

# Semantic effects of head movement in negative auxiliary inversion constructions\*

Sabina Matyiku

Yale University

## 1. A semantic effect of head movement

This paper provides support for the hypothesis that head movement is an operation that is available in the syntactic component of grammar. It contributes to a line of research which attributes an interaction between head movement and interpretation (Lechner 2006, 2007, Roberts 2010, Szabolcsi 2010, Hartman 2011, Iatridou & Zeijlstra 2013, among others). In this paper, the evidence for such an interaction comes from the head movement of negation having a semantic effect in negative auxiliary inversion constructions. Negative auxiliary inversion is a phenomenon that is attested in some varieties of English spoken in North America. A construction bearing negative auxiliary inversion is derived by movement of a negated auxiliary that must occur in the narrow syntax because the moved head is both pronounced and interpreted in its final landing site. The construction's unique subject restriction can be accounted for with the proposal that the movement of negation is subject to principles of scope economy.

### 1.1 The phenomenon of negative auxiliary inversion

Constructions exhibiting negative auxiliary inversion involve a clause-initial negated auxiliary or modal followed by a quantificational or indefinite subject, as in (1).<sup>1</sup>

---

\*I would like to thank NELS 46 reviewers and attendees for their useful comments concerning this paper. I have also greatly benefited from presenting parts of this work to audiences at Yale, UCLA, NYU, GLOW 36, 25-SCL, and WCCFL 32 and I am thankful for the feedback provided to me there. I am grateful to Mark Baker, Jonathan Bobaljik, Lucas Champollion, Ashwini Deo, Larry Horn, Tim Hunter, Michael Freedman, Yael Sharvit, Tim Stowell, Anna Szabolcsi, Jim Wood, Susi Wurmbrand, Jason Zentz, and particularly to my advisors, Bob Frank and Raffaella Zanuttini, for helpful comments and discussions about aspects of the research presented here. I would also like to thank George Christian, Alysia Harris, Gregory Johnson II, and William Salmon for kindly providing judgments. For more in-depth discussions of all of the issues addressed here, please see Matyiku (to appear). I am solely responsible for any errors or omissions.

<sup>1</sup>With each documented example, I cite the variety of English it is associated with and the original source of the example. In the case in which no source is provided, the examples are from original fieldwork. An approximate gloss is provided in some cases. Given that negative auxiliary inversion is not available in most

- (1) Didn't everybody see the fight. (West Texas English)  
 'Not everybody saw the fight.'

Despite the apparent subject-auxiliary inversion, such sentences are declarative and receive the intonation of a declarative in speech. The phenomenon was first observed in 1968 by Labov et al. for varieties of African American English. It is also attested in varieties of Appalachian English (Wolfram & Christian 1976, Feagin 1979, and many others) and in varieties of West Texas English (Foreman 1999, 2001).<sup>2</sup> The corresponding non-inverted construction is often also available, as in (2).

- (2) Everybody didn't see the fight. (WTE)

The non-inverted construction is ambiguous with respect to the scope of the quantificational subject and negation whereas in constructions exhibiting negative auxiliary inversion, negation has unambiguous wide scope, as initially observed in Foreman (1999) and confirmed by my consultants.

## 2. A movement analysis of negative auxiliary inversion

I adopt an analysis in which the auxiliary-first word order of the construction is derived by the movement of the negated auxiliary over the subject, following prior movement analyses of the phenomenon (Labov et al. 1968, Labov 1972, Martin 1993, Foreman 1999, 2001, Green 2014). The construction exhibiting the phenomenon is derived from its non-inverted counterpart, (3a), by head movement of the negated auxiliary, as in (3b). The subject in both constructions is in canonical subject position, assumed here to be Spec TP.

- (3) a. [TP everybody didn't see the fight]  
 b. didn't [TP everybody ~~didn't~~ see the fight]
- 

Alternative analyses provided in the literature for the construction derive the auxiliary-first word order by restricting the movement of the subject from raising as high as to its canonical position (Martin 1993, Sells et al. 1996, Parrott 2000, White-Sustaíta 2010).

---

mainstream varieties of English, I refer to varieties which lack the phenomenon as 'Standard English' but I reject any negative connotations the use of this label might imply.

Abbreviations: AAE – African American English, AppE – Appalachian English, SE – Standard English, WTE – West Texas English.

<sup>2</sup>This paper focuses on data from varieties spoken in Texas but preliminary investigations indicate that the analysis is extendable to at least some speakers of all three varieties. The discrepancy is in whether all three varieties allow strong quantifiers as subjects. The acceptability of the example in (1) is also confirmed to me by a speaker of African American English and by a speaker of Appalachian English, but strong quantificational subjects are not as often attested in the literature for negative auxiliary inversion in these varieties. It is possible that there may be cross-dialectal variation and that not all speakers allow strong quantificational subjects in the construction, or its omission in earlier works could simply be due to the data being relatively rare.

## 2.1 Subject is in canonical subject position

Evidence in favor of the subject occupying the canonical subject position in negative auxiliary inversion constructions comes from the construction's unique subject restriction and from tag-question formation results. The subjects of negative auxiliary inversion constructions can be quantificational, as we've seen in (1), and they cannot be specific or referential, as in (4).<sup>3</sup>

(4) \*Didn't Jamie see the fight. (WTE)

The subject restriction of the construction is apparently similar to the subject restriction of existentials since both allow quantificational subjects and disallow definite subjects. Some proponents of the alternative analyses in which the subjects of negative auxiliary inversion constructions do not raise as high as to canonical subject position extend the analysis of existentials to the construction (Martin 1993, Parrott 2000). However, negative auxiliary inversion is compatible with strong quantifiers, as in (5a), whereas existentials are not, as in (5b).

(5) a. Didn't everybody see the fight. (WTE)  
b. \*There's everybody at the fight. (SE)

While both constructions exhibit a definiteness effect, it is not the same definiteness effect and extending the analysis of existentials to negative auxiliary inversion constructions does not capture the distribution of subjects that are attested, at least not for the varieties that allow strong quantificational subjects. The availability of strong quantificational subjects in negative auxiliary inversion constructions cannot be accounted for by extending the analysis of a known phenomenon. This is one of the reasons I reject an analysis in which the subjects stay in a lower projection than canonical subject position.<sup>4</sup>

Evidence in favor of the subject of negative auxiliary inversion constructions occupying canonical subject position comes from tag-question formation, part of which targets this position.<sup>5</sup> The subject of a tag-question agrees in features with the element that occupies canonical subject position. When a tag-question follows a negative auxiliary inversion construction, the subject of the tag-question is a pronominal element that agrees in features with the thematic subject of the negative auxiliary inversion construction, as in the examples in (6).

(6) a. Can't all of y'all win the jackpot, though, can you? (WTE)

---

<sup>3</sup>Specific or referential subjects appear to be possible in certain strong emotive or expressive contexts (Horn 2015).

<sup>4</sup>For further evidence that the subject of negative auxiliary inversion constructions cannot remain in  $\nu$ P-internal position, see Foreman (2001), who shows that the subject does not get elided in  $\nu$ P-ellipsis and that low adverbs can intervene between the subject and the verb.

<sup>5</sup>Tag-question formation tests are used as a diagnostic test in order to determine the nature of the subject of negative auxiliary inversion constructions in Foreman (1999, 2001).

- b. Didn't everybody see the fight, did they? (WTE)

The subject of the tag cannot be an expletive, as in (7), as one would expect if negative auxiliary inversion constructions were negative existentials with null expletives.<sup>6</sup>

- (7) a. \*Can't all of y'all win the jackpot, though, can there? (WTE)  
 b. \*Didn't everybody see the fight, did there? (WTE)

## 2.2 Evidence for a higher negative projection

I adopt an analysis for negative auxiliary inversion constructions in which the construction is derived by movement of a negated auxiliary to a position above the subject in its canonical subject position. I assume the landing site of the negated auxiliary to be  $\text{Neg}_2^\circ$ , an additional functional projection proposed in Foreman (1999, 2001) that occurs above  $\text{T}^\circ$  but below  $\text{C}^\circ$ .<sup>7</sup> I propose this higher negative projection to be available in the grammars of all speakers that exhibit the phenomenon of negative auxiliary inversion and to coexist in these varieties with the canonical functional projection for negation,  $\text{Neg}^\circ$ , as initially proposed in Pollock (1989). The revised derivation of the construction from (1) is as in (8).

- (8) [ $\text{Neg}_2^\circ$  didn't [ $\text{TP}$  everybody [ $\text{T}^\circ$  didn't [ $\text{Neg}^\circ$  -n't see the fight]]]]
- 

Sentential negation starts out in the lower negative projection, moves up to  $\text{T}^\circ$  to form a unit with the auxiliary, and the negated auxiliary undergoes head movement to the higher negative projection in order to derive a construction which exhibits negative auxiliary inversion. I temporarily set aside the issue of whether the subject is base-generated lower and show it only in canonical subject position.

### 2.2.1 Sentential negation *-n't* is necessary

As the name of the construction implies, it is only licit in negative sentences. The licensing instance of negation is sentential negation morpheme *-n't*, as in (9).

- (9) Won't everybody fit in that car. (WTE)

<sup>6</sup>Negative existentials are, however, attested in all three varieties of English that allow negative auxiliary inversion constructions and also independently, and the subject of their tag questions are expletives (Labov et al. 1968, Foreman 2001).

<sup>7</sup>The negated auxiliary cannot raise as high as to  $\text{C}^\circ$  because, as initially observed in Labov et al. (1968), the construction can be embedded under an overt complementizer, as in (i), a property that has been observed for all three varieties which exhibit negative auxiliary inversion but which may not be universal for all speakers who allow the construction. Sells et al. (1996) report that their African American English speakers did not accept them.

- (i) I know a way that can't nobody start a fight. (AAE; Labov et al. 1968)

### *Semantic effects in negative auxiliary inversion*

In comparison, ‘positive’ inversion is not possible, as in (10a), negative subjects are not enough to license the construction, as in (10b), and sentential negation cannot be *not*, as in (10c) or (10d).

- (10) a. \*Will everybody fit in that car. (WTE)  
b. \*Will none of them fit in that car. (WTE)  
c. \*Will everybody not fit in that car. (WTE)  
d. \*Will not everybody fit in that car. (WTE)

#### **2.2.2 Independent arguments for a higher negative projection for negative concord**

Varieties that exhibit negative auxiliary inversion also exhibit negative concord.<sup>8</sup> A sentence that exhibits negative concord contains multiple morphologically negative elements but is interpreted as having a single instance of sentential negation. An example of a construction which bears both negative concord and negative auxiliary inversion is as in (11).

- (11) Don’t nobody live there. (WTE; Foreman 2001)  
‘Nobody lives there.’

A number of syntactic analyses of negative concord advocate for a higher structural projection for negation in languages which exhibit negative concord (see in particular Zanuttini 1991, Zeijlstra 2004, and the authors’ later works). This projection is proposed to occur above  $T^\circ$  and below  $C^\circ$  in these works as well. Given the observation that the presence of negative auxiliary inversion in a variety is a sufficient condition for negative concord, the projection that houses the negated auxiliary in negative auxiliary inversion constructions can also be used to account for the phenomenon of negative concord.

### **3. Semantics of negative auxiliary inversion constructions**

Negation has unambiguous wide scope in negative auxiliary inversion constructions, as previously mentioned. The surface scope interpretation is available while the inverse scope interpretation is unattested.

#### **3.1 Deriving the surface scope of the construction**

Given the syntactic analysis provided in the previous section, the surface scope interpretation can be computed when both scope-bearing elements, negation and the subject, are interpreted in their final landing site. Assuming that the subject starts out in a position lower than canonical subject position gives rise to the additional possibility of deriving the interpretation by reconstructing both scope-bearing elements. Both of these interpretations are schematically represented in (12). In the interpretation in (12a), both elements

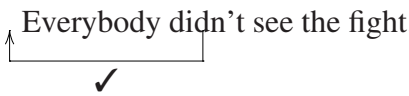
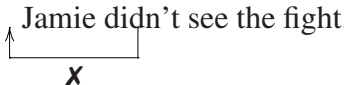
---

<sup>8</sup>The converse of this generalization does not hold. Not all varieties that exhibit negative concord also exhibit negative auxiliary inversion.



### 3.2 Accounting for the distribution of subjects by restricting the movement

Recall that quantificational subjects are licit in negative auxiliary inversion constructions while definite subjects such as proper names are not. Given that I derive negative auxiliary inversion constructions from their non-inverted counterparts, I account for the construction's subject restriction with the proposal that the movement of negation that derives negative auxiliary inversion constructions is licensed over the attested subjects, as in (14a), and disallowed over the unattested subjects, as in (14b).

- (14) a.  Everybody didn't see the fight.  
✓
- b.  Jamie didn't see the fight.  
✗

The availability of movement over a quantificational element and unavailability of movement over a definite element is an already observed restriction on covert movement (Fox 2000).

#### 3.2.1 Fox's (2000) Principle of Scope Economy

Fox accounts for the observation that covert scope-shifting operations such as quantifier raising do not occur in the case in which they would be semantically vacuous by positing a principle of Scope Economy. The intuition behind the analysis is that the covert movement of a quantifier is allowed when it gives rise to a different interpretation and disallowed when it does not. The author calculates the effect of the covert movement by comparing the interpretation containing it to the surface scope interpretation of the derivation. As a consequence, in the case in which there is just one scope-bearing element in a derivation, covert movement is disallowed.

#### 3.2.2 Extending the Principle of Scope Economy

The principle can capture the subject restriction of negative auxiliary inversion if it is extended to apply to overt movement. Modified in this way, the principle will allow the movement of negation to occur over quantificational subjects and it will block the movement from occurring over definite subjects such as proper names. The Revised Principle of Scope Economy cannot apply to all instances of movement, however, because not all instances of movement have semantic effects. It would not be desirable, for example, to block the movement of a definite subject to canonical subject position if definite subjects are generated lower in the syntax, even though this movement is semantically vacuous.

In order to prevent overgeneralization of this kind, I propose extending the principle to apply to movement that is optional. I define optional movement as movement that is not triggered by a feature. An element can undergo optional movement to a projection that

is available in a derivation but that does not itself trigger movement. I propose the higher negative projection,  $Neg_2^\circ$ , to be a such a projection. When  $Neg_2^\circ$  is part of the numeration and is merged into a derivation, it can serve as a landing site for optional movement because it does not in itself trigger movement. Whether or not movement occurs to this position is subject to the Revised Principle of Scope Economy. The principle will allow the movement if it gives rise to a new scopal relation, such as when the subject is quantificational. It will disallow the movement if it does not, such as when the subject is a proper name.

### 3.3 Blocking the inverse scope of negative auxiliary inversion constructions

An issue that remains to be addressed is the lack of ambiguity in negative auxiliary inversion constructions despite the presence of multiple scope-bearing elements. The inverse scope is unattested, but there are two ways in which it can be derived, both of which are allowed by the Revised Principle of Scope Economy. Negation could reconstruct below the subject, as in (15a), or the subject could undergo covert movement to outscope negation, as in (15b).<sup>12,13</sup>

- (15) a. [ $Neg_2^\circ$  ~~didn't~~ [ $TP$  everybody  $\lambda$  didn't see the fight]]  
           └-----┘  
       b. everybody [ $Neg_2^\circ$  didn't [ $TP$  everybody ~~didn't~~ see the fight]]  
           └-----┘

Given a derivation which contains multiple copies, Bobaljik & Wurmbrand (2012) provide a way in which to determine which copies are interpreted and which are pronounced. The intuition behind extending their analysis to account for the lack of inverse scope in negative auxiliary inversion constructions is as follows. A construction exhibiting negative auxiliary inversion is scope transparent because negation is both interpreted above the subject and pronounced above it. The word order these constructions exhibit is non-canonical, but the grammar allows them as possible outputs because they obey scope transparency. In both of the unattested cases in (15), the derivations are not scope transparent. The subject outscoopes negation but is pronounced below it. Additionally, the word order of both derivations is non-canonical. Since these construction disobey both scope transparency and exhibit non-canonical word order, they are not possible outputs of the grammar.

The grammar considers possible combinations of sets of interpretations and pronunciations and determines possible outputs on the basis of a set of economy conditions. The economy conditions needed are Scope Transparency (ScoT) as proposed by Bobaljik & Wurmbrand (2012) and the requirement that Canonical Word Order (CWO) be respected.<sup>14</sup>

<sup>12</sup>Recall that copies are interpreted in the position in which they are not crossed out and that covert movement is indicated with a dashed arrow. I ignore any lower copies of the subject in these structures.

<sup>13</sup>The Revised Principle of Scope Economy allows the interpretation in (15a) because reconstruction is an optional movement that is scopally significant. Similarly, the principle allows the interpretation in (15b) because quantifier raising is an optional movement that gives rise to a different order of operators at LF.

<sup>14</sup>I propose this constraint as a more general version of the authors' CCO constraint, a constraint which requires that canonical complement order be respected



The inverse scope interpretation of negative auxiliary inversion constructions can never be a possible output if we follow Bobaljik & Wurmbrand in assuming that the grammar considers first the interpretation and it computes the way in which the interpretation is linearized.<sup>15</sup> The inverse scope interpretation of negative auxiliary inversion constructions can never arise because whenever the subject outscopes negation, it will surface higher as a result of the derivation being both scope transparent and exhibiting canonical word order.

#### **4. Conclusion**

In this paper, I followed a line of research which defends the availability of head movement in the syntactic component of grammar on the basis of its interaction with interpretation. The empirical evidence came from the phenomenon of negative auxiliary inversion, a phenomenon which is attested in some varieties of North American English. The head movement that derives the constructions is both pronounced and interpreted in its final landing site. Additionally, the movement is subject to known principles of scope economy that I allow to apply to overt movement that is optional. Restricting the movement of negation in this way allows for an easy explanation of the construction's distribution of subjects.

Sabina Matyiku  
sabina.matyiku@aya.yale.edu

#### **References**

- Bobaljik, Jonathan David, & Susi Wurmbrand. 2012. Word order and scope: Transparent interfaces and the 3/4 signature. *Linguistic Inquiry* 43:371–421.
- Feagin, Crawford. 1979. *Variation and change in Alabama English: A sociolinguistic study of the white community*. Washington, DC: Georgetown University Press.
- Foreman, John. 1999. Syntax of negative inversion in non-standard English. In *Proceedings of the Seventeenth West Coast Conference on Formal Linguistics*, ed. Kimary Shahin, Susan Blake, & Eun-Sook Kim. Stanford: CSLI.
- Foreman, John. 2001. Syntax of negative inversion. Master's thesis, UCLA.
- Fox, Danny. 2000. *Economy and semantic interpretation*. Cambridge, Massachusetts: MIT Press.
- Green, Lisa. 2014. Force, focus, and negation in African American English. In *Micro-Syntactic variation in North American English*, ed. Raffaella Zanuttini & Laurence R. Horn. New York: Oxford University Press.
- Hartman, Jeremy. 2011. The semantic uniformity of traces: Evidence from ellipsis parallelism. *Linguistic Inquiry* 42:367–388.
- Horn, Laurence R. 1989. *A natural history of negation*. Chicago: University of Chicago Press.

---

<sup>15</sup>The alternative is computing interpretation, such as when copies are interpreted where they are pronounced in order to calculate surface scope and inverse scope is derived by covert operations. This is the assumption followed thus far in this paper about how meaning and pronunciation interact in the grammar.

- Horn, Laurence R. 2015. Negative inversion(s). Paper presented at Université de Caen, May 2015.
- Iatridou, Sabine, & Hedde Zeijlstra. 2013. Negation, polarity and deontic modals. *Linguistic Inquiry* 44:529–568.
- Labov, William. 1972. Negative attraction and negative concord in English grammar. *Language* 48:773–818.
- Labov, William, Paul Cohen, Clarence Robins, & John Lewis. 1968. *A study of nonstandard English of Negro and Puerto Rican speakers in New York City*. Philadelphia: US Regional Survey.
- Lasnik, Howard. 1999. Chains of arguments. In *Working Minimalism*, ed. Samuel Epstein & Norbert Hornstein, 189–217. Cambridge, Massachusetts: The MIT Press.
- Lechner, Winfried. 2006. An interpretive effect of head movement. In *Phases of interpretation*, ed. Mara Frascarelli, 45–69. Berlin: Mouton de Gruyter.
- Lechner, Winfried. 2007. Interpretive effects of head movement. <http://ling.auf.net/lingBuzz/000178>.
- Martin, Stefan Edmund. 1993. “Negative Inversion” sentences in Southern White English Vernacular and Black English Vernacular. In *University of Maryland Working Papers in Linguistics*, ed. Carol A. Mason, Susan M. Powers, & Cristina Schmitt, volume 1, 49–56.
- Matyiku, Sabina. to appear. Semantic effects of head movement: Evidence from negative auxiliary inversion constructions. Doctoral dissertation, Yale University. Manuscript in preparation.
- Parrott, Jeffrey. 2000. Negative inversion in African American Vernacular English: A case of optional movement? In *Proceedings of the 28th Western Conference on Linguistics (WECOL)*, ed. Nancy Mae Antrim, Grant Goodall, Martha Schulte-Nafeh, & Vida Samiian, volume 11, 414–427. Department of Linguistics, Fresno: California State University.
- Pollock, Jean-Yves. 1989. Verb movement, UG, and the structure of IP. *Linguistic Inquiry* 20:365–424.
- Roberts, Ian. 2010. *Agreement and Head Movement: Clitics, incorporation, and defective goals*. Cambridge, Massachusetts: MIT Press.
- Sells, Peter, John Rickford, & Tom Wasow. 1996. An optimality theoretic approach to variation in negative inversion in AAVE. *Natural Language and Linguistic Theory* 14:591–627.
- Szabolcsi, Anna. 2010. *Quantification*. Cambridge: Cambridge University Press.
- White-Sustaíta, Jessica. 2010. Reconsidering the syntax of non-canonical negative inversion. *English Language and Linguistics* 14:429–455.
- Wolfram, Walt, & Donna Christian. 1976. *Appalachian speech*. Arlington, VA: Center for Applied Linguistics.
- Zanutini, Raffaella. 1991. Syntactic properties of sentential negation. Doctoral dissertation, University of Pennsylvania.
- Zeijlstra, Hedde. 2004. Sentential negation and negative concord. Doctoral dissertation, University of Amsterdam.