

- Lieber, Rochelle. 1980. On the organization of the lexicon. Doctoral dissertation, MIT, Cambridge, MA.
- Mohri, Mehryar, and Mark-Jan Nederhof. 2001. Regular approximation of context-free grammars through transformation. In *Robustness in language and speech technology*, ed. by Jean-Claude Junqua and Gertjan van Noord, 153–163. Dordrecht: Kluwer.
- Moore, Gordon. 1965. Cramming more components onto integrated circuits. *Electronics* 38:114–117.
- Nettle, David. 1995. Segmental inventory size, word length, and communicative efficiency. *Linguistics* 33:359–367.
- Rissanen, Jorma, and Eric Ristad. 1994. Language acquisition in the MDL framework. In *Language computations*, ed. by Eric Ristad, 149–166. Providence, RI: American Mathematical Society.
- Solomonoff, Ray J. 1960. A preliminary report on a general theory of inductive inference. Report ZTB-138. Cambridge, MA: Zator Co.
- Swingley, Daniel. 2003. Phonetic detail in the developing lexicon. *Language and Speech* 46:265–294.
- Whitney, William Dwight. 1879. *Sanskrit grammar*. Oxford: Oxford University Press.
- Yip, Moira. 1995. Repetition and its avoidance: The case of Javanese. In *Proceedings of the 1995 Southwestern Optimality Theory Workshop*, ed. by Keiichiro Suzuki and Dirk Elzinga, 238–263. Tucson: University of Arizona, Department of Linguistics.

NEW EVIDENCE FOR THE
STRUCTURAL REALIZATION OF
THE IMPLICIT EXTERNAL
ARGUMENT IN
NOMINALIZATIONS

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1 Implicit External Arguments in Nominalizations

The crosslinguistic optionality of realizing external arguments in nominalizations has led many to conclude that they are not arguments and that when implicit they are not syntactically realized (for a variety of related views, see Williams 1987, Dowty 1989, Grimshaw 1990, Kratzer 1996, Engelhardt 2000, Alexiadou 2001, Culicover and Jackendoff 2001). Since only arguments can be structurally realized when covert, a decisive argument in favor of the structural realization of the implicit agent makes a particularly strong case for its status as an argument. While the implicit agent in nouns and nominalizations has been studied extensively, a firm conclusion still seems to be pending, owing, to a significant extent, to disagreement regarding the syntactic

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status of the diagnostics that have been used.¹ In support of previous claims for a structurally realized implicit agent (Roeper 1987, 1993, 2004, Giorgi and Longobardi 1991, Longobardi 2001, Sichel, to appear), I argue here that the agent also acts as an A-binder for null R-expressions and that these disjointness effects must have a syntactic source. Principle C effects with overt R-expressions, for example, are amenable to a pragmatic analysis along the lines of the Coreference Rule (Reinhart 1983, Grodzinsky and Reinhart 1993) and are therefore susceptible to the objection that the diagnostic does not necessarily track a syntactic relation. In contrast, I argue below that Principle C effects induced by an empty category must be syntactic. It follows that the implicit binder is structurally realized.

The argument developed here focuses on null impersonal subjects in Hebrew, in finite clauses embedded within nominalizations. The diagnostic capitalizes on the partial pro-drop paradigm attested in Hebrew, and in this respect the conclusions reached are construction-specific and language-particular. However, given the generality of the claim that external arguments in the verbal domain are never true arguments in the nominal domain, it is sufficient that some construction in some language shows clear syntactic effects, consistent with the view that this may not be a universal property of all nominals derived from transitive verbs (see Alexiadou, Anagnostopoulou, and Schäfer 2008 for recent discussion). Section 2 sets up the argument from Principle C by motivating the analysis of impersonal null subjects as null R-expressions. Section 3 shows that Principle C effects persist in nominalizations with implicit external arguments and argues for the structural representation of the latter as a pronominal empty category.

2 Null Impersonal Subjects as Null R-Expressions

Null impersonal subjects are found in finite clauses in fully pro-drop languages such as Spanish (Suñer 1983, Jaeggli 1986) and Italian (Cinque 1988), and also in Hebrew (Shlonsky 1997, Borer 1998). They induce 3rd person plural agreement on the verb, and in episodic contexts such as the following, they may receive an existential interpretation:

- (1) a. *Spanish*
 Lllaman a la puerta.
 call.PL at the door
 ‘Someone is calling at the door.’

¹ See Bhatt and Pancheva 2006 for recent discussion of implicit agents in nominalizations. The strongest arguments in favor are based on the observation that similar effects are absent in nominal passives (see Roeper 1987 for control, Safir 1987 for depictive modification, and Giorgi and Longobardi 1991, Longobardi 2001 for anaphor binding).

b. *Italian*

Prima, hanno telefonato; mi pareva tua sorella.
 earlier have.PL telephoned me seems your sister
 'There was a phone call earlier; I think it was your sister.'

c. *Hebrew*

Dafku ba-delet.
 knocked.M.PL at.the-door
 'Someone knocked at the door.'

Borer (1998) demonstrates that the distribution of interpretations associated with the null impersonal subject in Hebrew is similar to their distribution in Italian and Spanish. The existential interpretation is restricted to null subjects that are external arguments, and the generic interpretation is available for all argument types, including the null impersonal subjects of passives, unaccusatives, and raising predicates. The argument developed below focuses on the existential impersonal subject. Borer (1998) observes that when an existential null subject is embedded under another one, the result is grammatical only if the two existential interpretations are not identical.² The nonidentity associated with the existential null subject in the embedded clause sharply contrasts with obligatory control when the complement is an infinitive, (2b), on a par with English, (2c). Further examples of existential non-identity are given in (3).³

- (2) a. Omrim še-potxim et ha-ša'ar be-arba.
 say.M.PL that-open.M.PL ACC the-gate at-four
 'It is said that they're opening the gate at four.'
 b. Hexlitu [PRO liftoax et ha-ša'ar be-arba].
 decided.M.PL to.open ACC the-gate at-four
 c. It was decided [PRO to open the gate at four].

² Borer (1998) states the generalization in terms of disjointness, but that seems to be too strong since some referential overlap is possible. This is consistent with the view that only bound readings are ruled out when R-expressions are bound (Reinhart 1983). Campbell (1998) shows independently that Principle C excludes only full overlap, detectable with plural R-expressions. Principle C allows partial overlap, as shown in (ib).

- (i) Context: I went to talk to [the students in Jones's class]₁ yesterday.
 a. *They₁ told me that [the students]₁ had aced the exam.
 b. They₁ told me that [(only) the smart students]_{2∈1} had passed the exam.

In what follows, I use *nonidentity* to refer to the situation in (2a) and (3), where full overlap between the two existentials is impossible, and *coexistential* to refer to full identity between two existentials.

³ The nonidentity judgment here and throughout relies on a true existential reading of both positions. Generic readings will allow identity for interpretive reasons that may have little to do with structural position. First person plural interpretations are considered a subspecies of the generic reading and are similarly ignored. See Cinque 1988 for the claim that these two readings have the same basic syntactic distribution.

They in all the English translations should be read as "corporate *they*."

- (3) a. Ta'anu še-potxim et ha-ša'ar be-arba.
 claimed.M.PL that-open.M.PL ACC the-gate at-four
 'It was claimed that they're opening the gate at four.'
- b. Hodu še-sogrim et ha-maxsom
 admitted.M.PL that-close.M.PL ACC the-checkpoint
 ba-xag.
 on.the-holiday
 'It was admitted that they're closing the checkpoint for
 the holiday.'

While Spanish, Italian, and Hebrew all have the impersonal construction, the binding properties of the impersonal null subject are better observed in Hebrew, where referential 3rd person null subjects are severely restricted. In embedded clauses, referential 3rd person null subjects are excluded in the present tense (Borer 1989, Landau 2004), a restriction that isolates the existential reading and the nonidentity effect in the embedded present tense configurations in (2a) and (3). In fully pro-drop languages like Italian and Spanish, the nonidentity effect, though probably present, is typically masked by the availability of a definite null pronoun interpreted as bound by the matrix subject (Montalbetti 1984, Larson and Lujan 1989).

The bound reading is clearly absent in (2a) and (3), commensurate with the unavailability of a null definite pronoun in this context. Conдоравди (1989) and Borer (1998) propose that arbitrary null subjects in finite clauses are represented as "indefinite pro," a null pronominal counterpart to bare plurals in a language like English. The representation as a null bare plural accounts for the plural agreement and also captures the interpretive variability of the null subject as either generic or existential, on a par with overt bare plurals.

Building on this, I propose here that the null existential subject functions as an R-expression with respect to the binding theory. That characterizing null existential subjects as indefinite is insufficient is revealed by a closer look at their referential distribution. Assuming that the distribution of indefinites is constrained by the Novelty Condition (Heim 1982), each occurrence of an indefinite introduces a new discourse referent. This can explain the pattern above, since the null embedded subject is precluded, as an indefinite, from referring to the same entity as the previous NP, the matrix null indefinite. An analysis in terms of the Novelty Condition predicts, however, that the null impersonal subject should always resist an interpretation whereby it is identical to another existential antecedent, which I will call a *coexistential* interpretation. Alternatively, the nonidentity effect is structurally conditioned, because of a Principle C violation produced by A-binding by the null impersonal matrix subject. On this analysis, coexistential readings should be possible in the absence of c-command. The examples below favor the latter approach, since here neither null subject binds the other one, and the coexistential reading becomes possible (though not necessary). As a scenario for (4), imagine the

arrest of a group of activists waiting to be interrogated at a police station.⁴

- (4) a. Et Dina xakru ša'a ve-et Rina
 ACC Dina interrogated.M.PL hour and-ACC Rina
 xakru ša'atayim.
 interrogated.M.PL two.hours
 'Dina, they interrogated for one hour and Rina, they inter-
 rogated for two hours.'
- b. [Zot [še-xakru ota ša'a]] kivta
 the.one.F.SG that-interrogated.M.PL her hour hoped
 še-et ha-axerot yaxkeru paxot.
 that-ACC the-others FUT.interrogate.M.PL less
 'The one who they interrogated for an hour hoped that
 the others, they would interrogate less.'

The coordination and relative clause configurations in (4) allow a coexistential construal of the two null impersonal subjects. Coexistential construal in the absence of *c*-command is unexpected if the null impersonal subject is represented simply as a null indefinite pronoun, and it suggests that the null impersonal subject is classified as an *R*-expression for the binding theory, especially if overt existential bare plurals are also *R*-expressions. Overt bare plurals do appear to differ from singular indefinites in allowing coexistential readings in the absence of *c*-command.⁵ The unavailability of the coexistential reading in (5a) contrasts with the availability of coreference with an embedded pronoun in (5b), showing that the situation described is in principle compatible with a coexistential reading. While it may seem that repetitions of bare plurals are infelicitous, (5c) shows that it is possible to repeat a bare plural on the coexistential reading, provided that neither instance *c*-commands the other. This suggests a Principle C effect in (5a).⁶

- (5) a. Seventh graders wrote on the blackboard that seventh graders broke the window.
 b. Seventh graders wrote on the blackboard that they broke the window.
 c. If seventh graders broke the window on Tuesday, then on Wednesday seventh graders raked the yard.

The behavior of overt bare plurals further supports the *R*-expression analysis of null existential subjects. I assume for the argument

⁴ (4a) includes topicalization to neutralize VP-conjunction and a single subject.

⁵ Thanks to Edit Doron (pers. comm.) for suggesting this difference between ordinary indefinites and bare plurals.

⁶ As with null existentials, the effect in (5) is restricted to the existential reading.

to follow that null existential subjects are not null pronouns (they are not the null counterpart of “corporate *they*”) but bare plurals with the descriptive content suppressed. With respect to the binding theory, they are null R-expressions not bound by a quantificational operator, on a par with the null epithets discussed in Lasnik and Stowell 1991 and Huang 1991.⁷

3 Null R-Expressions and Principle C in Nominalizations

Impersonal subjects in finite clauses can be embedded within nominalizations, and for this reason they provide a good test for Principle C effects and the binding potential of the implicit external argument. To the extent that we find a Principle C violation in nominalizations with implicit agents, we gain strong support for their structural realization. Unlike binding phenomena previously used to diagnose the structural realization of the implicit agent (such as Principle A and C effects with overt anaphors and R-expressions, respectively; see Ross 1967, Longobardi 2001), Principle C effects induced by a null R-expression must have a syntactic source. This sort of violation will be immune to a pragmatic analysis in terms of the Coreference Rule (Reinhart 1983, Grodzinsky and Reinhart 1993), which says, roughly, “Use a bound variable if you intend to corefer.” The Coreference Rule excludes overt R-expressions in bound positions, most notably names and definite descriptions, but it doesn’t seem relevant to null bare plurals. This is because whatever sort of representation the Coreference Rule is understood to apply to, semantic or syntactic, it fails to correctly exclude them. Understood as applying to semantic representations, the Coreference Rule would be hard-pressed to rule out c-commanded null bare plurals since bare plurals introduce a variable into the semantic representation (Krifka 1987, Diesing 1992). If, however, the Coreference Rule were understood as applying to syntactic representations, the candidate that a null bare plural might plausibly be said to lose out to would be a null syntactic variable, on a par with the way that overt R-expressions lose out to pronouns. But that won’t do, because a null syntactic variable is an \bar{A} -bound empty category that independently would trigger a Strong Crossover violation. Therefore, the ungrammaticality of a null coexistential bare plural couldn’t be made to

⁷ Regarding interpretation, I assume that existential closure applies to each null subject separately. Coexistential readings are not “linked” readings in the sense of Lebeaux 1984 and Authier 1989, where multiple variables are unselectively bound by a single operator. It is crucial, for the Principle C analysis, that existential closure does not count as a syntactic operator in \bar{A} -position, since if it did, the matrix subject would be outside the domain of the embedded local \bar{A} -binder (Chomsky 1982). Overt and covert bare plurals differ from epithets in not allowing bound readings, a property I attribute to their indefiniteness. See Aoun and Choueiri 2000 for the claim that bound readings with epithets depend on the presence of extra pronominal material.

follow from its standing as a less good candidate, and the Principle C effect discussed in section 2 must have a structural, not pragmatic, source. This implies that the binder is a structurally realized DP, and it forms the basis of the argument for the structural representation of the implicit agent.

The following examples demonstrate nonidentity effects in a nominal context, when the impersonal finite clause (in the present tense, in keeping with the exclusion of null referential subjects) is embedded within a nominalization. When the nominalization contains an overt agent, the embedded subject is interpreted as existential in the episodic context given in (6). This shows that null impersonal subjects within nominalizations are identical to those embedded under verbs.

- (6) Ha-te'ana šel ha-morim [še-potxim et ha-ša'ar
the-claim of the-teachers that-open.M.PL ACC the-gate
be-arba] icbena otanu.
at-four annoyed us
'The teachers' claim that the gate will be opened at four
annoyed us.'

Turning now to nominalizations with implicit agents, note that in the absence of a discourse antecedent, the implicit agent is interpreted as "arbitrary," generic, or existential (similar to what we find with *the attempt to leave*, where attempter and leaver are interpreted existentially). In this respect, nominalizations containing an implicit agent are similar to clauses with a matrix impersonal subject, since both contain an arbitrary argument in a higher position that could potentially function as a binder. Nevertheless, a coexistential construal of the null embedded subject and the null agent of the nominalization is just as difficult as it is in (3). The clausal structures are repeated, for comparison, in (7a) and (8a); the nominalizations are given in (7b) and (8b).

- (7) a. Ta'anu še-potxim et ha-ša'ar be-arba.
claimed.M.PL that-open.M.PL ACC the-gate at-four
'It was claimed that they're opening the gate at four.'
b. Ha-te'ana [še-potxim et ha-ša'ar be-arba]
the-claim that-open.M.PL ACC the-gate at-four
icbena otanu.
annoyed us
'The claim that they're opening the gate at four annoyed
us.'
- (8) a. Hodu [še-sogrim et ha-maxsom
admitted.M.PL that-close.M.PL ACC the-checkpoint
ba-xag].
on.the-holiday
'It was admitted that they're closing the checkpoint for
the holiday.'

- b. Ha-hoda'a [še-sogrim et ha-maxsom]
 the-admission that-close.M.PL ACC the-checkpoint
 icbena otanu.
 annoyed us
 'The admission that they're closing the checkpoint annoyed us.'

The coexistential interpretation is blocked in (7b) and (8b), just as it is in (7a) and (8a). It appears, therefore, that the null existential subject, which functions as a null R-expression, induces a Principle C violation in nominalizations as well. Since a pragmatic explanation along the lines of the Coreference Rule can't be extended to these cases, (7b) and (8b) provide direct evidence for binding that is necessarily syntactic, and by extension, for the structural representation of the implicit argument.

A possible objection to this account might be that the preference for disjointness between two existential implicit arguments is merely pragmatic. That this cannot be correct is shown by comparing (7b) and (8b), in which the existential subject is embedded under a nominalization, with the reverse structures, in which the nominalization and the implicit agent are embedded under an existential subject. This pattern of embedding easily allows a coexistential construal of the implicit agent and the existential subject.

- (9) Ta'anu [še-[ha-ptixa šel ha-ša'ar] hayta
 claimed.M.PL that-the-opening of the-gate was
 mesukenet].
 dangerous
 'It was claimed that the opening of the gate was dangerous.'
- (10) Hodu [še-[ha-sgira šel ha-maxsom] hayta
 admitted.M.PL that-the-closing of the-checkpoint was
 meyuteret].
 unnecessary
 'It was admitted that the closing of the checkpoint was unnecessary.'

The possibility of a coexistential construal in (9)–(10) shows that the nonidentity effect observed throughout, and especially in (7) and (8), cannot simply be a pragmatic preference for nonidentity among multiple instances of null existential arguments. If it were, it shouldn't matter which existential constituent is high and which is low, and similar effects should obtain in (9) and (10). The asymmetry in the availability of the coexistential reading suggests, furthermore, that the null agent in nominalizations is not itself an R-expression. When we combine these results with the facts that it can serve as a binder for overt NPs (e.g., Giorgi and Longobardi 1991), can license depictive modifiers (Safir 1987), and can be identified by referential NPs that are non-c-commanding and nonlocal (Sichel, to appear), we see that the null agent in nominalizations must be represented as a null pronoun.

Consider finally the compatibility of the conclusion about the structural representation of the external argument with an independent test designed to diagnose the presence of Voice⁰, the head that introduces the external argument (Kratzer 1996, 2002). Building on Baker, Johnson, and Roberts 1989, Kratzer (2002) notes that adjectival passives in German are compatible with reflexive interpretation, while verbal passives are not, and she takes this to suggest that the external argument is present only in the latter. Alexiadou, Anagnostopoulou, and Schäfer (2008) apply this diagnostic to nominalizations to show that some nominalizations include the external argument while others do not. In German, for example, nominalizations with the *-ung* suffix are compatible with reflexive interpretation, like adjectival passives, and nominalizations marked with the *-en* suffix are not, like verbal passives.

- (11) a. die Anmeldung der Gäste (agent = / ≠ theme)
 the announcement the.GEN guests
 ‘the announcement of the guests’
 b. das Anmelden der Gäste (agent ≠ theme)
 the announcing the.GEN guests
 ‘the announcing of the guests’

This diagnostic is somewhat different from the one developed above. On one possible understanding of the test, the existential nature of the implicit agent leads to the interpretation ‘someone’s announcing of the guests’, which then triggers a scalar implicature that the guests did not introduce themselves. If so, the test may diagnose transitivity, but it isn’t clear that anything follows regarding structural representation. Nevertheless, the prediction is clear: to the extent that the implicit agent is structurally represented in Hebrew derived nominals, they are certainly transitive and should also exclude reflexive interpretation. This seems to be correct. The nominalization of ‘comb’ (12c) patterns with the verbal passive (12a) rather than the adjectival passive (12b).

- (12) a. Ha-yalda surka. (agent ≠ theme)
 the-girl combed.PASS.F.SG
 ‘The girl was combed.’
 b. Ha-yalda hayta mesoreket. (agent = / ≠ theme)
 the-girl was.F.SG combed.F.SG
 ‘The girl was combed.’
 c. Ha-seruk šel ha-yalda lakax ša’a. (agent ≠ theme)
 the-combing of the-girl took hour
 ‘The combing of the girl took an hour.’

References

- Alexiadou, Artemis. 2001. *Functional structure in nominals: Nominalization and ergativity*. Amsterdam: John Benjamins.
 Alexiadou, Artemis, Elena Anagnostopoulou, and Florian Schäfer. 2008. In *North East Linguistic Society (NELS) 38*, ed. by

- Muhammed Abdurrahman, Anisa Schardl, and Martin Walkow. Amherst: University of Massachusetts, Graduate Linguistic Student Association.
- Aoun, Joseph, and Lina Choueiri. 2000. Epithets. *Natural Language and Linguistic Theory* 18:1–39.
- Authier, J.-Marc. 1989. Arbitrary null objects and unselective binding. In *The null subject parameter*, ed. by Osvaldo Jaeggli and Ken Safir, 45–68. Dordrecht: Kluwer.
- Baker, Mark, Kyle Johnson, and Ian Roberts. 1989. Passive arguments raised. *Linguistic Inquiry* 20:219–251.
- Bhatt, Rajesh, and Roumyana Pancheva. 2006. Implicit arguments. In *The Blackwell companion to syntax*, vol. 2, ed. by Martin Everaert, Henk van Riemsdijk, Rob Goedemans, and Bart Hollebrandse, 554–584. Oxford: Blackwell.
- Borer, Hagit. 1989. Anaphoric Agr. In *The null subject parameter*, ed. by Osvaldo Jaeggli and Ken Safir, 69–110. Dordrecht: Kluwer.
- Borer, Hagit. 1998. Passive without theta-grids. In *Morphology and its relation to phonology and syntax*, ed. by Steven G. Lapointe, Diane K. Brentari, and Patrick M. Farrell, 60–99. Stanford, CA: CSLI Publications.
- Campbell, Richard. 1998. A null pronominal in the noun phrase. *Linguistic Inquiry* 29:153–160.
- Chomsky, Noam. 1982. *Some concepts and consequences of the theory of government and binding*. Cambridge, MA: MIT Press.
- Cinque, Guglielmo. 1988. On *si* constructions and the theory of *arb*. *Linguistic Inquiry* 19:521–582.
- Condoravdi, Cleo. 1989. Indefinite and generic pronouns. In *West Coast Conference on Formal Linguistics (WCCFL) 8*, ed. by E. Jane Fee and Katherine Hunt, 71–84. Stanford, CA: CSLI Publications.
- Culicover, Peter, and Ray Jackendoff. 2001. Control is not movement. *Linguistic Inquiry* 32:493–512.
- Diesing, Molly. 1992. Bare plural subjects and the derivation of logical representations. *Linguistic Inquiry* 23:353–380.
- Dowty, David. 1989. On the semantic content of the notion “thematic role.” In *Properties, types and meaning*. Vol. 2: *Semantic issues*, ed. by Gennaro Chierchia, Barbara H. Partee, and Raymond Turner, 69–129. Dordrecht: Kluwer.
- Engelhardt, Miriam. 2000. The projection of argument-taking nominals. *Natural Language and Linguistic Theory* 18:41–88.
- Giorgi, Alessandra, and Giuseppe Longobardi. 1991. *The syntax of noun phrases*. Cambridge: Cambridge University Press.
- Grimshaw, Jane. 1990. *Argument structure*. Cambridge, MA: MIT Press.
- Grodzinsky, Yosef, and Tanya Reinhart. 1993. The innateness of binding and coreference. *Linguistic Inquiry* 24:69–101.
- Heim, Irene. 1982. The semantics of definite and indefinite noun phrases. Doctoral dissertation, University of Massachusetts, Amherst.

- Huang, C.-T. James. 1991. Remarks on the status of the null object. In *Principles and parameters in comparative grammar*, ed. by Robert Freidin, 56–76. Cambridge, MA: MIT Press.
- Jaeggli, Osvaldo. 1986. Arbitrary pro and pronominals. *Natural Language and Linguistic Theory* 4:43–76.
- Kratzer, Angelika. 1996. Severing the external argument from the verb. In *Phrase structure and the lexicon*, ed. by Johan Rooryck and Laurie Zaring, 109–137. Dordrecht: Kluwer.
- Kratzer, Angelika. 2002. The event argument and the semantics of verbs. Available at <http://semanticsarchive.net/Archive/GU1NWM4Z/>.
- Krifka, Manfred. 1987. Nominal reference and temporal constitution: Towards a semantics of quantity. In *Studies in Discourse Representation Theory and the theory of generalized quantifiers*, ed. by Jeroen Groenendijk, Dick de Jongh, and Martin Stokhof, 153–173. Amsterdam: John Benjamins.
- Landau, Idan. 2004. The scale of finiteness and the calculus of control. *Natural Language and Linguistic Theory* 22:811–877.
- Larson, Richard K., and Marta Lujan. 1989. Emphatic pronouns. Ms., Stony Brook University, Stony Brook, NY, and University of Texas at Austin.
- Lasnik, Howard, and Tim Stowell. 1991. Weakest crossover. *Linguistic Inquiry* 22:687–720.
- Lebeaux, David. 1984. Anaphoric binding and the definition of PRO. In *North East Linguistic Society (NELS) 14*, ed. by Charles Jones and Peter Sells, 253–274. Amherst: University of Massachusetts, Graduate Linguistic Student Association.
- Longobardi, Giuseppe. 2001. The structure of DPs: Some principles, parameters, and problems. In *The handbook of contemporary syntactic theory*, ed. by Mark Baltin and Chris Collins, 562–604. Oxford: Blackwell.
- Montalbetti, Mario. 1984. After binding. Doctoral dissertation, MIT, Cambridge, MA.
- Reinhart, Tanya. 1983. *Anaphora and semantic interpretation*. Cambridge: Cambridge University Press.
- Roeper, Thomas. 1987. Implicit arguments and the head-complement relation. *Linguistic Inquiry* 18:267–310.
- Roeper, Thomas. 1993. Explicit syntax in the lexicon: The representation of nominalizations. In *Semantics and the lexicon*, ed. by James Pustejovsky, 185–220. Dordrecht: Kluwer.
- Roeper, Thomas. 2004. Chomsky's *Remarks* and the transformationalist hypothesis. In *Handbook of word formation*, ed. by Rochelle Lieber and Pavol Štekauer, 125–144. Dordrecht: Kluwer.
- Ross, John. 1967. On the cyclic nature of English pronominalization. In *To honor Roman Jakobson: Essays on the occasion of his seventieth birthday*, vol. 3, 1669–1682. The Hague: Mouton.
- Safir, Ken. 1987. The syntactic projection of lexical thematic structure. *Natural Language and Linguistic Theory* 5:561–601.

- Shlonsky, Ur. 1997. *Clause structure and word order in Hebrew and Arabic*. Oxford: Oxford University Press.
- Sichel, Ivy. To appear. Obligatory and non-obligatory control in DP. In *In the sphere of control*, ed. by Maria Polinsky and Norbert Hornstein. Cambridge: Cambridge University Press.
- Suñer, Margarita. 1983. pro_{arb}. *Linguistic Inquiry* 14:188–191.
- Williams, Edwin. 1987. Implicit arguments, the binding theory and control. *Natural Language and Linguistic Theory* 5:151–180.