

On Ladd's (1981) interpretations of High Negation Polar Questions

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INTRODUCTION. This paper investigates HiNQs like (1). In a situational context in which S has an original bias for p and newly receives evidence bias for $\neg p$ [OB: p , EB: $\neg p$], two interpretations are said to arise (Ladd 1981): (i) an **outer negation** interpretation where S checks p and (ii) an **inner negation** interpretation where S checks $\neg p$. The interpretation is disambiguated by the presence of positive vs. negative polarity items (PPIs vs. NPIs): (2)-(3).

- (1) Didn't Karen eat?
- (2) Didn't Karen eat something / already / too? \Rightarrow Outer negation reading
- (3) Didn't Karen eat anything / yet / either? \Rightarrow Inner negation reading

Two main analyses of Ladd's interpretations are found in the literature. Under the first analysis, a HiNQ like (1) is scopally ambiguous between a reading where the operator VERUM scopes over negation, as in (4a), and a reading where the negation scopes over VERUM, as in (4b), yielding the outer and inner reading respectively (Romero & Han 2004, cf. Repp 2013). Under the second analysis, there is only one structure, namely (5), which invariably produces a question checking p . By default, S has a tendency to retain her original belief p , which gives us the outer negation reading. Deviating from this default tendency requires an NPI –whose pragmatic properties overwrite the default– or other overt marking. This is perceived as Ladd's inner negation reading (AnderBois 2011, see also Northrup 2014).

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| (4) | Romero & Han (2004) | (5) | AnderBois (2011) |
| | a. [Q [\neg VERUM [p]]] | | [Q \neg_{hi} p] |
| | b. [Q [VERUM [$\neg p$]]] | | |

To assess the empirical adequacy of the two competing analyses, we have designed three experimental studies. The first study, in which the polarity of the biases is switched, has been successfully carried out and provides tentative support for the analysis (4). The aim of the second study is to investigate experimentally whether the inner reading is due to the presence of NPIs, as assumed by the second analysis. The third study, in preparation, tests the acceptability of the NPI *either* in HiNQs, which is disputed (cf. Hartung 2006, Sailor 2013).

STUDY 1. Predictions. We set up scenarios where S has an original bias for $\neg p$ and newly receives contextual evidence for p [OB: $\neg p$, EB: p]. The predictions of the two competing analyses are as follows. According to Romero & Han's analysis, S may in principle use an outer negation structure, as in (6a), or an inner negation structure, which simplifies as in (6b). In an outer reading context, the former structure will be chosen, which is realized as a stacked negation HiNQ, e.g., *Didn't Karen not eat?* In an inner reading context, the latter structure will be chosen, which –given the simplification of $\neg\neg$ – will be realized as a positive question with focus on the tense verb (and/or *really*), e.g. *DID Karen eat?* Hence, an asymmetric realization pattern is expected between the outer and inner context conditions.

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| (6) | a. [Q \neg VERUM $\neg p$] | \Rightarrow | Stacked negation HiNQ, e.g. <i>Didn't Karen not eat?</i> |
| | b. [Q VERUM $\neg\neg p$] | \Rightarrow | PosQ with Focus on tensed V, e.g., <i>DID Karen eat?</i> |

According to AnderBois (2011), for the bias combination [OB: $\neg p$, EB: p], the underlying structure (7) is equally available to convey the outer reading and the inner-like interpretation. This unique structure is univocally realized as a stacked negation HiNQ. Hence, this analysis predicts a parallel selection pattern both in the outer and inner conditions.

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| (7) | [Q \neg_{hi} $\neg p$] | \Rightarrow | Stacked negation HiNQ, e.g. <i>Didn't Karen not eat?</i> |
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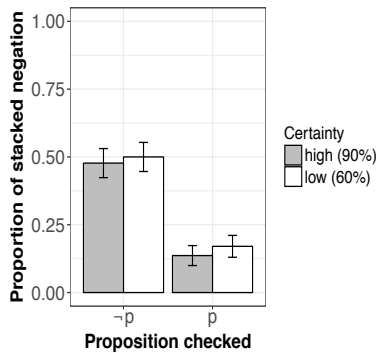


Fig. 1: Results of Study 1

Design. We constructed contexts crossing the proposition checked ($\neg p$ vs. p) and the degree of certainty about the checked proposition (90% vs. 60%). 30 participants (native speakers of Canadian English) were requested to choose between a stacked negation HiNQ and a focus PosQ. **Results.** As shown in Fig.1, stacked negation HiNQs were selected at approximately the same rate as focus PosQ in the $\neg p$ -conditions but were significantly dispreferred in favor of focus PosQs in the checking p -conditions. That is, an asymmetric selection pattern was found, as predicted by Romero & Han (2004) but not by AnderBois (2011).

STUDY 2. Predictions. Given Study 1, we assume that there is a difference between checking p vs. $\neg p$ and that this is somehow reflected in the LFs. Still, AnderBois (2011) may be right that the outer reading is the default and that the inner reading needs an NPI trigger. The question arises, how bare HiNQ like (1) compare in acceptability to PPI-HiNQs like (2) and to NPI-HiNQs like (3) across p - and $\neg p$ -contexts. While the behavior of PPI-HiNQs and NPI-HiNQs is in principle expected to be the same under both analyses (control conditions), Romero & Han (2004) and AnderBois (2011) make different predictions for bare HiNQs; see Table 1. **Design.** We crossed 2 types of contexts (S checking p vs. $\neg p$) with 3 types of HiNQs (either containing the PPI *some* or the NPI *any* or a plain indefinite). In a pilot study, 48 participants (native speakers of American English) rated the acceptability of the question in the context on a scale from 1 to 7. **Results of the pilot.** A linear mixed effects regression model showed no interaction between context type and question type ($p > 0.1$) including control conditions. Similar results obtained when we re-run the experiment twice making the proposition checked more prominent and including content questions after some trails to ensure participants read the entire context. Since the control conditions did not behave as expected, we did not run the planned study.

	PPI-HiNQ	bare HiNQ		NPI-HiNQ
		Romero & Han (2004)	AnderBois (2011)	
S checking p	✓	✓	✓	#
S checking $\neg p$	#	✓	??	✓

Table1: Predictions by the two competing analyses

STUDY 3. Predictions. HiNQs with the NPI *either* have been observed to be somewhat degraded (Hartung 2006, Sailor 2013). We compare the acceptability of HiNQs with *either* with that of HiNQs with the NPI *yet*, the latter of which is undisputed. If *either* is acceptable in HiNQs, we expect to find no difference between *either* and *yet*, and moreover no difference between questions with High and Low Negation. **Design.** High vs. Low Negation questions are presented in contexts in which they are felicitous. The 2 question types (High vs. Low Negation questions) are crossed with 2 NPIs (*either* vs. *yet*). Participants will have to rate the acceptability of the question in the context on a scale from 1 to 7. We plan to contrast native speakers of American English with native speakers of Canadian English to detect a possible dialectal variation reported in Sailor (2013).

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