

Focus, Uniqueness and Soft Presupposition Triggers

Andreas Walker

University of Konstanz

Abstract. Von Heusinger (2007) shows that the definite article’s uniqueness presupposition causes problems in a standard account of focus alternatives. He solves this problem by proposing a new lexical entry for the definite article, a solution adopted by Riester and Kamp (2010). This paper shows that the observed behavior is not limited to the definite article, making such a solution undesirable. Our argument is based on two observations: (1) The definite article is a soft presupposition trigger with respect to uniqueness and (2) soft presupposition triggers have a special behavior in focus alternatives.

1 The Problem

Von Heusinger (2007) observes that in a standard account of focus alternatives, the sentence in (1) receives the following analysis: the uttered sentence (excluding *only*) expresses the proposition in (2), and focus gives rise to the set of alternatives in (3).

- (1) John only talked to the GERman_F professor.
- (2) $\lambda w : \exists!x[\text{prof}(x, w) \wedge \text{german}(x, w)].\exists y[\text{P}(y, w) \wedge \text{G}(y, w) \wedge \text{T}(j, y, w)]$
- (3) $\{[\lambda w : \exists!x[\text{P}(x, w) \wedge \text{G}(x, w)].\exists y[\text{P}(y, w) \wedge \text{G}(y, w) \wedge \text{T}(j, y, w)]],$
 $[\lambda w : \exists!x[\text{P}(x, w) \wedge \text{F}(x, w)].\exists y[\text{P}(y, w) \wedge \text{F}(y, w) \wedge \text{T}(j, y, w)]],$
 $[\lambda w : \exists!x[\text{P}(x, w) \wedge \text{D}(x, w)].\exists y[\text{P}(y, w) \wedge \text{D}(y, w) \wedge \text{T}(j, y, w)]], \dots\}$

That is, the uttered sentence roughly conveys (blending together presuppositions and assertions for the sake of readability) that there is a unique German professor such that John talked to him, and the alternatives are the propositions that there are unique professors of other nationalities (French, Dutch, ...), such that John talked to them. While this analysis might yield the correct readings in some contexts, von Heusinger (2007) notes that this analysis becomes problematic in the scenario described in (4).

- (4) *Scenario:* At a party there are one German professor, one Dutch professor and two French professors.

The prediction would be that (1) suffers presupposition failure in (4), since there is no unique French professor. However, what we observe instead is that

1. the sentence is felicitous and true in (4) if John talked to the German professor but none of the other professors.
2. the sentence is felicitous and false in (4) if John talked to any other professor, whether they are unique (i.e. Dutch) or non-unique (i.e. French).

Von Heusinger (2007) suggests solving this problem by assuming a different lexical entry for the definite article in the alternative semantics, namely $\llbracket \text{the} \rrbracket^f = \cup$ (the generalized union). A computation in the alternative semantics of Rooth (1992) is given in (5). As the reader can see, the generalized union yields the set of all professors, which is passed up the tree in the alternative semantics computation without any uniqueness presupposition. The set of resulting propositional alternatives is then contextually restricted by Rooth's (1992) squiggle operator, yielding propositional alternatives concerning the contextually relevant professors, e.g. the ones at the party, regardless of their nationality or uniqueness. This way, the set of alternatives consists of all professors, rather than of all unique professors of a certain nationality. Von Heusinger's (2007) solution is adopted by Riester and Kamp (2010).

$$\begin{aligned}
 (5) \llbracket \text{GERman}_F \text{professor} \rrbracket^f &= \{ \lambda x. [Q(x) \wedge \text{PROF}(x)] \mid Q \in D_{\langle e, t \rangle} \} \\
 \llbracket \text{the} \rrbracket^f &= [\lambda P. \cup P]_{\langle \langle \langle e, t \rangle, t \rangle, \langle e, t \rangle \rangle} \\
 \llbracket \text{the GERman}_F \text{professor} \rrbracket^f &= \cup \{ \lambda x. [Q(x) \wedge \text{PROF}(x)] \mid Q \in D_{\langle e, t \rangle} \} \\
 &= \{ x \mid \exists Q [Q(x) \wedge \text{PROF}(x)] \} \\
 &= \{ x \mid \text{PROF}(x) \} \\
 \llbracket \text{John talked to the GERman}_F \text{professor} \rrbracket^f &= \{ \text{TALK}(j, x) \mid \text{PROF}(x) \}
 \end{aligned}$$

While this approach arrives at the correct reading, it misses an important generalization. The observed behavior is in fact not unique to the definite article, but can be shown to arise for the larger class of Soft Presupposition Triggers. In Sect. 2 we will discuss some of the data that has been presented on these Soft Presupposition Triggers in the literature, in order to provide the background for the observations presented in this paper. Two observations will be presented in Sect. 3: We will show that the definite article does in fact belong into the class of Soft Presupposition Triggers (Sect. 3.1), and that while Hard Presupposition Triggers must project their presuppositions in focus alternative sets, Soft Presupposition Triggers do not need to (Sect. 3.2). Further, we will point out that the non-projective behavior of Soft Presupposition Triggers in the alternative set does not amount to local accommodation, but to the elimination of the presupposed proposition as a whole. This is different from the behavior of Soft Presupposition Triggers in the environments investigated in the previous literature, where non-projection amounted to local accommodation (Sect. 3.3). Once the special behavior of Soft Presupposition Triggers is established, von Heusinger's (2007) example will be shown to be just one case of the general pattern (Sect. 3.4). Section 4 concludes the paper.

2 Background on Soft Presupposition Triggers

The literature on presupposition triggers distinguishes between Soft and Hard Presupposition Triggers. Soft Presupposition Triggers (SPT) and Hard Presupposition Triggers (HPT) show different behavior in a number of contexts, a phenomenon that has been described by Simons (2001) and Abusch (2002) amongst others. In these contexts, the presuppositions of SPTs do not need to project, while projection is obligatory for HPTs. We are going to examine two such environments, disjunction and ignorance of the speaker with respect to the presupposition.

The first context, involving disjunction, is given in the following examples by Abusch (2002). Consider first a simple example of presupposition with a Soft Presupposition Trigger such as (6).

- (6) John will continue missing meetings.

The presupposition that John has missed meetings before, triggered by *continue*, here projects to the whole sentence. However, in (7) the presuppositions of *continue* do not project to the whole sentence, but rather stay within the disjuncts, yielding a reading paraphrased in (8).

- (7) After the first meeting, John will either continue missing meetings
or continue attending meetings.
(8) "After the first meeting, John will either *have missed the first meeting and*
continue missing meetings or *have attended the first meeting and* continue
attending meetings."

The same projection behavior as in (6) can be shown for the HPT *too* in the simple case, where the presupposition that John missed the first meeting projects to the whole sentence.

- (9) John missed the second meeting too.

However, HPTs do not show the non-projection behavior observed for SPTs under disjunction. In (10), the conflicting presuppositions of *too* must project, rendering the sentence pragmatically odd.

- (10) # After the first meeting, John will either miss the second meeting too or
attend the second meeting too.

The second context, involving the speaker's explicit ignorance with respect to the presupposition, is given by Simons (2001). The presupposition of *stop* projects to the whole sentence as normal in (11), so that the sentence presupposes that John smoked before. The presupposition does not project in (12) where it instead becomes part of the question, as paraphrased in (13)

(11) Did John stop smoking?

(12) I see that you keep chewing on your pencil. Have you recently stopped smoking?

(13) "Have you *been a smoker and* recently stopped smoking?"

However, when a HPT is used, the same contrast as under disjunction arises. That is, the presupposition of *again* projects in the simple example (14) as well as in (15) where the speaker's ignorance is made explicit. Since the presupposition that Jane rented Manhattan before is incompatible with this context, (15) is rendered pragmatically odd.

(14) Jane is renting Manhattan again.

(15) # I have no idea whether Jane ever rented "Manhattan", but perhaps she's renting it again.

Based on these contexts, several presupposition triggers have been classified as either hard or soft:

1. Soft Presupposition Triggers: e.g. factive verbs, change of state verbs
2. Hard Presupposition Triggers: e.g. *again*, *even*, *too*, *also*, negative polarity *either*, *it*-cleft

Missing from this list is the definite article. Its status is disputed in the literature, with no clear classification arising. Abusch (2002) describes it as "unclear". Abbott (2006) argues for treating the definite article as a HPT based on examples like (16). Here, the presupposition that the book has an owner, triggered by *the* must project. Since the speaker's ignorance with respect to the presupposition is explicitly stated, the sentence is pragmatically odd.

(16) # Possibly no one owns this book, but if I find the owner I will return it.

However, these discussions are only concerned with the definite article's existential presupposition. The problematic presupposition in von Heusinger's (2007) puzzle is the uniqueness presupposition. The question arises whether the definite article is a soft or a hard presupposition trigger with respect to uniqueness.

3 Observations

The following sections present data on two observations: (a) The definite article is a SPT for uniqueness, and (b) SPTs show the same behavior as the definite article with respect to focus alternatives, but HPTs do not. Taken together, these two observations allow us to locate the original problem within a larger class of problems that need to be addressed together.

3.1 Observation A: The Definite Article is a Soft Presupposition Trigger for Uniqueness

In the contexts described by Simons (2001) and Abusch (2002), the definite article behaves like a SPT, i.e. its uniqueness presupposition does not need to project in these contexts. Similar to the behavior of *continue* in (7), the definite article's presupposition does not project under disjunction in (18), given the scenario in (17). Instead it is locally accommodated within the disjuncts.

- (17) *Scenario*: In a historical setting with a pope and a counterpope, a council is being held in order to settle the conflict by agreeing on one unique pope, but it is yet unclear whether this will succeed
 (18) After the council, either the pope will unite Rome, or the popes will tear it apart.

This gives rise to the reading paraphrased in (19), i.e. the uniqueness is not a presupposition of the sentence but is only locally assumed in the disjunction.

- (19) "After the council, either *there will be a unique pope and this pope will unite Rome* or *there will be more than one pope and these popes will tear it apart*."

In a scenario like (20) where we can assume the speaker's ignorance with respect to the presupposition, it is not projected either. Instead, it is locally accommodated, giving rise to the reading paraphrased in (22).

- (20) *Scenario*: Pina needs a linear equation A to have exactly one solution. I do not know how many solutions A has. When I meet Pina she seems happy.
 (21) Did you find the solution for A?
 (22) "Is there a *unique solution for A* and did you find it?"

Since the definite article behaves as a Soft Presupposition Trigger in these contexts, we can assume that it is in fact a SPT with respect to uniqueness.

3.2 Observation B: Soft Presupposition Triggers and Focus Alternatives

We will now explore the behavior of Soft and Hard Presupposition Triggers with respect to focus alternatives. As expected, both SPTs and HPTs have the potential to project in focus alternatives. (24) demonstrates this for the SPT *aware*.

- (23) *Scenario*: Three soccer players, A(lexandra), B(irgit) and C(elia), are pregnant. John believes that Birgit is pregnant.
 (24) It's a good thing John is only aware that BIRgit_F is pregnant.

Here, the presuppositions in the focus alternatives, i.e. that Alexandra is pregnant and that Celia is pregnant, do project as expected. A rough paraphrase (conflating assertions and presuppositions for the sake of readability) is given in (25).

- (25) "B is pregnant and John believes that B is pregnant, A is pregnant and John doesn't believe that A is pregnant, and C is pregnant and John doesn't believe that C is pregnant."

The same can be shown for the HPT *also* in (27). Note that the relevant reading is the one in which *only* goes together with *Birgit*, and *also* with *conjunctivitis*.

- (26) *Scenario*: John believes that all three players have a cold. On top, he thinks that Birgit has conjunctivitis.
 (27) John only thinks that BIRgit also has conjunctivitis.

The presupposition - i.e. that John thinks that the players have a condition other than conjunctivitis - projects, and we obtain the rough paraphrase given in (28).

- (28) "John thinks B has a condition other than conjunctivitis, and John thinks that B has conjunctivitis, and John thinks A has a condition other than conjunctivitis, and John doesn't think that A has conjunctivitis, and John thinks C has a condition other than conjunctivitis, and John doesn't think that C has conjunctivitis."

Interestingly, we note that a difference between the SPT and the HPT arises when the context does not support the presupposition. In the case of the SPT, the presupposition does not need to project, and the sentence is still acceptable.

- (29) *Scenario*: There are rumours that the three players will not be able to play in the semi-final due to a pregnancy. It is not known whether any of the three actually is pregnant.
 (30) The team's doctor is only aware that BIRgit_F is pregnant.

In (30) the sentence as a whole does not presuppose that Alexandra and Celia are pregnant. Instead we obtain the reading roughly paraphrased in (31)¹.

- (31) "B is pregnant and the doctor believes that B is pregnant, the doctor does not believe that A is pregnant, and the team's doctor does not believe that C is pregnant."

¹ Note that the presupposition is not locally accommodated here, which we will discuss in more detail in Sect. 3.3.

If we construct a similar example with the HPT *also*, we notice that the presupposition projection is obligatory here. We obtain the rough paraphrase in (34) which is at odds with the scenario in (32), rendering the sentence in (33) pragmatically odd.

- (32) *Scenario*: It has been established that only Birgit has the flu and the doctor knows that.
 (33) # The team's doctor only thinks that BIRgit_F also has conjunctivitis.
 (34) "The doctor thinks that B has a condition other than conjunctivitis and the doctor thinks that A has a condition other than conjunctivitis and the doctor does not think A has conjunctivitis, and the doctor thinks that C has a condition other than conjunctivitis and the doctor does not think that C has conjunctivitis."

In order to show that this observed difference is a general pattern for all SPTs and HPTs, let us briefly consider a different example that exhibits the same behavior, i.e. that the SPT does not need to project in whereas the HPT does. (35) provides a scenario in which the SPT *stop* in (36) does not project.

- (35) *Scenario*: The Lamb & Lion serves beer and wine, but the Rose & Crown only serves beer. New legislation makes it illegal to serve either beer or wine but pubs will be financially compensated for this, based on what kind of alcohol they served before.
 (36) The Lamb & Lion stopped serving wine and beer. They will get 540£. The Rose & Crown only stopped serving BEER_F. They will get 250£.

Here, the presupposition that the Rose & Crown served wine before does not appear in the alternative set.

In contrast, in the case of a HPT, the presupposition must project. This is shown in (39).

- (37) *Scenario*: Continuing the scenario in (35), the legislation is lifted.
 (38) The Lamb & Lion only serves BEER_F again.
 (39) # The Rose & Crown only serves BEER_F again.

In both (38) and (39) the presupposition of *again* projects. That is, (38) and (39) presuppose that the Rose & Crown and the Lamb & Lion respectively served both wine and beer before. This is the case for the Lamb & Lion, and thus (38) is acceptable in this scenario. But this presupposition is not satisfied for (39) in the present scenario, as the Rose & Crown served beer but not wine before. This renders sentence (39) unacceptable in this scenario.

3.3 Local Accommodation or Cancellation?

We have observed that both in the contexts presented by Simons (2001) and Abusch (2002) and within focus alternatives, SPTs do not need to project. However, there is a difference between the exact ways in which this lack of projection comes about. The cases discussed in the literature assume that the presupposition is locally accommodated, i.e. instead of projecting it becomes part of the assertion. This can be seen both in the original examples such as (7) and (12), and in the examples we provided for the definite article, such as (18) and (21). In the case of focus alternatives however, the presuppositions of the Soft Presupposition Triggers simply do not appear in the alternative set. No local accommodation can be observed here. The following examples rule out local accommodation as the source of SPTs behavior with respect to focus alternatives. Instead, the empirical result is that the presuppositions are simply eliminated from the alternative set.

- (40) *Scenario*: Only Birgit is pregnant. The pregnancy tests are faulty, leading the doctor to falsely believe that Alexandra and Celia are pregnant as well.
- (41) I think there is something wrong with the pregnancy tests. After using them, the doctor believed that three players are pregnant. But he got it right for only one of them: # The doctor is only aware that $BIRgit_F$ is pregnant.

If local accommodation of the presupposition within each focus alternative was an option, (41) would have (42) as one of its possible readings, thus making the sentence felicitous in scenario (40). Since the sentence is infelicitous, this reading is not available for the sentence.

- (42) "B is pregnant and the doctor believes that B is pregnant, and it is not the case that (*A is pregnant and the doctor believes that A is pregnant*), and it is not the case that (*C is pregnant and the doctor believes that C is pregnant*).

Instead of (42), the only reading available where presuppositions do not project is (43), where the presupposed proposition has been entirely eliminated from the focus alternatives.

- (43) "B is pregnant and the doctor believes that B is pregnant, and the doctor does not believe that A is pregnant, and the doctor does not believe that C is pregnant."

It follows that the paraphrase in (43) should indeed be formalized as the set of alternatives in (44).

- (44) $\{\lambda w : \overline{\text{PREGNANT}(a, w)}.\text{believe}(d, \text{PREGNANT}(a, w)),$
 $\lambda w : \overline{\text{PREGNANT}(b, w)}.\text{believe}(d, \text{PREGNANT}(b, w)),$
 $\lambda w : \overline{\text{PREGNANT}(c, w)}.\text{believe}(d, \text{PREGNANT}(c, w))\}$

This provides a challenge to current accounts for SPTs, such as Romoli (2011) and Abrusán (2011). Since the literature usually assumes the local accommodation behavior this new observed behavior may prove difficult to integrate with these approaches².

3.4 Observation A+B and the Original Problem

The observations made above now present us with a new perspective on the original problem presented in (1). The phenomenon there is not due to some peculiar property of the definite article's lexical entry in the alternative semantics, but rather due to its status as a SPT and the behavior of SPTs with respect to focus alternatives. The reading that we obtain for (45) (repeated from (1) above) is roughly paraphrased in (46).

- (45) John only talked to the GERman_F professor.
 (46) "There is a unique German professor and John spoke to the German professor, and John did not speak to a French professor and John did not speak to a Dutch professor."

As in the examples above, we obtain the correct formalization of this reading if we construct the alternative set as normal, but do not include the presuppositions in the alternatives.

- (47) $\{[\lambda w : \exists!x[\overline{P(x, w) \wedge G(x, w)}].\exists y[P(y, w) \wedge G(y, w) \wedge T(j, y, w)]],$
 $[\lambda w : \exists!x[\overline{P(x, w) \wedge F(x, w)}].\exists y[P(y, w) \wedge F(y, w) \wedge T(j, y, w)]],$
 $[\lambda w : \exists!x[\overline{P(x, w) \wedge D(x, w)}].\exists y[P(y, w) \wedge D(y, w) \wedge T(j, y, w)]], \dots\}$

We then arrive at the following truth conditions for (45):

- (48a) *Presupposition*: $\lambda w. \exists!x[P(x, w) \wedge G(x, w)] \wedge \exists x[P(x, w) \wedge G(x, w) \wedge T(j, x, w)]$
 (48b) *Assertion*: $[\lambda w. \neg[\exists y[P(y, w) \wedge F(y, w) \wedge T(j, y, w)]] \wedge$
 $\neg[\exists y[P(y, w) \wedge D(y, w) \wedge T(j, y, w)]]]$

Arriving at this reading by changing the lexical entry for the definite article overlooks the crucial fact that this behavior can be systematically observed for all Soft Presupposition Triggers when they appear together with focus alternatives.

² Note however that in some cases, e.g. (36), the local accommodation behavior seems to be available with focus alternatives. A possible explanation for this is that *stop P*, besides presupposing that *P* was true before, asserts that there was a change from *P* to $\neg P$. If so the correct reading for the pub examples is still obtained by completely eliminating the presuppositions from the alternative set.

4 Conclusions

Considering these observations, we arrive at the following conclusions:

1. The definite article is a Soft Presupposition Trigger for uniqueness.
2. Soft Presupposition Triggers and Hard Presupposition Triggers show different behavior not only in the contexts provided by Simons (2001) and Abusch (2002), but also within focus alternative sets: While Hard Triggers must obligatorily trigger their presuppositions, Soft Triggers do not need to.
3. There is no need for a special lexical entry for the definite article in alternative semantics. Instead, a more general account for the interaction between Soft Presupposition Triggers and focus alternatives is necessary.
4. Any account of Soft Presupposition Triggers must be able to explain
 - (a) the behavior of Soft Presupposition Triggers (now including the definite article) within the previously known contexts, where the non-projection corresponds with readings that resemble a form of local accommodation,
 - (b) the behavior of Soft Presupposition Triggers within focus alternatives, where non-projection seems to amount to complete disappearance of the presupposition.

Further research will be needed to show how these conclusions interact with current accounts for Soft Presupposition Triggers, and whether these can be modified to account for the new behavior observed as well as the new Soft Trigger. The answers found there should then provide us with an answer to von Heusinger's (2007) puzzle as well.

References

- Abbott, B.: Where Have Some of the Presuppositions Gone? In: Birner, B., Ward, G. (eds.) *Drawing the Boundaries of Meaning. Neo-Gricean Studies in Pragmatics and Semantics in Honor of Laurence R. Horn*. Benjamins, Philadelphia (2006)
- Abrusán, M.: Triggering Verbal Presuppositions. In: Li, N., Lutz, D. (eds.), *Semantics and Linguistic Theory (SALT) 20*. Vancouver (2011)
- Abusch, D.: Lexical Alternatives as a Source of Pragmatic Presuppositions. In: Jackson, B. (ed.) *SALT XII. CLC*, New York (2002)
- Riester, A., Kamp, H.: Squiggly Issues. Alternative Sets, Complex DPs and Intensionality. In: Aloni, M. et al. (eds.) *Logic, Language and Meaning. Revised Selected Papers from the 17th Amsterdam Colloquium*. Springer, Berlin (2010)
- Romoli, J.: The Presuppositions of Soft Triggers Are Not Presuppositions. In: Ashton, N., Chereches, A., Lutz, D. (eds.) *Proceedings of SALT 21*. Rutgers University (2011)
- Rooth, M.: A Theory of Focus Interpretation. *Natural Language Semantics* **1** (1992) 75–116
- Simons, M.: On the Conversational Basis of Some Presuppositions. In: Hastings, R., Jackson, B., Zvolensky, Z. (eds.) *Proceedings of Semantics and Linguistic Theory 11*. CLC, New York (2001)
- Von Heusinger, K.: Alternative Semantics for Definite NPs. In: Schwabe, K., Winkler, S. (eds.) *On Information Structure, Meaning and Form. Generalizations Across Languages*. Benjamins, Amsterdam (2007)