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Polarity Focus in Dhaasanac

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Abstract

Stress and rise-and-fall intonation on negative verbs in Dhaasanac cancel negation and emphasize the affirmative counterpart when correcting the hearer's belief on not-p. In the case of assertions, such polarity reversal is peculiar since only non-assertions such as negative questions, imperatives, and counterfactual conditionals have been known to implicate the opposite. Since focus in Dhaasanac is interpreted to be logically equivalent to another negation, focus appears to contribute to truth-conditional meaning. I argue that: (i) polarity focus signals the presence of an epistemic conversational operator VERUM (Höhle, 1992; Romero & Han, 2004) (ii) VERUM derives positive implicature, and (iii) negation outscopes VERUM.¹⁸

Focus Equivalent To Another Negation

I consider negative sentences in the East-Cushitic language Dhaasanac, which is also written as Daasanac or Dasenach. There are 34,564 Dhaasanac speakers in Ethiopia and Kenya.¹⁹ Sasse (1976) and Tosco (2001) are two of the few linguistic works on Dhaasanac.

Negation in Dhaasanac is an obligatory bipartite, which consists of the negative marker *ma* "not" and a negative verbal suffix *an* or *n*.

¹⁸ I am grateful for the comments received at the ACAL 39, the NACAL 36 and the Rutgers Semantics Seminar on Focus in Spring 2007, as well as those provided by an anonymous reviewer.

¹⁹ According to <http://www.ethnologue.com/>

- (1) a. Yaa **ma** ðaanan.
I not swim.PERF.NEG
"I did not swim."
- b. Baali hé **ma** sien.^{20& 21}
Baali not go.IMPF.NEG
"Baali will not go / will not be going"
- (2) a. Yáá mú tikil uba arge.⁵
1SG.SUBJ man one even see
"I could see even one man."
- b. Yáa mú tikil uba íl **ma** (uba) kí argi.
1SG.SUBJ man one even eye NEG with see.NEG
"I could see not even one man."
- In particular, pitch and intensity accent with rising intonation on negative verbs emphatically affirms the positive counterpart. Uppercase characters indicate the presence of an H* pitch accent (high tone realized on the stressed syllable) on a syllable.
- (3) a. Yáá ma sie-n.
I not go.NEG
"I did not go."
- b. YAÁ ma SIEn.
I not go.NEG
"I did go."

²⁰ The data was collected from a male native speaker of Dhaasanac from Kenya between 2005 and 2006 in New York State.

²¹ Diacritics represent tones.

⁵ Corrected from Tosco (2002: 247).

High pitch accent and stress on a subject pronoun and a verb changes the interpretation of the negative sentence (3a) into affirmative (3b).

Dhaasanac is a tone language as the following minimal tonal pairs suggest:

- (4) a. ár "bull" - ar "song"
 b. éllu "back" - ellu "cheeks"

Cruttenden (1986) states that tone languages generally do not involve the use of intonation for focus marking; however, a common strategy for focus marking is the expansion of the f_0 -contour, i.e., the high points of the tones are raised and the low points are lowered (Xu, 1999; Hartmann, 2006).

Such focus is used to correct the hearer's belief in the contrary.

- (5) a. A: Baali didn't go to the party.
 B: BAALI ma SIEn.
 Baali not go.PERF.NEG
 "Baali did go (it is not that Baali didn't go)"
- b. A: Baali didn't laugh.
 B: BAALI ma koSOLIn.
 Baali not laugh.PERF.NEG
 "Baali did laugh"
- c. A: Baali didn't sleep.
 B: BAALI ma RAFIN.
 Baali not sleep.PERF.NEG
 "Baali did sleep"

Even though the sentences themselves are negative, focus reverses the polarity. Logically speaking, such focus is equivalent to another negation, which cancels the other negation according to the law of double negation.

$$(6) [\neg \neg \square \square \square = [\square \square \square]$$

The interpretation, or denotation, of a doubly negated proposition \square is equivalent to the denotation of \square . For example, the interpretation of *Baali didn't go* with focus is equivalent to that of *it is not true that Baali didn't go*, which is the same as *Baali went*. Focus appears to substitute for another negation which cancels the predicate negation.

$$(7) [\neg \neg \square \square \square = [\square \square \square = [\neg \square_F \square]$$

Truth-Conditional Meaning of Focus

Since focus reverses polarity, focus itself contributes to the truth-conditional meaning. Without considering the semantic content of focus, (5a) *Baali didn't go* cannot mean *Baali went*. In order to calculate the truth conditions compositionally, the semantic contribution of focus cannot be ignored as mere presuppositions. Because the only logical operator that is able to cancel negation is another negation, the semantic content of focus is the same as of a lexical item. Alternatively, we might assume the existence of a silent focus-sensitive operator NOT, which is associated with F-marked constituents.

According to Rooth's framework, focus gives rise to a contextually restricted set of alternatives as a focus semantic value (indicated by "F"). Also, we compute the ordinary semantic value ("o") which is the proposition itself (Rooth, 1985, 1992, 1996).

- (8) a. Baali only ate [apples]_F.
 b. $[[\text{Baali only ate [apples]}_F]^0 = \text{the proposition "Baali ate apples"}$
 c. $[[\text{Baali only ate [apples]}_F]^f = \{\text{Baali ate oranges, Baali ate apples, Baali ate bananas, ...}\}$

Given that the contrastive focus in (9a) emphasizes the affirmative in contrast with the negative, the focus semantic value of (9b) is the set of affirmative and negative propositions, namely, *Baali went* and *Baali didn't go*.

- (9) a. BAALI ma SIEn.
 Baali not go-NEG
 "Baali did go (it is not that Baali didn't go)"
 b. $[[\text{BAALI ma SIEn}]^f = \{\text{Baali went, Baali didn't go}\}$

Our problem is to derive the positive proposition out of the negative sentence. The ordinary semantic value should be an affirmative proposition derived after the negation is canceled either by focus itself or an implicit operator equivalent to negation.

- (10)a. $[[\text{Baali ma sien}] = 1 \text{ iff it is not the case that Baali went}$
 b. $[[\text{BAALI ma SIEn}]^0 = \text{the proposition, "Baali went"}$

Since *Baali didn't go* with focus can be true if and only if Baali went, the principle of compositionality is violated if we do not assign the truth-conditional meaning to the focus or covert negation that is associated with focus. (11e) regards focus (or the implicit negation that is associated with focus) as one of the lexical items and the interpretation of focus is the function from truth values into truth values.

- (11) a. $[[\text{BAALI ma SIEn}] = 1 \text{ iff Baali went}$
 b. $[[\text{Baali}] = \text{Baali}$

- c. $[[\text{go}] = \lambda x \in D_e. \text{go}'(x)$
 d. $[[\text{not}] = \lambda t \in D_t. t = 0$
 e. $[[]_F] \text{ (or the implicit NOT)} = \lambda t \in D_t. t = 0$

(11c) implies that the denotation of *go* is a function from individuals to truth values. The functional application of the denotation of *go* to the denotation of *Baali* returns truth values, i.e., true or 1, if Baali went, and false, or 0, if Baali did not go. The denotation of *not* is the function from a truth value into the other truth value of opposite polarity, which is the same as the denotation of focus in Dhaasanac in (11e).

Pragmatic Account

Conversational Implicature

Rather than appealing to the truth-conditional meaning of focus, we might consider Austinian-Searlean speech act theory (Austin, 1962; Searle, 1975) in order to account for the peculiar contribution of focus in Dhaasanac.

In speech act theory, a sentential force (sentence mood) of a focused negation in Dhaasanac is assertion, and the illocutionary force, i.e., acts done in speaking, is the correction of the hearer's belief.

- (12) I correct your belief that Baali did not go.

Even though focused constituents are usually discourse-new, *Baali did not go* is discourse-given as discussed in the next section. The hearer already believes that Baali did not go. Therefore, the addressee assumes that the speaker cannot literally mean *Baali did not go* and infers that the speaker meant the opposite, i.e., *Baali did go*.

It has also been said that the fall-rise intonation expresses speaker uncertainty (Ward and Hirschberg, 1985).⁶²³ The hearer understands the speaker's uncertainty, in fact, denial, of *not-p* based on the intonation in Dhaasanac negation.

Given Foci

In general, lack of prominence indicates givenness while prominence indicates novelty in discourse. However, in Dhaasanac negation, the given constituents receive stress and intonational focus.⁷²⁴

- (13) A: Baali didn't go to the party.
 B: [BAAli ma SIEn]_G
 Baali not go.PERF.NEG
 "Baali did go (it is not that Baali didn't go)"

G in (13b) marks constituents that are discourse-given (Schwarzschild, 1999; Selkirk, 2006). Since the previous utterance contains *Baali did not go*, the whole sentence is G-marked.

This is contrary to what Partee (1998) shows about a second occurrence focus (2OF). According to Partee, 2OF often lacks any intonational marking.

- (14) A: Everyone already knew that Mary only eats VEGETABLES.
 B: If even Paul knew that Mary only eats vegetables, then he should have suggested a different RESTAURANT.

⁶ Thanks to Norry Ogata for referring me to Ward and Hirschberg (1985).

⁷ In Halliday (1967), "new" is defined as "contextually and situationally non-derivable information," "contrary to some predicted or stated alternative."

Since *only* is a focus-sensitive operator, the two occurrences of "only eats vegetables" should have the same analysis. However, the second occurrence focus "vegetables" appears to lack prosodic prominence. Later, Beaver et al. (2004) showed that the 2OFi are in fact marked by longer duration and greater intensity.

Féry and Samek-Lodovici (2006) explain that there is a universal constraint DESTRESS-GIVEN, which prohibits the prominence of a given phrase based on the framework of Optimality Theory (Prince and Smolensky 1993).

- (15) a. DESTRESS-GIVEN:
 A given phrase is prosodically nonprominent.
 b. STRESS-FOCUS:
 A focused phrase has the highest prosodic prominence in its focus domain.
 (Féry & Samek-Lodovici, 2006: 135)

In Dhaasanac examples, the contrastive polarity focus is realized obeying STRESS-FOCUS even in violation of DESTRESS-GIVEN, which avoids prosodic prominence on a given phrase.

- (16) STRESS-FOCUS >> DESTRESS-GIVEN
 Even when 2OF receives prominence, Selkirk (2006) observes that 2OF bears the lower level of stress.
 (17) Selkirk (2006: 36):
 "There is actually some question whether DESTRESS-GIVEN should be given this totally general formulation. G-marked elements are clearly averse to bearing major-phrase-level stress, but they may bear the lower level of stress that supports the presence of pitch accents."

However, correction focus in Dhaasanac is not of the lower level at all. Therefore, Dhaasanac negation falls outside of the generalizations on givenness.

Negation Outscopes the VERUM Operator

Section 2 incorporated the polarity reversing effect of negation in Dhaasanac into the truth-conditional meaning of focus. Section 3 attributed it to the pragmatic inference of the hearer based on givenness of the proposition. In this section, we will consider an alternative explanation for the nullification of focused negation in Dhaasanac.

Verum Focus (stress on polarity elements (Höhle, 1992)) signals the presence of the VERUM operator (cf. *really*) (Romero & Han, 2004).

- (18) A: Tom got an A in Ling 106.
 S1: Did he study for that class? Or did he simply cheat on the exam?
 (neutral, unbiased)
 S2: Did he STUDY for that class?
 (negatively biased)
- (19) A: After all the studying he did, Tom got an A in Ling106.
 S3: DID he study for that class? (negatively biased)
 S4: Did he REALLY study for that class? (negatively biased)

S2, S3, and S4 implicate that the speaker does not believe that Tom really studied for Ling 106. The speaker insinuates that Tom must have cheated, failing which, he would not have got an A. Such negative implicature arises from the focus on the verb *study* in S2, the auxiliary *did* in S3, and *really* in S4. Focus on polarity

elements suggests speaker bias and the presence of the VERUM (epistemic conversational operator) which derives the existence and content of the negative implicature.

In Dhaasanac negation, the speaker is positively biased, i.e., presupposes that Baali went. The implicature raised by focused negation is a positive implicature.

(20) Assumption: Focus on negative sentences necessarily contributes an epistemic operator VERUM.

Romero and Han (2004) claim that preposed negative yes-no questions contain the epistemic conversational operator VERUM. Their argument is based on the fact that preposed negation in yes-no questions necessarily contributes to the positive implicature when the speaker is positively biased (21a) in contrast with non-preposed negative yes-no questions (21b).

- (21) a. A: Jane came.
 S: Didn't Pat come too?
 Positive epistemic implicature: The speaker believes or at least expects that John drinks.
 LF: [_{CP} Q NEG [VERUM [Pat came]]]
- b. A: Did Pat not come too?
 No epistemic implicature: The speaker is not biased
 LF: [_{CP} Q VERUM [NEG [Pat came]]]

In preposed negative yes-no questions (21a), negation is not interpreted clause-internally since the VERUM operator intervenes between the proposition and the negation. On the contrary, VERUM scopes over negation in non-preposed negative yes-no questions such as (21b) so that negation is interpreted.

(22) [_i VERUM_i]]^{gxi} = [_i really_i]]^{gxi} = □_{p<st>} □_{w_s}, w' ∈ Epi_{x(w)}[p(w') = 1] (i: addressee or the individual sum of the

addressee and the speaker)

(22) states that the interpretation of the VERUM operator is equivalent to the interpretation of the lexical item *really*. The denotations of both VERUM and *really* take propositions, such as the denotation of *Pat came*, as arguments and return a function from possible worlds to truth values—true if the proposition is true in all the speaker's belief worlds, i.e., the speaker believes that the proposition must be true, or false otherwise.

The VERUM operator is explicit in focus (Romero & Han, 2004). VERUM arising from polarity focus (focus on polarity elements such as verbs and auxiliaries) contributes to positive implicature: that is, the speaker implicates that he believes that the proposition should be added to the common ground between the speaker and the hearer (Stalnaker, 1978).

- (23) a. Baali ma sien.
 LF: [_{CP} NEG [_{TP} Baali went]]
 b. BAALi ma SIEn.
 LF: [_{CP} NEG VERUM [_{TP} Baali went]]

In (23b), the presence of the VERUM operator signaled by focus blocks the clause-internal interpretation of negation so that negation is not interpreted as it is.

Polarity Reversing Focus in Non-assertions

In my knowledge, there is little linguistic data in which focus changes the truth conditions of assertions. The only other example is found in the west Massachusetts dialect, in which intonation contributes to the truth conditions of assertions:

- (24) So don't I. (= So do I.)⁸²⁵

Other than that, all discussions about focus with truth-conditional effect are limited to questions and imperatives, and counterfactual conditionals. For example, negation in questions and imperatives can be interpreted to be positive. Biased negative questions such as (25) imply that the speaker expects the positive answer to be correct (Ladd, 1981; Romero & Han, 2004).

- (25) Didn't you enjoy the party? (= I'm sure you did.)
 Certain Japanese imperatives may carry the opposite meaning (Satoshi Tomioka p.c.).
 (26) a. Baka ie.
 fool say.IMPERATIVE
 "Say silly" (= "Don't go silly!")
 b. Usotsuke.
 tell a lie.IMPERATIVE
 "Tell a lie!" (= "Don't tell a lie!" = "No kidding!")

Moreover, if focus is embedded under counterfactual conditionals, depending on the chosen scenario, focus affects the truth value of the propositions. The following examples are from Rooth (1999), who in turn modified them from Dretske (1972):

- (27) a. If Clyde hadn't [married]_F Bertha, he would not have been eligible for the inheritance.
 b. If Clyde hadn't married [Bertha]_F, he would not have been eligible for the inheritance.

Under the circumstances that Clyde should be married to someone, say, to anyone, by the age of thirty in order to inherit a large amount of money, (28a) is true but (27b) is false (Rooth, 1996).

²⁵ I would like to thank Ray Jackendoff for bringing these examples to my notice.

Except for the west Massachusetts example, truth-conditional contribution of focus is limited to non-assertions—question forms, imperatives and counterfactual conditionals. The unknown Dhaasanac data suggests the need for a revision of the current theory in a manner that can explain how focus affects truth-conditional meaning.

Conclusion

This paper presented new data on the understudied language Dhaasanac. When a speaker wishes to correct a hearer's belief on a negative proposition, the speaker uses greater intensity and rise-and-fall intonation on a negative verb, and then, the assertion is interpreted as the affirmative. Such focus is logically equivalent to negation that cancels predicate negation. This suggests that focus contains truth-conditional meaning.

Pragmatic inference may play a role in the hearer's inference that the assertion means the opposite based on the fact that the given information is focused. Epistemic bias signaled by focus might block the clause-internal interpretation of negation.

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