preferred over Bill for the stressed pronoun in (11).

- (10) John hit Bill. Then he was injured.  
[he = Bill]

- (11) John hit Bill. Then HE was injured.  
[HE = John]

Thus, Kameyama’s Complementary Preference Hypothesis correctly derives the right interpretation for the stressed pronoun in (11).

Kameyama furthermore discusses the following two famous sequences (cf. Lakoff 1971):

- (12) Paul called Jim a Republican. Then he insulted him.  
[Paul insulted Jim.]

- (13) Paul called Jim a Republican. Then HE insulted HIM.  
[Jim insulted Paul.]

On the basis of these examples, Kameyama claims there to be a systematic relation between the stressed and unstressed counterparts, which is of a complementary preference within a suitable subset of the domain. The assumption is that stressed and unstressed counterparts choose their values from the same salient subset of the domain of individuals.

- (14) Jack and Mary are good friends. {He / HE} is from Louisiana.  
[He / HE = Jack]

<sup>5</sup> A reviewer pointed out that for him/her, the preference in (10) is not Bill but John, and the reason would be the presence of *then*. Without *then*, it would be Bill, as claimed by Kameyama. This might well be true, but for the sake of a proper discussion, I will stick to Kameyama’s (1999) literal examples and not modify them.

In other words, in (14) the Complementary Preference Hypothesis cannot be applied, which would make it unclear why stress would be used. Kameyama (1999) argues that when the salient subset is a singleton, as in (14), the focus constraint for the stressed pronoun is satisfied by accommodation. For (14) this means that a contrasting presupposition *Mary is not from Louisiana* is accommodated.

In the following, I will argue against Kameyama's analysis of the use of stressed pronouns in (11), (13), and (14). On the basis of several counterarguments, I will reject the Complementary Preference Hypothesis.

### 3. CONTRAST

I would like to claim that the preferred interpretation of all the stressed pronouns above, is in fact the *contrastive* reading. In (11), repeated below as (15), this makes sense, precisely in view of our world knowledge about *hit*.

- (15) John hit Bill. Then HE was injured.  
[HE = John]

The contrast evoked by the stressed pronoun is between the unexpected situation when John is injured as the result of his hitting somebody else and the 'normal' situation when Bill is injured as a result of being hit. Thus, we get the interpretation *Then JOHN was injured* with the implicature *and not Bill (contrary to what you might expect)*. It is not a coincidence, that stress is used in a context where a relation of contrast is easily evoked by the sequence of predicates that is used: *hit –being injured*. Additional evidence for the natural occurrence of stress in the example in (15) is that it is maintained if we replace the pronoun by *John*: *Then JOHN was injured*.

Beaver (to appear) uses a different example to illustrate the Complementary Preference Hypothesis, where in my opinion the judgements and the interpretation of stress is far less clear than in Kameyama's example (15). The fragment discussed by Beaver is given in (16):

- (16) Fred was eating. He saw Jim. HE winked.

According to Beaver, the stressed pronoun *HE* is interpreted as *Jim*, in accordance with Kameyama's Complementary Preference Hypothesis. However, I have some problems with the interpretation of the stressed pronoun in (16). I guess I would like to claim that the pronoun is still ambiguous as long as the stress is not naturally interpreted as signalling contrast between two events, simply because in our world knowledge there is no clear expectation with respect to the connection between either *to see* or *to be seen* and *to wink*. So, the implicature evoked by the stress (*Somebody else did not wink*) is not by itself interpretable without further context, which makes the sequence in (16) harder to interpret than Kameyama's (15). This intuition is supported by the observation, that stress is maintained when we replace the pronoun by a proper name in (15), but not in (16). That is, there is no tendency at all to stress the second occurrence of Jim in *Fred was eating. He saw Jim. Jim winked*. In fact, stressing *Jim* here (*Fred was eating. He saw Jim. JIM winked*) sounds odd, just as *HE winked* sounds odd in this context, in my view.

For Kameyama, the preference order among alternative values for the stressed pronoun in (15) (John, Bill) is the complement of the preference order for its unstressed counterpart (Bill, John). However, in (17) below, *John* and *Mary* cannot be alternative values for the same

pronoun. Yet, I would like to claim that in (17) we get the same type of reading for the stressed pronoun. That is, the stressed pronoun again evokes a rhetorical relation of contrast between two similar yet crucially different situations. Clearly, the Complementary Preference Hypothesis cannot account for that effect, as Mary does not provide an alternative value for *HE*.

(17) John hit Mary. Then *HE* was injured.  
[*HE* = John]

A similar observation has been made by Prince (1981) with respect to the example in (13), repeated below as (18).

(18) Paul called Jim a Republican. Then *HE* insulted *HIM*.  
[Jim insulted Paul.]

In (19) we get the same stress pattern as in (18), despite the fact that the two pronouns do not have the same range of possible values (cf. Prince 1981):

(19) Paul called Jane a Republican. Then *SHE* insulted *HIM*.

The stress on the pronouns in (18) as well as (19) evokes contrast, rather than a shift in preferred reference. That is, as was pointed out with respect to (7c) above, when the two pronominal arguments are stressed, the situation described by the argument structure is contrasted with the situation described by the reversed argument order in the preceding clause. Again (like in (15)), when we replace the pronouns by proper names, the stress is preferably maintained: *Paul called Jim a Republican. Then JIM insulted PAUL*. Hence, we get the implicature *And not the other way around* both in (18) and in (19). That explains that *to call someone a Republican* is interpreted as an instantiation of insult in (18) and (19), but not in (12) above with the unstressed counterparts of the two pronouns. This is further illustrated by using either two identical predicates in (20) or two different predicates in (21). In (21), as in (22), the use of stress is not necessary, whereas in (20) it is.

- (20) Paul insulted Jane. Then *SHE* insulted *HIM*.
- (21) Paul called Jane a Republican. Then she *HIT* him.<sup>6</sup>
- (22) When she threatened him with her womanhood, he hated her.<sup>7</sup>

Because there is no contrastive relation between the situation described by the *when*-clause and the situation described by the main clause, the reversed order of the pronouns in the second clause does not have to be marked by stress (*she-him* versus *he-her*) in (21) and (22). The contrast evoking function of stress is also obvious in the following examples from Postal (1972) where in each case, only one value for the pronoun is available, and the stress merely signals contrast between the situation described in the sentence and the situation described by the conversational implicature. Without further context, we come up with an implicature like *somebody else is a dope* in (23). In (24)-(27) the contrasted situations are not just implicated, but are part of the meaning via the quantificational (focus association) elements such as *only*

<sup>6</sup> A reviewer claimed that there has to be a stress on *she* as well: *Paul called Jane a Republican. Then SHE HIT him*. Interestingly, the reviewer pointed out that the additional stress is not necessary if the second clause is subordinated: *Paul insulted Jane, whereupon she HIT him*.

<sup>7</sup> From *Fire from Heaven* by Mary Renault.

and *no other than*. So, we get *the others in our class don't have telepathic powers, others didn't agree to defend that theory, all the others agreed to forget that, and other people don't put ketchup on their cornflakes*, respectively.

- (23) Melvin, and *HE* is no dope, thinks that the proof is correct.
- (24) Melvin, and only *HE* of those in our class, has revealed telepathic powers.
- (25) Joan, but no other than *SHE*, has agreed to defend that theory.
- (26) Except for Bob, and I am not even sure of *HIM*, we all agreed to forget that.
- (27) Tony and *HE* alone, puts ketchup on his cornflakes.

At this point, reconsider Kameyama's example (14), repeated as (28) below:

- (28) Jack and Mary are good friends. {He / HE} is from Louisiana.  
[He / HE = Jack]

In this example again, the stress signals a contrast between two situations. When the pronoun *he* is stressed, the sentence in (28) gives rise to the conversational implicature that Mary is *not* from Louisiana. In the following example from Bosch (1983), the two situations described by the coordinated main clauses are similar in that they are both anaphoric to the rhetorical antecedent event described by the *when*-clause (cf. De Hoop and De Swart 2000); the contrast is between the two (shifted) topics involved in the anaphoric events, the male and the female. This contrast is marked by the stressed pronouns:

- (29) When the Smiths arrived, HE waited in the car and SHE rang the bell.

#### 4. FIRE FROM HEAVEN

So far, I have pointed out that in all those cases where no alternative values for stressed pronouns are available, the Complementary Preference Hypothesis cannot be applied. Instead, the stress evokes a rhetorical contrast between situations that are around in the discourse or implied by the content of the utterance. With respect to the examples of Kameyama, where alternative values are in fact available, I claimed that the contrastive reading is maintained. But of course, from this I cannot conclude that the Complementary Preference Hypothesis should be rejected. It could well be that both the Complementary Preference Hypothesis and a contrast evoking condition constrain the interpretation of stressed pronouns in discourse. In order to reject the Complementary Preference Hypothesis, we should look for examples where the Complementary Preference Hypothesis *can* be applied but does not give the right results (in the sense that the predicted value for a stressed pronoun does not correspond with the actual interpretation), or ideally, where we observe a clear conflict between a reading predicted by the Complementary Preference Hypothesis and one predicted by a condition dealing with the rhetorical relation of contrast. In this section I will argue that such examples indeed exist and that the conflict is resolved in favour of the contrastive reading.

In the novel *Fire from heaven* by Mary Renault I found 50 examples of stressed pronouns, indicated by the author by means of italics (replaced by capitals by me). For the vast majority of these examples, it can be argued that the stress signals contrastive focus. On the other hand, none of these examples can be explained by the Complementary Preference Hypothesis alone. The following example illustrates once more the event in which the Complementary

Preference Hypothesis cannot account for the stress as there is no alternative value for the second person pronoun:

- (30) 'Well, it teaches you to bear your wounds when you go to war.'  
 'War? But you're only six.'  
 'Of course not, I'm eight next Lion Month. You can see that.'  
 'So am I. But YOU don't look it, you look six.'  
 (YOU = the addressee)

In (30) the stress signals a contrast between the situations that the addressee doesn't look eight and the speaker himself who does look eight.

Some other examples where the Complementary Preference Hypothesis cannot apply are (31)-(33) with a stressed third person pronoun:

- (31) 'Of course,' he said. 'I shall kill Attalos as soon as I can do it. It will be best in Asia.' Hephaestion nodded; he himself, at nineteen, had long lost count of men he had already killed. 'Yes, he's your mortal enemy; you'll have to get rid of HIM. The girl's nothing then, the King will find another as soon as he's on campaign.'  
 (HIM = Attalos)
- (32) His mother had risen on one elbow, with the clothes pulled up to her chin. 'No, Philip. Not tonight. It is not the time.' The King took a stride towards the bed. 'Not the time?' he said loudly. He was still panting from the stairs on a full stomach. 'You said that half a month ago. Do you think I can't count, you Molossian bitch?' The child felt his mother's hand, which had been curved around his body, clench into a fist. When she spoke again it was in her fighting voice. 'Count, you wineskin?' You're not fit to know summer from winter. Go to your minion. Any day of the month is the same to HIM.'  
 (HIM = your minion)
- (33) 'I left Oxhead in the road outside. Will you see him safe for me? Take a guard or four.'  
 'Yes, Alexander.' He went off in a blaze of gratitude.  
 There was a felt silence; Antipatros was looking oddly under his brows. 'Alexander. The Queen your mother is in the theatre. Had SHE not better have a guard?'  
 (SHE = the Queen your mother)

In the dialogue in (31) there is only one male individual in the third person figuring in the conversation, namely Attalos. Yet, he is referred to by a stressed pronoun. Here, the contrast evoked by the stressed pronoun is between the situation that the addressee has to get rid of Attalos and the situation also available in the discourse that he has to get rid of the girl. That is, the conversational implicature that the stressed pronoun gives rise to is that the addressee does *not* have to get rid of the girl. In (32) the contrast is between two situations, both accessible in the discourse, the situation of the mother to whom the days of the month are *not* the same and the situation of the minion to whom any day of the month is the same. In (33), the situations between which a contrast is established are again both available in the discourse, namely the situation when Oxhead (a horse) gets a guard versus the situation when the queen gets a guard.

In (31)-(33) above again the Complementary Preference Hypothesis cannot be applied as there are no alternative referents available for the unstressed counterparts of the pronoun. In



the following text fragment, two instances of stressed pronouns provide direct evidence against the Complementary Preference Hypothesis.

- (34) ‘So, think which of them can’t afford to wait. Alexander can. Philip’s seed tends to girls, as everyone knows. Even if Eurydike throws a boy, let the King say what he likes while he lives, but if he dies, the Macedonians won’t accept an heir under fighting age; HE should know that. But Olympias, now, that’s another matter. SHE can’t wait.’

[HE = Philip/the King; SHE = Olympias]

In (34) there are two referents available for the masculine pronoun (namely, Alexander and Philip) and two for the feminine pronoun (*viz.*, Eurydike and Olympias). As far as I can see, the Complementary Preference Hypothesis would predict *HE* to refer to Alexander and *SHE* to Eurydike. Indeed, both Philip and Olympias are straightforward continuing topics at that point in the text. As a consequence, they would count as the preferred values for the unstressed pronouns *he* and *she*. This would automatically leave Alexander and Eurydike as the preferred complementary values for the stressed pronouns. Neither prediction is borne out, however. In other words, the stressed pronouns do not indicate a complementary preference in reference compared to their unstressed counterparts. Clearly, the Complementary Preference Hypothesis is overruled twice. At the same time, the hypothesis that stressed pronouns signal a rhetorical relation of contrast, can still be maintained. Although this is not immediately clear from the direct context, it is known to the reader of the novel that Philip himself became a king when the Macedonians wouldn’t accept an heir under age. So, of all people, HE should know. The contrast is between him knowing and other people maybe not knowing. The stress on *SHE* signals the contrast between Olympias who cannot wait and Alexander who can (the latter situation is available in the preceding discourse). Note, that we are dealing with a male and a female referent here, whose circumstances are contrasted (one can wait, the other can’t), but who are certainly not in the same set of possible values for the pronoun *SHE*. The only other possible value for the pronoun *she* would be Eurydike, but the stress certainly is not meant to shift the preferred reference from Olympias to Eurydike. Thus, the fragment in (34) provides two clear pieces of evidence against the Complementary Preference Hypothesis. I conclude therefore that the Complementary Preference Hypothesis is neither sufficient nor necessary for a proper analysis of the interpretation of stressed pronouns in discourse.

Additional support for the latter claim is obtained from the work of Venditti *et al.* (2002) who report the results from an experimental study of on-line interpretation of stressed subject pronouns in English. They model the interpretation of stressed pronouns as a side-effect of establishing a coherent structure for discourse, basically following Kehler (2002). Venditti *et al.* find that accent alone is not sufficient to switch reference to a less salient entity. Rather, the type of inferred coherence relation and the ability of the listener to resolve the presupposition of contrast determines interpretation.

## 5. AN OPTIMALITY THEORETIC ANALYSIS

A theory that tries to derive the interpretation of anaphoric expressions from constraint interaction is Optimality Theoretic Semantics (cf. Hendriks and De Hoop 1997, 2001). In this theory each utterance is associated with an in principle infinite number of interpretations. Hearers arrive – as fast as they do – at one or two optimal interpretations of the utterance by evaluating the candidate interpretations with respect to a set of (conflicting) constraints. The interpretation that arises for an utterance within a certain context maximizes the degree of

constraint satisfaction and is as a consequence the best alternative (hence, optimal interpretation) among the set of possible interpretations.

The optimal interpretations that are assigned to stressed pronouns in discourse can be analysed in terms of two ranked constraints. The constraints are formulated below.

- (35) *Continuing Topic (CT)*: A pronoun is interpreted as a continuing topic.
- (36) *Contrastive Stress (CS)*: Stress on a pronoun indicates a rhetorical relation of Contrast.

*Continuing Topic* can be seen as the interpretive counterpart of *PRO-TOP* that states that the topic is pronominalized (Beaver, to appear). *Contrastive Stress* is also an interpretive constraint in the sense that the direction of optimization goes from form, a stressed pronoun, to interpretation, here Contrast. At least this version of *Contrastive Stress* does not tell us anything about the other direction of optimization. That is, in this paper I am not concerned with the question when a speaker should use a certain form (for example, a stressed pronoun) to mark a certain interpretation (e.g., Contrast). The rhetorical relation *Contrast* is defined in Mann and Thompson (1988) as a multi-nuclear rhetorical relation with no more than two nuclei such that the situations presented in these two nuclei are (a) comprehended as the same in many respects (b) comprehended as differing in a few respects and (c) compared with respect to one or more of these differences. According to Mann and Thompson, the effect of Contrast is that the reader recognizes the comparability and the difference(s) yielded by the comparison being made. Asher (1999) investigates the interaction between discourse structure and stress. He discusses some examples that suggest that stressing has the same effect as using a contrastive particle (such as *but*), introducing the rhetorical relation Contrast. Although I formulated *Contrastive Stress* only with respect to pronouns, it will be clear that it should be generalized to narrow or constituent stress in general (cf. Rooth 1992). Consider the following example:

- (37) Setting: Mats, Steve and Paul took a calculus test. After the grading, George asks Mats how it went.
- Q: How did it go?
- A1: Well, I passed
- A2: Well, I [PASSED]<sub>F</sub>
- A3: Well, [I]<sub>F</sub> passed

As Rooth (1992) points out, in A1, uttered with a default intonation contour, and no particular prominence on any constituent, Mats's answer provides a neutral description of the situation, with no specific meaning effects related to focus. In A3, as we know by now, the stress on the pronoun indicates a contrast between situations. Hence, we obtain the conversational implicature that the others – Steve and Paul – did not pass. But this effect is not restricted to stressed pronouns. In A2, by stressing *passed*, Mats suggests that he did no better than passing. That is, there is a conversational implicature that Mats did not ace. In this article, I only deal with the contrastive effect of stress on pronouns. I hope it goes without saying that when a stressed pronoun establishes a rhetorical relation of Contrast, the two situations differ exactly with respect to the element that gets contrastively focused, hence the referent the stressed pronoun refers to. Therefore, in A3 above, the situation in which I passed is contrasted with the situation in which the others passed (and not with the situation in which I aced).

Let us now see how these two constraints *Continuing Topic* and *Contrastive Stress* account for the right interpretations of stressed pronouns in case of the fragment in (34) above, repeated below as (38).

- (38) ‘So, think which of them can’t afford to wait. Alexander can. Philip’s seed tends to girls, as everyone knows. Even if Eurydike throws a boy, let the King say what he likes while he lives, but if he dies, the Macedonians won’t accept an heir under fighting age; HE should know that. But Olympias, now, that’s another matter. SHE can’t wait.’

[HE = Philip/the King; SHE = Olympias]

The optimal interpretations for the stressed pronouns in (38) follow when both constraints *CT* and *CS* are satisfied, as shown in the tableau in (39).

- (39) Constraint tableau for the interpretations of stressed pronouns



Input	Output	Contrastive Stress	Continuing Topic
HE in (37) ➡	HE=Philip		
	HE=Alexander		*!
SHE in (37) ➡	SHE=Olympias		
	SHE=Eurydike		*!

The optimal interpretations are the ones we obtain when both *Contrastive Stress* and *Continuing Topic* are satisfied. In these optimal interpretations, we establish a rhetorical relation of Contrast induced by the stressed pronouns and we interpret the pronouns as continuing topics. Note by the way that in order to satisfy the Complementary Preference Hypothesis and shift reference, we would have to violate *Continuing Topic*. That means that either the Complementary Preference Hypothesis in its present form does not exist at all, or if it does exist, it must be a weak constraint, weaker at least than *Continuing Topic*. For the moment I will proceed from the hypothesis that we can do without the Complementary Preference Hypothesis altogether. This suggests that the combination of *Contrastive Stress* and *Continuing Topic* appropriately constrains the interpretation of the stressed pronouns in discourse. Note however that the result with respect to the stressed pronouns in (37) does not give us any clue as to the ranking of the two constraints. The order in the tableau in (39) above, is not meant to indicate a ranking between them. Obviously, cases in which the optimal candidate does not violate any constraints at all do not allow us to determine the ranking within a given set of constraints. In general, we need to look at cases that involve a conflict between constraints in order to determine the ranking.

A case in point may be examples such as the (13)=(18) and (20) above. In these cases we may argue that *Continuing Topic* is violated.<sup>8</sup> Indeed, the violation seems to be triggered by the necessity of establishing a rhetorical relation of contrast between two similar situations, as required by the stressed constituents. That means that those cases provide evidence for the ranking *Contrastive Stress* >> *Continuing Topic* as illustrated by the tableau.

<sup>8</sup> Thanks to a reviewer for pointing out to me that because each pronoun is subject to *Continuing Topic*, the winning candidate violates this constraint twice while the loser only violates it once. Because there is a strict domination hierarchy such that *Continuing Topic* is weaker than *Contrastive Stress*, two violations of *Continuing Topic* is still more harmonic than one violation of *Contrastive Stress*.

## (40) Constraint tableau for the interpretations of stressed pronouns

Input	Output	Contrastive Stress	Continuing Topic
(18) Paul called J i m a Republican.  Then HE insulted HIM.	HE=Paul; HIM=Jim	*!	*
	HE=Jim; HIM=Paul		**
(20) Paul  insulted Jane. Then SHE insulted HIM.	SHE=Jane; HIM=Paul		**

In fact, we might say that the optimal interpretation of the stressed pronouns in (18) satisfies the Complementary Preference Hypothesis. This is possible because in this example satisfaction of the Complementary Preference Hypothesis corresponds with satisfaction of *Contrastive Stress*, while *Continuing Topic* (a constraint that would be stronger than the Complementary Preference Hypothesis, but weaker than *Contrastive Stress*) is violated by the winning interpretation. Apparently, in a small subset of examples *Contrastive Stress* coincides with complementary preference. However, we do not actually need the Complementary Preference Hypothesis in order to account for the right interpretations of the stressed pronouns in (18). The combination of *Contrastive Stress* and *Continuing Topic* suffices. Moreover, the Complementary Preference Hypothesis would not contribute to computing the right interpretations of the stressed pronouns in (20) as in that sentence the Complementary Preference Hypothesis cannot be applied, although we do get the same type of (contrastive) interpretation in both (18) and (20), a fact that was discussed above.

Let's have one more look at the tableau in (40). If Paul called Jim a Republican and then Paul insulted Jim, the stressed pronouns would not be licensed by *Contrastive Stress*, because there would be no two situations available in the discourse between which a rhetorical relation of contrast could be established. However, if the stressed pronouns refer to Jim and Paul, in that order, *Contrastive Stress* is satisfied. In order to get a contrastive reading between the two situations, they must be sufficiently similar, too. That is why in the optimal interpretation to call somebody a Republican must be interpreted as an instantiation of to insult somebody. The contrast is between the two situations: first Paul insulted Jim and then the other way around. The same holds for the optimal interpretation of (20). This is in general the implicature that we get when two pronominal arguments of a predicate are stressed in the absence of further context (as was already observed for the example in (7c) above).

The example in (41), taken from a Dutch newspaper fragment, may serve as a final illustration of this point (again I replaced italics that indicate stress by capitals):

- (41) SYDNEY – In de trein die van het Olympic Park terug naar de stad leidt zingen Nederlandse supporters donderdagavond: 'Inge is okay, olé, olé. Inge is okay, olé, olé.' Dat vindt prins Willem-Alexander ook die een uurtje eerder in het Aquatic Centre Inge de Bruijn kussend feliciteert met haar tweede olympische titel. De Bruijn, tijdens de persconferentie na afloop van haar winnende 100 vrij, over dat ene moment waarop zijn in Sydney nu eens níet het initiatief had: 'Nee, nee, HIJ kuste MIJ.'
- (de Volkskrant, 22-09-2000)

SYDNEY – In the train returning to town from the Olympic Park, Dutch fans sang “Inge is OK, ole ole ole, Inge is OK, ole ole ole...” on Thursday night. Prince Willem Alexander, who congratulated Inge de Bruijn on her second olympic title with a kiss one hour earlier in the Aquatic Centre, thinks so too.

During the press conference following her victory in the 100 meter freestyle, De Bruijn spoke about the one moment in Sydney in which she did NOT take the initiative: “No, no, HE kissed ME.”

Once more, we get the right interpretation via *Contrastive Stress*. The interpretation is that Willem-Alexander kissed Inge de Bruijn and the implicature says: *And not the other way around*.

## 6. CONCLUSION

In general, the existence of (morphological) alternatives raises strong interpretive blocking effects (Blutner, 2000). When there are two forms, it is economical to use them for different interpretations. Thus, when there are two lexical forms for the third person singular, one might be optimally interpreted as a continuing topic, the other one as a deictic topic, a shifted topic or a contrastive one. The same would hold for two pronominal forms distinguished by means of stress. In this paper I have argued that in English stress plays only a minor role in the actual process of pronoun resolution (i.e., disambiguation). Rather, meaning effects of stress on pronouns are general pragmatic effects of constituent stress or narrow focus. In particular, stressed pronouns indicate the presence of a rhetorical relation of contrast between two situations within the discourse. The optimal interpretations that are assigned to stressed pronouns in discourse can be analyzed in terms of the interaction of only two constraints and their ranking, such that *Contrastive Stress* >> *Continuing Topic*.

In conclusion, if the makers of *The conversation* would not have used a trick to mislead the audience, the final shots would have been rather predictable. That is, if the stress would not have been omitted in the first part of the movie, then everybody would have immediately understood the utterance *He'd kill US if he got the chance* to mean no less than *Let's kill HIM!*

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