

*Reflexives and Blocking Effects in Iron Range English*¹

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0. Introduction

In some languages with long-distance reflexives (e.g., Mandarin), coreference with a higher nominal expression is blocked when there is an intervening subject that does not match a lower subject for person. However, this is not the case in other languages (e.g., Italian). It has been suggested (e.g., Cole & Sung 1994) that only languages without subject/verb agreement exhibit such “blocking effects.” In order to account for these cross-linguistic facts, current analyses of long-distance reflexives have posited that binding and blocking are two separate processes (Cole 1990; Cole & Sung 1994; Cole et al 2006; *inter alia*). If binding and blocking involved the same process, we would not expect languages with long-distance reflexives to differ in terms of the existence of Blocking Effects. In this paper, I present new data from Iron Range English (IRE) which challenges the generalization that Blocking Effects only occur in languages without subject/verb agreement. At the same time, the distribution of IRE reflexives provides further evidence that positing separate binding and blocking processes is appropriate since different sets of nominal expressions are involved in Blocking and binding. In this paper, I give a brief background on IRE, present the methods used to collect the data, and offer separate phase-based analyses for the binding process and the Blocking process in IRE.

1. Iron Range English

Iron Range English is a non-standard dialect spoken in the arrowhead region of northern Minnesota. The Iron Range experienced a unique immigration pattern, and is often referred to as a “true melting pot” (Sirjamaki 1965, Underwood 1981). Non-standard characteristics of IRE have previously been reported in the literature. For example, Linn (1986) reported that there are lexical differences (e.g. a *location* is “a group of houses provided by the mining company”) and syntactic differences (e.g. *You play with five cards just* to mean “you play with just five cards”).

2. Methods

Naturalness judgments on sentences containing reflexives were collected using Magnitude Estimation (Bard et al 1996). Magnitude Estimation allows informants to “build” their own naturalness rating scale. This is advantageous because the scale does not restrict informants’ naturalness judgments. The participants in the study were 12 Minneapolis/St. Paul area English speakers (MSP speakers (ages 23-56 ($M=36.5$, $SD=9.66$)) and 31 IRE speakers (ages 22-77 ($M=46.26$, $SD=15.66$)). Results were normalized following Engen (1971) and Baylis (2007).

Each stimuli began with a short situation that set up a potential long-distance interpretation of the reflexive. Next, there was a target sentence that indicated intended coreference with capital letters. For example, in the sentence *JOHN said that Matt believes in HIMSELF, himself* was meant to corefer with *John*. Below the target sentence was an audio player. IRE speaking participants listened to an IRE speaker say the target sentence, and MSP speakers listened to a standard speaker say the sentence. Lastly, there was an open field for the naturalness rating.

3. Results

Female IRE speakers 35 and older rated sentences with long-distance reflexives (as in (1)) as significantly more natural than speakers from the Minneapolis/St. Paul area rated the same sentences ($N=13$; $p=.035$, t-test).

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(1) John_i thinks that [Matt believes in himself_i]

Only judgments of females 35 and older were used in the following t-test analyses.

IRE reflexive can corefer with a nominal expression outside the simple clause in subject or object position.

(2) [Hillary_i told Jill_j that [Mary_k believes in herself_{i/j/k}]]

IRE exhibits Blocking Effects when an intervening subject does not match the reflexive for person. Sentences with blocking were rated significantly worse than sentences with no blocking ($p = .003$).

(3) *Hillary_i said that [I believe in herself_i]

Sentences where the intervening subject did not match the reflexive for number were rated similarly to sentences with no blocking ($p=.941$). Similarly, sentences where the intervening subject did not match the reflexive for gender were rated similarly to sentences with all matching expressions ($p=.12$).

(4) John_i said that [**they** know that [Tom_j believes in himself_{i/j}]]

(5) John_i said that [**she** knows that [Tom_j believes in himself_{i/j}]]

Only subjects trigger Blocking Effects. Sentences with objects that did not match for person with the reflexive were rated similarly to other sentences ($p=.11$). Similarly, sentences with possessors that did not match for person with the reflexive were rated similarly to other sentences ($p=.32$).

(6) Hillary_i told **me** that [Jill_j believes in herself_{i/j}]

(7) He_i thinks that [**my** behavior harmed himself_i]

Even though IRE exhibits Blocking Effects, it also exhibits subject/verb agreement.

(8) a. I like/*likes coffee

b. You like/*likes coffee.

c. He *like/likes coffee.

Lastly, IRE reflexives exhibit island effects. These sentences were rated significantly less natural than sentences without islands ($p=.003$). Islands are indicated by subscript *I*.

(9) John_i made [_I the claim that Bill_j likes himself*_{i/j}].

(10) Bill_i wonders [_I who_j likes himself*_{i/j}].

In conclusion, Blocking and Binding processes target different sets of nominal expressions: both subjects and objects may act as binders while only subjects may act as blockers. Also, the reflexive cannot corefer with an antecedent in a higher clause when it is in an island.

4. Analysis

There is evidence for separate binding and blocking processes since binding and blocking target different sets of nominal expressions. I will present an Agree operation to account for binding facts (c.f. Hicks 2010) and a Multiple Agree operation to account for blocking facts (c.f. Hasegawa 2005). I assume a phase-based analysis using Chomsky's (2001) version of the Phase Impenetrability Condition.

(11) **Phase Impenetrability Condition (PIC)** (Chomsky 2001: 14)

[Given the structure [_{ZP} Z . . . [_{HP} α [H YP]]], with H and Z the heads of phases]: The domain of H is not accessible to operations at ZP; only H and its edge are accessible to such operations.

Island effects offer evidence that IRE reflexives must undergo raising in order to corefer with a nominal expression in a higher clause. I suggest that IRE reflexives have an operator-like quality which allows them to behave like *wh*-words in English. Like other operators, IRE

reflexives move successive-cyclically to [Spec, CP]. Raising analyses have been proposed for other long-distance reflexives (e.g., Zubizarreta 1987, Katada 1991, Huang & Liu 2001).

4.1 Binding Process

I posit that IRE reflexives have a [VAR] feature that must be assigned a value by a c-commanding nominal expression within the same phase via Agree (c.f. Hicks' (2010) analysis of English anaphors). Rezac (2004) and Baker (2008) suggest that a probe can search upwards for a value when a typical downward probe does not produce a goal. Reflexives have an unvalued [VAR] (VARIABLE) feature since they do not have an inherent capacity for reference. The Agree operation accounts for coreference and offers an inherent c-command relationship between the antecedent and the reflexive.

In a sentence like (12), which is an example of a sentence with a reflexive pronoun in Standard English, both the subject and object of the most embedded clause c-command the reflexive in the phase before the subject moves to [Spec, TP], so both subjects and objects are available as potential antecedents. Agree is "local" due to the Phase Impenetrability Condition.

(12) Craig_i knows that [TP John [VP <John_j> gave Bill_k a book about himself_{*i/j/k}]]

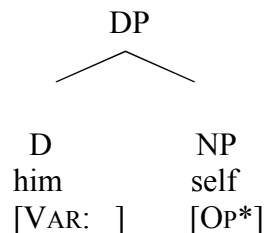
Hicks' analysis allows for more than one interpretation when the reflexive is in a *wh*-phrase. *Wh*-phrases move to [Spec, CP] where they can participate in operations of higher phases. The Agree operation is free to apply at any point in the derivation. An example sentence is in (13), and its derivation is in (14).

(13) [John_i wondered which picture of himself_{i/j/k} [Bill_j claimed [Paul_k had bought.]]]

(14) [CP John wondered [CP <which pictures of himself> Bill claimed [CP <which pictures of himself> Paul had bought <which pictures of himself>]]]

[VAR] can be valued at any point in the derivation. Once valued, the [VAR] feature keeps its value throughout the derivation. Recall that island effects suggest that IRE reflexives undergo raising in order to have a long-distance interpretation. In order to participate in processes of higher clauses, IRE reflexives must be at the edge of the phase: the [Spec, CP] position. Below is the proposed structure of IRE reflexives, with both an unvalued [VAR] feature and an operator-like feature that allows the reflexive to undergo raising.

(15) Proposed structure of Iron Range English reflexives



In a sentence like (16), *himself* can corefer with *Mike*, *Bill*, or *John* because *himself* raises to the [Spec, CP] of each higher clause. The derivation is below in (17).

(16) [John_i said that [Bill_j knows that [Mike_k likes himself_{i/j/k}]]]

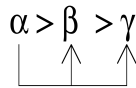
(17) [CP himself John said that [CP <himself> Bill knows that [CP <himself> Mike likes <himself>]]]

[VAR] feature may be valued in the simple clause (*Mike*), middle clause (*Bill*), or matrix clause (*John*). This operation accounts for long-distance ability of the reflexive and why both subjects and objects are possible antecedents. It does *not* explain Blocking Effects because only subjects trigger blocking effects.

4.2 Blocking Process

Only *subjects* that do not agree with the reflexive for *person* trigger Blocking Effects. I suggest that a [+multi] feature on T licenses the reflexive. The [+multi] feature on T requires that T agree with the subject and the reflexive with respect to person. In Hiraiwa's (2001: 69-70) definition of Multiple Agree (formalized below in (18)), a probe agrees with all the matched goals at the same derivational point in a single simultaneous operation if the goals are in a c-commanding relationship (represented by >) with the probe and each other.

(18) MULTIPLE AGREE as a *single simultaneous operation*



(Agree (α , β , γ) where α is a probe and both β and γ are matching goals for α). Note that while the domain of v is not accessible to operations at CP, it is accessible to operations "within" CP. Thus, a head like T can establish an agreement relationship with vP internal dependents, given the PIC in (14) and a structure like that in (25).

(19) [_{CP} [_{TP} T [_{VP} [_{VP}]]]]

This analysis considerably modifies Hasegawa's (2005) analysis for the distribution of reflexives in Standard American English. Unlike Hasegawa, I propose that this operation accounts for Blocking effects rather than binding effects. This operation targets only subjects; objects need not agree for person with the reflexive.

5. Conclusion

Blocking Effects can exist in languages that exhibit subject/verb agreement, as illustrated in IRE. At the same time, IRE offers further support that binding and Blocking are separate processes.

References

- Bard, E. G., Robertson, D., & Sorace, A. (1996). Magnitude Estimation of Linguistic Acceptability. *Language*, 72(1), 32-68.
- Baylis, Adriane L. 2007. *Perceptions of audible nasal air emission in speakers with cleft palate: a comparative study of listener judgments*, PhD Dissertation. University of Minnesota.
- Chierchia, G. 1989. Anaphora and attitudes *de se*. In R. Bartsch, J. van Benthem and P. van Emde Boas (eds.), *Semantics and Contextual Expression*: 1-31. Dordrecht: Foris.
- Chomsky, N. (1981). *Lectures on Government and Binding*. Dordrecht: Foris.
- Cole, P., Hermon, G., & Huang, C. J. (2003). Long-distance Reflexives: the State of the Art. In *Syntax & Semantics: Long Distance Reflexives*, Ed. By Cole, Peter, Gabriella Hermon and C.-T. James Huang (Vol. 33). Elsevier Science and Technology Books.
- Cole, P., Hermon, G. and Huang, C.T. James (2006). "Long-Distance Anaphors: An Asian Perspective," Syncom Case 62b, Blackwell.
- Cole, P., Hermon, G., & Sung, L. (1990). Principles and parameters of long distance reflexives. *Linguistic Inquiry*, 21, 1-22.
- Cole, P., & Wang, C. (1996). Antecedents and blockers of long distance reflexives: the case of Chinese Ziji. *Linguistic Inquiry*, 27(3).
- Cowart, W. (1997). *Experimental Syntax: Applying Objective Methods to Sentence Judgments*. Thousand Oaks, CA: Sage Publications.
- Engen, T. 1971. *Psychophysics II. Scaling methods*. In Kling, J.W. and Riggs, L.A. (eds), "Woodworth and Schlosberg's Experimental Psychology." Holt, Rinehart and Winston, New York: 47-86.
- Hasegawa, H. (2005). Reflexive binding as Agreement and its interactions with the Phase System. In *the world of Linguistic Research: A Festschrift for Kinsuke Hasegawa on the Occasion of His Seventieth Birthday*, ed. Noriko Imanishi et al., (pp. 53-69). Tokyo, Japan.
- Hicks, G. (2009). *The derivation of anaphoric relations*. Amsterdam: John Benjamins Publishing Company.
- Hiraiwa, K. (2001). Multiple agree and the defective intervention constraint in Japanese. *MIT Working Papers in Linguistics*, 40, 67-80.
- Katada, F. (1991). The LF Representation of Anaphors. *Linguistic Inquiry*, 22(2), 287-313.
- Linn, M. (1988). The Origin and Development of the Iron Range Dialect in Northern Minnesota. *Studia Posnaniensia*, 21, 75-87.
- Sirjamaki, J. (1965). The People of the Mesabi Range. In *Selection from "Minnesota History": A Fiftieth Anniversary Anthology* Minnesota: Minnesota Historical Society. 261-271.
- Underwood, G. (1981). *The Dialect of the Mesabi Iron Range* (Vol. 67). PADS.

