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Duality of Control in Gerundive Complements of P[1]

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Abstract

Sentences like *They tricked him into believing them* and *They charged him with abandoning them* raise interesting issues for selection and control. We show that these two sentences exemplify two distinct classes, subsuming P-gerund constructions that are formed with seven different prepositions: Implicative vs. nonimplicative constructions. The first class displays a cluster of restrictions, both syntactic and semantic, which are absent from the second class: It resists partial control or embedded lexical subjects, and it bans object drop and movement of the P-gerund phrase. The existence of these two classes, as well as their empirical profiles, follow from Landau's (2015) theory of control and challenge alternative approaches.

Keywords: Control, predication, gerunds, implicative complements, causative

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1. Introduction

This article draws attention to a corner of English grammar that has received little documentation in the linguistic literature, and has been altogether ignored within generative grammar: Ditransitive constructions where the oblique PP consists of a preposition and a gerund complement clause.

(1) a. They talked Bill into committing a crime.
b. They warned Bill against committing a crime.

Such constructions have often fallen between the chairs; studies of ditransitive VPs tend to focus on nonclausal arguments, and studies of clausal complementation tend to focus on finite or infinitival clauses, not on gerunds, and certainly not on gerunds introduced by prepositions. Yet we will see that even in such a narrow corner one can discern patterns of a much broader generality. Far from being avoided, "non-canonical" data should be fully attended to by linguists seeking to validate their general hypotheses.

Examples (1a-b) both display object control; the reference of the understood subject of the gerund is *Bill*, not *they*. Such will be the character of the entire range of cases to be examined below, although I should note that English also provides for subject control in P-gerund constructions, whether transitive or not (e.g., *John revelled in listening to their stories*, *I am writing to formally inform you of leaving my position*). These are left out of the present investigation for no principled reason. As it turns out, some of the syntactic tests are inapplicable to them. Ultimately, we do not expect subject controlled gerunds to raise any special difficulties.[2]

As a necessary preliminary, observe that the P-gerund complementation frame is a special case of the more common P-DP frame. The latter, in fact, is more common and does not guarantee the former (Rudanko 1989).

(2) ✓*P+DP, *P-gerund*
a. John convinced Bill of the advantages of the project.
b. * John convinced Bill of taking part in the project.
c. The host treated his guest to a glass of port.
d. * The host treated his guest to drinking a glass of port.

[2] See Duffley 2014 for a description of these constructions in English.

It is far more difficult – perhaps impossible – to find the opposite pattern, where a gerund is available as a complement of P but a DP is not. This state of affairs suggests that gerunds and DPs are "close enough" for c-selection not to distinguish between them, but s-selection still does; presumably, the semantic spectrum of DPs subsumes that of gerunds, but not vice versa. These selectional differences deserve to be studied in their own right, but will not concern us here.

Instead, my focus will be on a hitherto unnoticed distinction, of a rather fundamental sort, between the complements in (1a) and (1b). The construction in (1a) is *causative*, and it induces a direct predication relation between the object and the gerund; hence, Bill is ascribed the property of committing a crime. Alongside *into*, this construction also occurs with *to*, *out of* and *from*. The construction in (1b) lacks a causative force and does not induce a similar predication relation. Alongside *against*, it also occurs with *of* and *with*. It will be shown that each of these two classes of constructions displays a characteristic cluster of syntactic and semantic properties. To shed light on this duality, I will adopt the Two-Tiered Theory of Control (TTC) of Landau 2015, in which the dual nature of control is a fundamental tenet.

The structure of this paper is as follows. Section 2 lays out the proposal: P-gerund constructions can be projected either inside a PredP small clause or as part of the VP-shell, accounting for (1a)-type and (1b)-type sentences, respectively. Section 3 describes the two classes in more detail, demonstrating that the causative construction yields implicative control (section 3.1) and the noncausative one yields nonimplicative control (section 3.2). Section 4 focuses on the different semantic types of the gerunds in the two constructions and their consequences: The implicative gerund denotes a property, resists partial control and disallows a lexical subject; the nonimplicative gerund denotes a proposition, and allows either partial control or a lexical subject. Section 5 examines specific predictions made by the two different structures assigned to the two constructions. It is shown that the presence of PredP inside the VP imposes certain syntactic restrictions: The matrix object cannot be dropped and the predicative PP cannot be fronted. The nonimplicative construction is free of these restrictions. Section 6 considers some broader implications of the present account, specifically as regards alternative approaches. Section 6.1 points out a challenge raised to a popular semantic analysis of control, whereby *all* controlled clauses are treated as property-denoting; section 6.2 discusses the limitations of corpus studies and Construction Grammar in detecting and explaining the patterns documented here. Section 7 concludes the paper.

2. The proposal

Control, as viewed in the TTC, operates through two mechanisms: Predication or logophoric anchoring. Each mechanism is associated with its characteristic syntax and semantics.

In predicative control, the clausal complement projects up to FinP.[3] PRO moves to [Spec,FinP] and is interpreted as a λ-abstractor over the subject's position, yielding a property of type <e,<s,t>>. This property is predicated of the individual denoted by the controller, as part of the lexical semantics of the matrix verb. "Control" in this scenario is nothing but the attribution of the complement property to the referent of the controller.

Meanwhile, in logophoric control the complement clause projects a CP layer on top of the predicative FinP. C introduces a logophoric tuple (<world,time,author,addressee>) that is anchored to the speech/thought event of the matrix clause. It also projects one of its individual coordinates as *pro* in its specifier, denoting the doxastic counterpart of the referent of the controller. This *pro* is syntactically bound by the controller, and furthermore, saturates the predicative FinP, delivering a propositional complement of type <s,t>. "Control" in this scenario is achieved in two steps: first, the coordinate *pro* saturates the FinP-property; second, this *pro* is construed as the doxastic counterpart of the referent of the controller via the intensional semantics of the matrix verb (see Landau 2015 for the explicit exposition).

The two types of complements are schematized below.

(3) a. Predicative clause: $[_{FinP}\ PRO_i\ Fin\ [_{TP}\ \sout{PRO}_i\ \ldots\ ]]$
b. Propositional clause: $[_{CP}\ pro\ C_{+log}\ [_{FinP}\ PRO_i\ Fin\ [_{TP}\ \sout{PRO}_i\ \ldots\ ]]]$

Predicative control is found with aspectual, modal and implicative verbs, as well as evaluative adjectives. Logophoric control is found with desiderative, propositional, factive and interrogative verbs. The pair below illustrates the distinction with infinitival complements.

(4) *Predicative control*
a. They coerced Bill to sign the contract. *implicative*

[3] "Up to FinP" implies that predicative complements may in fact be smaller, e.g. restructuring complements that only project to the VP level.

Logophoric control

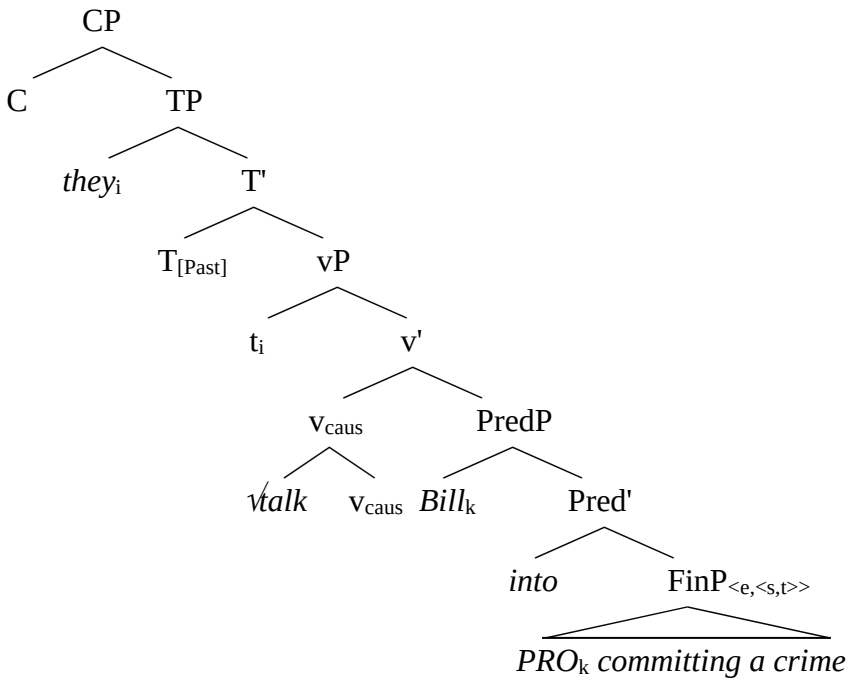
b. They urged Bill to sign the contract. *desiderative*

A hallmark of implicative verbs is that they entail the truth of their complements; thus, (4a) but not (4b) entails that Bill signed the contrast. This is entirely parallel to what we observe in the pair in (1): (1a) but not (1b) entails that Bill committed a crime. Note that (1a) and (4a) share another property: Both are causative. I return to this aspect below.

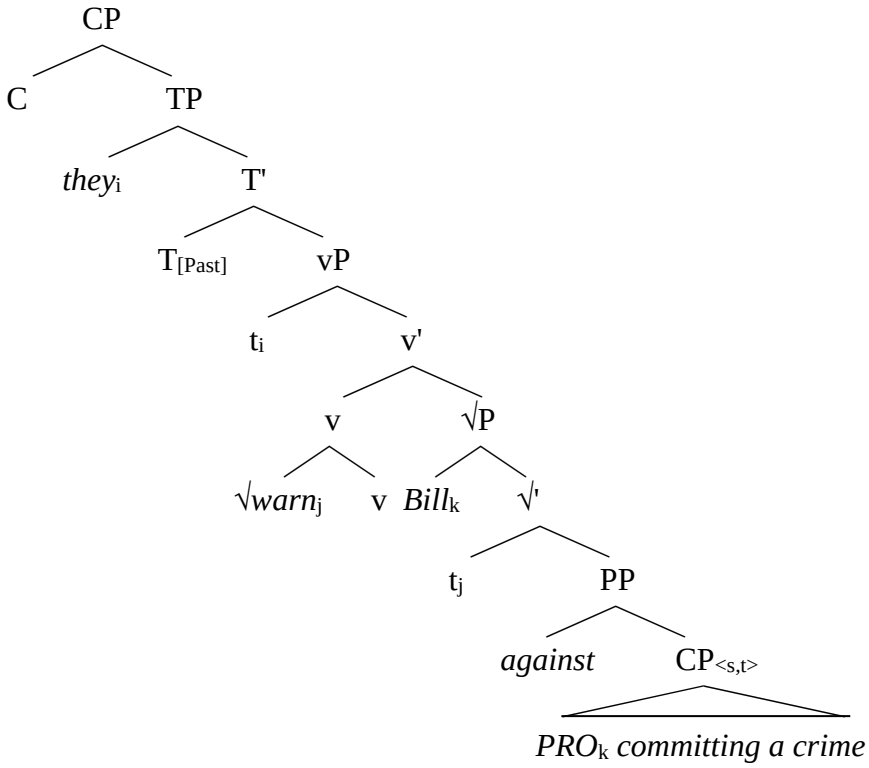
The proposal for P-gerund constructions is, therefore, straightforward: They display the same duality of mechanism that more familiar constructions of complement control do. And this duality has testable consequences, which are demonstrated in the sections to come, not only for *into*-gerund and *against*-gerund constructions, but for the entire classes for which they stand. Thus, we will be able to discern common grammatical *types* underneath constructions that involve different prepositions and, superficially, quite disparate semantic relations.

Putting together the different pieces, these are the two structures I propose for implicative (causative, predicative) P-gerund constructions and for nonimplicative (logophoric) ones. For the causative construction, I assume that the lexical root is directly merged with the causative light v and interpreted as an event modifier (e.g., *cause by talking*), following the treatment of "manner incorporation" in Marantz 2005, Folly and Harley 2007 and Alexiadou, Martin and Schäfer 2017; alternatively, it could be merged as a v'-adjunct (Folli and Harley 2019), like other modifiers, and undergo subsequent m-nerger with light v.

(5) They talked Bill into committing a crime.



(6) They warned Bill against committing a crime.



Syntactically, two differences between (5) and (6) will play a central role below. First, the controller DP (*Bill*) is a subject of a PredP in the former but a VP-shell specifier in

the latter; second, the unit [P gerund] is only a maximal projection in (6), not in (5). In section 5 I discuss syntactic consequences of these differences.

3. Two classes of prepositional gerund control

We now turn to a closer description of the two classes of P-gerund constructions: Implicative (section 3.1) and nonimplicative (section 3.2) constructions. Particular attention will be given to the former class in order to establish its causative character, which underlies its main features.

3.1 Causative-implicative P-gerund complements

Four prepositions combine with gerundive complements to yield implicative meanings: *to, into, out of* and *from*. While the first two produce positive implicatives, the second two produce negative ones. Semantically, they form two polar pairs (*into-out of* and *to-from*).

(7) a. They confined the prisoner **to** eating dog food.
b. His teammates scared him **into** thinking the bus was about to crash.
c. John talked Sue **out of** accepting a bribe.
d. Sue restrained John **from** making a long statement.

Under a positive implicative verb, the complement is entailed, while negative implicative verbs entail the negation of the complement (Karttunen 1971). When the matrix clause itself is negated, the entailment disappears, indicating that the complement is asserted, not presupposed.

(8) a. They confined the prisoner to eating dog food.
→ *The prisoner ate dog food*
b. They didn't confine the prisoner to eating dog food.
↛ {*The prisoner ate dog food, The prisoner didn't eat dog food*}
c. John talked Sue out of accepting a bribe.
→ *Sue didn't accept a bribe*
d. John didn't talk Sue out of accepting a bribe.
↛ {*Sue accepted a bribe, Sue didn't accept a bribe*}

It is known that when a strong implicative verb is negated, the complement entailment is reversed. Thus, *John didn't manage to solve the exercise* entails that John didn't solve

the exercise. With weak implicative verbs, however, the entailment simply disappears (see Landau 2000:77): *John didn't force Bill to solve the exercise* neither entails that Bill solved the exercise nor that he didn't. This seems to be a general property of causative implicatives, extending to the present four classes in (7), as seen in (8b,d).

The literature on *into*-gerunds recognized their implicative character (Rudanko 2003:267, 2005:172, 2006:317). Kim and Davis (2015:60) cite (9a-b) as evidence.

(9) a. Mary fooled him into wearing the clothes. (# But he didn't wear the clothes.)
b. Mary coaxed students into violating the rules. (# But they didn't violate the rules.)

The productivity of the causative P-gerund construction greatly varies across the four prepositions. The following lists are based on Rudanko 1989; they are given as illustration and are far from exhaustive.

(10) a. V: [__ DP *to* gerund]
confine, set, command, drive, restrict, limit, constrain…
b. V: [__ DP *into* gerund]
talk, laugh, coax, intimidate, force, scare, fool, deceive, trick, coerce…
c. V: [__ DP *out of* gerund]
talk, argue, frighten, intimidate, terrify…
d. V: [__ DP *from* gerund]
detain, deter, dissuade, inhibit, withhold, check, disturb…

The *from*-gerund construction also occurs with Raising to Object verbs like *prevent, ban, stop,* and *keep* (Postal 1974, Landau 2002, Baltin 2009); I exclude them from the present discussion as they differ from the control constructions in a number of ways, not directly relevant to us.

The *into*-gerund construction has received considerable attention in the descriptive and diachronic literature but very little in the way of formal analysis (see Hunston and Francis 2000, Gries and Stefanowitsch 2004, Rudanko 1989, 2005, 2006, 2011, 2012, Wulff, Stefanowitsch and Gries 2007, Kim and Lee 2013, Kim and Davies 2015). This literature has documented a continual increase in the frequency of the construction over the past 200 years, as well as nuanced lexical differences between the verbs taking it in British vs. American English. The most extensive study to date is Kim and Davies 2015, whose findings I follow below.

Kim and Davies analyzed over 20,000 tokens of the construction from both British and American English corpora. Although it most frequently occurs with a relatively small group of verbs (*talk, trick, fool, force, coerce, mislead, delude, bully, pressure*), it is found with hundreds of other verbs. Quite evidently, speakers frequently use it in innovative ways. (11a-b) are from Kim and Davies (2015:65-66). (11c), found on the internet, shows that even proper names can be used as verbs in this context.

(11) a. I think Burger King is trying to depress me into getting fat.
b. He'd been cuddled into doing some work experience by a social worker.
c. You Donald Trumped him into being the most talked about thing in the game.

Although many of the verbs participating in the construction fall into consistent lexical subclasses (means of deception, exerting force, arousing fear etc.; see Rudanko 2011), Kim and Davies observe that "there seem to be no limits on the creativity of speakers" (p. 12).[4] The question of how speakers extend the use of the *into*-gerund construction to novel verbs, and what constrains this process, is an important topic for the study of language change, but I will have nothing to say about it here. Rather, my focus will be on the shared syntactic properties that characterize any member in this class as well as in the other three causative classes (*to/out of/from*-gerund).

Two pieces of evidence suggest that these constructions are indeed grammatically causative. First, insofar as the matrix verb accepts a non-agentive subject, it can co-occur with the P-gerund complement. Causative constructions famously do not select for a [±human] feature on the Causer ((11a) is from Kim and Davies 2015:55).

(11) a. Love at first sight had coerced him **into** marrying a complete stranger.
b. Depression drove him **to** committing suicide.
c. Just the thought of these grizzly bears intimidated Bill **out of** taking the trail through the woods.

[4] This is a bit overstated since, by Kim and Davies' own account (p. 5), purely intransitive verbs resist the construction.

i. * John ran Bill into stopping the crime.
ii. * John cried Bill into singing the song.

Kim and Davies do not elaborate on what they mean by "purely intransitive" (clearly, surface transitivity is not relevant, given *John ran the horse into the woods* and *John cried a most painful cry*), so the nature of the restriction is not obvious.

d. The long line-ups and wait times deterred him **from** voting in Monday's municipal election.

Secondly, the characteristic scope ambiguity with *almost* – modifying either the result or the causing event – is attested in these constructions as well (12a)/(13a). The continuations in (12b)/(13b) target the high scope, cause-modifying reading, while those in (12c)/(13c) target the low scope, result-modifying reading.

(12) a. John almost talked Mary into joining him for the trip, but…
b. … he had a change of heart at the last moment and decided not to approach her.
c. … she eventually decided to stay home.

(13) a. Michael almost dissuaded Sue from selling her old car, but…
b. … at the last moment he realized it's none of his business, so he shut up.
c. … after their conversation, she gave it another thought and decided to go ahead and sell it.

Structure (5), proposed for these constructions, implies that the causative-implicative meaning is "constructional"; that is, it does not inhere in the verbal root itself but rather arises from the functional skeleton in which it is embedded. Striking confirmation for this view comes from verbs that alternate between a V-infinitive frame and a V-P-gerund frame. Although the alternation is semantically neutral with some of these verbs, it is not so with others. In particular, the implicative sense is obligatory with P-gerund complements; the infinitival variants may receive an irrealis interpretation.

(14) a. John coaxed Sue into making a rash statement.
→ *Sue made a rash statement*
b. John coaxed Sue to make a rash statement.
↛ *Sue made a rash statement*

(Rudanko 1989:130)

(15) a. # They bribed her into spying on the prince, but she refused to do so.
b. They bribed her to spy on the prince, but she refused to do so.

(Kim and Davies 2015:71)

One may be tempted to attribute the implicative sense solely to the preposition *into*, but this cannot be true, for that sense depends on which verb it combines with (Kim and Davies 2015:60).

(16) Mary asked/urged him into the room, but he didn't enter the room.

Likewise, although *from*-gerund complements are nearly always implicative, sometimes they are not.

(17) She discouraged/forbade Paul from raising the issue, but nonetheless he did.

This is yet another indication that the implicative entailment is not written into the denotation of the preposition.

Instead, I propose that the implicative sense arises from the presence of PredP in (5). In principle, each one of the prepositions *to/into/out of/from* can project such a PredP, and when it does, it no longer conveys a spatial relation, but some kind of an incohative sense (becoming X or becoming not-X). The prepositional head mediates direct predication between its two argument – the DP and the gerund, yielding the implicative entailment. Selection or non-selection for PredP is what distinguishes implicative verbs like *dissuade* from nonimplicative ones like *discourage*. Without PredP, no direct predication between the two objects applies. Instead, an indirect, intensional relation is established via the semantics of the verb itself. This furnishes a semantic argument for the existence of PredP in the structure. In section 5 I adduce independent syntactic arguments to the same effect.

Before proceeding, let me mention one type of P-gerund construction that superficially seems to belong with the verb classes in (10), but upon closer inspection turns out to be irrelevant: These are *for*-gerund constructions.

(18) a. Peter thanked/praised Justin for eating all his dinner.
b. I love my new wheels, and I resent winter for making me put them away.
c. Have you ever sent a steak back for being cooked wrong?

As argued extensively in Green 2018, 2019 and Landau to appear, *for*-gerunds are adjuncts, not complements; specifically, adjuncts that specify the justification for the matrix event. This is true even with verbs like *thank* and *praise*, as seen by the fact that the *for*-gerund can be spared by VP-ellipsis (Green 2018:168).

(19) Peter thanked/praised Justin for eating all of his dinner, and Jill did so for cleaning up after himself.

This is clearly impossible with the causative-implicative constructions examined here.

(20) a. * Mom confined Tom to watching educational shows and Dad did so to reading pious children's books.
b. * Jim talked me out of accepting the offer and Bill did so out of even responding to their email.

For-gerund adjuncts are therefore not discussed in this paper.

3.2 Nonimplicative P-gerund complements

Three prepositions combine with gerundive complements to yield nonimplicative meanings: *of*, *with* and *against*.

(21) a. Mary accused John **of** stealing the formulae.
↛ *John stole the formulae*
b. They charged Mandela **with** being a Communist.
↛ *Mandela was a Communist*
d. They warned my grandma **against** breaking the law.
↛ *My grandma broke the law*

There are far fewer nonimplicative P-gerund complements than implicative ones, and none of the sublcasses of the former type appears to be lexically innovative. The following classification of verbs according to the preposition they select draws on Rudanko 1989, with my own extensions; the lists are not exhaustive.

(22) a. V: [__ DP *of* gerund]
accuse, convict, indict, suspect, envy, warn…
b. V: [__ DP *with* gerund]
charge, entrust, associate, credit, threaten, task, familiarize, reproach, upbraid, burden…
c. V: [__ DP *against* gerund]
advise, caution, warn, counsel…

The small size of these classes makes it difficult to state solid semantic generalizations. Some of the verbs (*accuse, convict, suspect, reproach*) select complements that are held as true in the attitude holder's past, thus invoking an epistemic attitude. Others (*warn, entrust, task, advise, caution, counsel*) select complements that represent the attitude

holder's normative preferences, thus invoking a deontic attitude. Either way, no direct predication applies between the direct object and the gerund, hence no implicative entailment is generated. For example, a sentence like (21a) implies that John has the property of stealing the formulae in all the worlds that conform to Mary's accusations (i.e., where Mary's accusations hold true). This, of course, implies nothing as regards John's guilt in the actual world.[5]

4. Property vs. propositional gerunds

A major debate within the literature on control concerns the status of subjectless (or PRO-containing) complements: Do they denote propositions or properties? Traditionally, the propositional analysis has been favored in syntactically oriented treatments while the property analysis has been favored in semantically oriented ones.[6] A number of works, however, assumed a duality of mechanism that can be naturally expressed as the property-proposition opposition (Williams 1992, Wurmbrand 2002, Grano 2015). Landau 2015, 2017, to appear continues the latter strand, supplementing it with the specific syntactic proposal that predicative complements project up to FinP and propositional ones project higher to the CP level, as depicted in (3). Within the present context, two empirical consequences of that dual system follow. First, implicative P-gerund complements should resist partial control and nonimplicative ones should allow it. Second, implicative P-gerund complements should reject a lexical subject and nonimplicative ones should accept it. Both are tested and confirmed in sections 4.1 and 4.2, respectively. In section 6.1 I return to consider the implications of these findings for the theoretical debate on the semantic type of controlled complements.

4.1 Exhaustive vs. partial control

Since Landau 2000, it is known that implicative verbs induce exhaustive control (EC) in their complement while attitude verbs allow partial control (PC).[7] A standard contrast

[5] Verbs of "defense" may also take *against*-gerunds (*protect, defend, guard, shield, safeguard, insure, secure, immunize, inoculate*), but do not require an attitude-holder (or even a human) subject. Their status is not entirely clear to me; they may well belong to the causative-implicative class, although the implicative sense of e.g. *protect/guard* is possibly defeasible. Further testing is no doubt needed. Note that the causative force does not inhere in the preposition itself, which is why we find not only *against* but also *into* and *from* in both classes (see (16)-(17)).

[6] For propositional analyses, see Chomsky 1980b, 1981, Manzini 1983, Bouchard 1984, Koster 1984, Borer 1989, Sag and Pollard 1991, Vanden Wyngaerd 1994, Landau 2000. For property analyses, see Thomason 1974, Chierchia 1984, 1990, Dowty 1985, Percus and Sauerland 2003, von Stechow 2003, Anand 2006, Stephenson 2010, Pearson 2013, 2016, 2018.

[7] See Landau 2013:155-172 for a review of PC, and Landau 2016, Pitteroff et al. 2017, Authier and Reed 2018 and Matsuda 2019 for recent developments.

with infinitival complements is the following. While *remember* is an implicative EC verb, *plan* is a nonimplicative PC verb. Correspondingly, the subject of *to gather* can be understood as "John plus others" in (23b) but not in (23a). Note that PC requires context to supply the reference of the "others", which is here facilitated by the introducing clause "We were happy that…".

(23) a. * We were happy that John remembered to gather this morning. *Implicative*
b. We were happy that John planned to gather this morning. *Nonimplicative*

The EC-PC distinction is visible in gerundive complements as well.

(24) a. * We regret that John avoided gathering this morning. *implicative*
b. We were happy that John considered gathering this morning. *nonimplicative*

Correspondingly, we expect the implicative P-gerund constructions to resist PC and the nonimplicative ones to permit it. The facts bear out this expectation. None of the four types of implicative P-gerund complements allow PC.

(25) a. * They limited the chair to gathering during weekends only.
b. * Mary asked us to coerce John into gathering at the earliest time possible.
c. * John realized it was her mom who talked Mary out of reconciling this time.
d. * I think that his sudden flu inhibited our chair from meeting together today.

In contrast, nonimplicative P-gerund complements allow PC, as shown in the following naturally occurring examples (from the internet).

(26) a. Caruso said police wrongly accused him of gathering without a permit.
b. They accused him of meeting at an unregistered venue.
c. The court charged her with gathering and colluding with the intent to harm the state.
d. As the Button Moulder is stil trying to get Peer to give him a list of his sins and again threatens him with meeting 'at the last cross-road'…
e. Her government warned her against gathering publicly after she complained about their insufficient attempts at security.

The EC-PC distinction reflects two mechanisms of control – *predicative* vs. *logophoric* control (Landau 2015). In implicative-causative constructions, OC is obtained by direct

predication between the matrix direct object and the PP predicate. Because predication cannot be "partial", PC is excluded (cf. standard predication, *John worked as a crew *(member)*). In logophoric control, however, there is no direct semantic relation between the controller and PRO. Rather, PRO is associated with a doxastic counterpart of the controller's referent, and this association is looser, allowing a partial interpretation.[8]

Landau (2015) further observes that not only PC but also control *shift* is restricted to logophoric control; predicative control, in contrast, obeys strict locality and disallows a shift from object to subject control. Empirically, this distinction is less robust because control shift is further constrained by subtle lexical factors and is not a pervasive feature of logophoric control as such. Nonetheless, *if* contrasts emerge, they confirm this prediction: (27a-b) (from the internet) display (shifted) subject control across an object in nonimplicative P-gerund constructions. (27c-d) show this to be impossible with implicative constructions, even when conditions most favorable to control shift are granted (object-directed authority relations and non-agentive complements).

(27) a. Naija Music Superstar and hitmaker Tekno has landed himself in serious trouble as a Zambian woman$_i$ accused him of [PRO$_i$ getting pregnant and suffering because of a song he did in 2016].

b. The prosecutor$_i$ had threatened him with [PRO$_i$ filing charges against him for theft].

c. * My son$_i$ literally coerced me into [PRO$_i$ being allowed to binge all night].

d. * She$_i$ dissuaded her mom from [PRO$_i$ being punished].

In Landau (2015, 2017, to appear), the EC-PC contrast and the (im)possibility of control shift reflect a fundamental duality of control clauses: property-denoting clauses vs. logophorically-anchored, propositional clauses. This distinction in semantic types has further consequences, to which we turn now.

4.2 Tolerance to lexical subjects

Grano (2015:19) observed that EC predicates cannot take complements, finite or nonfinite, with lexical subjects. In truth, EC verbs like *try* and *manage* do appear with such complements, but only under a special coercion – specifically, causative coercion (e.g., *How could I possibly flirt with him and manage for him to fall in love with me?*).

[8] On Matsuda's (2019) appealing account, PRO in attitude complements incorporates an indexical element (shifted to the reported context); it is the associative semantics of indexical elements (i.e., 'we' means "I+others", 'you$_{PL}$' means "you$_{SG}$+others") that underlies PC.

Those EC verbs that cannot be so coerced strongly resist a lexical subject in their complement.

(28) a. * She forgot (for) him to turn off the heating.
b. * She condescended (for) him to listen to our complaints.

On Landau's TTC, this fact immediately follows from the predicative nature of the complement. EC verbs s-select a predicate; an embedded lexical subject would turn the complement into a proposition, resulting in a semantic type clash.

By contrast, PC predicates employ logophoric control, where the complement is propositional. This is achieved by saturating the PRO-infinitive with a logophoric *pro* – the so called *de se* center (see Landau 2015 for details). One implication is that from a semantic point of view, nothing should rule out an embedded lexical subject; the complement anyway denotes a proposition. This is indeed the case. Although nonfinite clauses are less hospitable to lexical subjects, these may occur under PC verbs – either in nonfinite or in finite complements.

(29) a. George hoped to win / George hoped [for Ray to win]
b. George claimed to be healthy / George claimed [that Ray was healthy]

Extending this logic to adjunct control, Landau (to appear) shows that nonfinite adjuncts also split according to the property-proposition divide: Those that are necessarily predicative resist lexical subjects while those that are logophoric accept them. A number of other grammatical properties cluster around that same distinction, which is illustrated below with two types of adjuncts.

(30) a. The sofa folds out to make a bed. *Result clause*
b. * The sofa folds out [for the bed to be unnecessary].

(31) a. Jane stepped back (in order) to get a better view. *Rationale clause*
b. Jane stepped back (in order) [for Bill to get a better view].

With this background in mind, let us consider the tolerance of P-gerund complements to lexical subjects. The only study where this question is addressed, even if briefly, is Kim and Davies 2015:59, where it is observed that *into-gerund* complements resist lexical subjects (note that the pronominal subject of the gerund is excluded regardless of its reference, hence this is not a case of obviation).

(32) He fooled Sam into [(*him/*his) believing he was fast].

In fact, the observation holds true for the other three types of causative-implicative complements.

(33) a. They confined Beth to [(*her son'(s)) eating dog food].
c. John talked Sue's partner out of [(*her) accepting a bribe].
d. John restrained Sue from [(*her candidate('s)) making a long statement].

Intuitively, what goes wrong in (32)-(33) is that the attempted indirect causal chains are not supported by the inherent semantics of the construction. It is the referent of the direct object itself that must come to bear the resulting property (expressed by the gerund) following the causing event. This is, of course, a hallmark of direct predication.

In contrast, nonimplicative P-gerund complements readily occur with lexical subjects (all the examples below were found on the internet).

(34) a. He accused me **of** [him being suspended].
b. No one would suspect him **of** [anything being wrong].
c. He credits us **with** [him playing more solo piano].
d. He used to threaten me **with** [him not seeing the kids].
e. I'd caution you **against** [anyone taking this too far for now].
f. The Police would not be reporting him for shooting Starlings without a license on this occasion, but warned him **against** [it happening again].

The same, ultimately semantic, reason underlies the availability of PC and the availability of lexical subjects in these complements; namely, they denote propositions. Failure to recognize this may lead to unnecessary stipulations. Thus, considering the theoretical implications of (32), Kim and Davies (2015:59) conclude that "the verb also needs to have access to the prepositional object, the gerundive (*ger*) phrase, which is not accessible within the verb's local domain. That is, the c-selection… information of the verb *fool* here thus needs to include the nonlocal VP[*ger*] too, which makes the construction syntactically peculiar".

None of this peculiar, nonlocal c-selection is needed, though. First, note that it is far from obvious that subjectless gerunds and ACC-/GEN-subject gerunds are categorially

distinct; the absence or presence of an internal subject should not be externally detectable on the categorial label of the head of the gerund.[9]

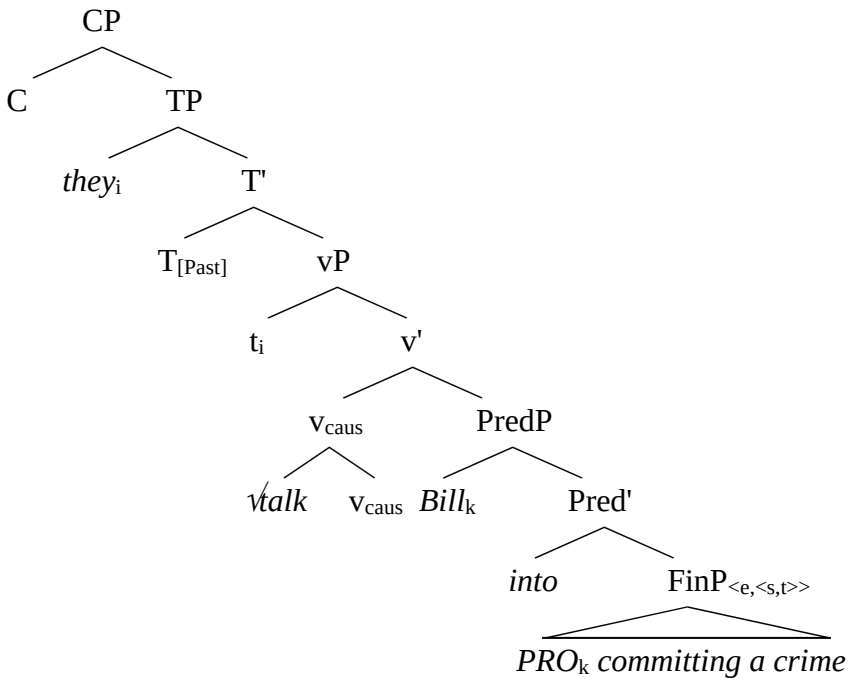
Second, assuming for the sake of the argument that it is visible, c-selection does not appear to provide real insight to the relevant contrast. Why is it that *into*-gerunds must be subjectless and *with*-gerunds need not be, and not the other way round? The present account, which appeals to s-selection, offers a principled answer: *Into*-gerunds function as predicates that form a PredP projection together with the direct object. It is their semantic type (<e,<s,t>>) that clashes with a lexical subject. Strictly speaking, these predicates are not selected by the verb at all, hence nonlocal selection is not invoked. Rather, the entire PredP is selected, being the complement of the causative verb. Nonimplicative verbs, by contrast, select both their direct object and the gerund-containing PP. The latter is s-selected as a proposition, hence a lexical subject is allowed in it. This account has the further advantage of explaining the EC-PC contrast, as shown in section 4.1, on which the c-selection account is obviously silent.

5 Syntactic differences

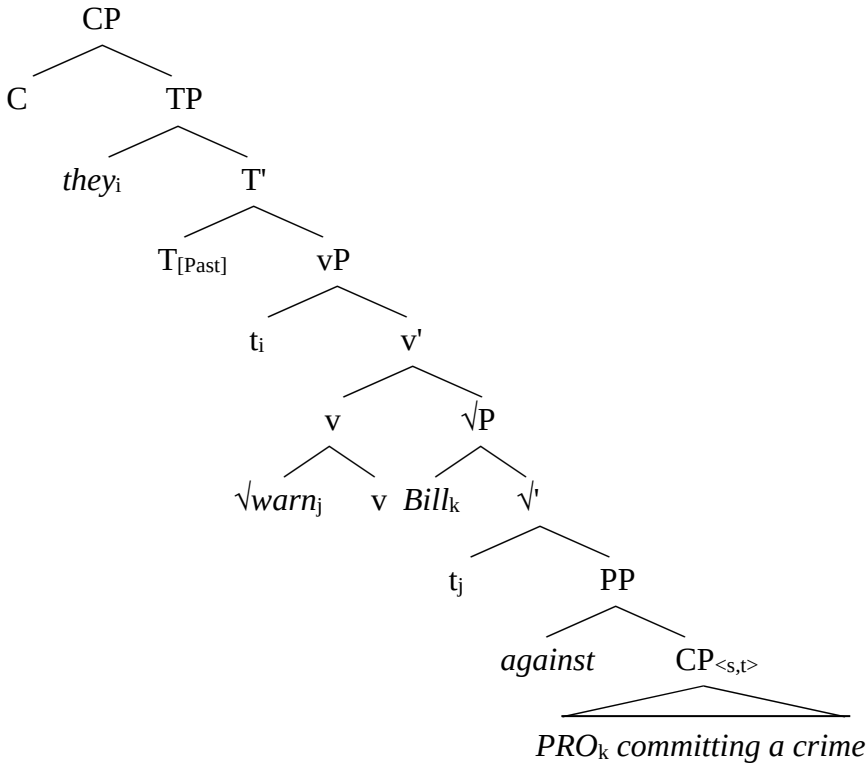
The structures proposed for the two P-gerund constructions are repeated below.

[9] C-selection for DPs never specifies that property. Thus, there are no verbs that may take the noun *house* as complement but not the noun *his house*, or vice versa.

(35) They talked Bill into committing a crime.



(36) They warned Bill against committing a crime.



The critical difference between these two structures concerns the status of the two arguments. In (35), the postverbal DP is a subject of a PredP projection, while in (36)

it is a specifier in a VP-shell; this difference, of course, reflects the semantic distinction between a causee (*not* an argument of the verb) and a direct argument of the verb. Correspondingly, the [P gerund] constituent in (35) is a predicate, but in (36) it is a PP argument of the verb. In this section, I discuss two syntactic consequences of these differences. First, whether or not the postverbal DP can be dropped (section 5.1), and second, whether or not the PP can be fronted (section 5.2). These consequences provide further evidence that the implicative-nonimplicative distinction is expressed both in the semantics and in the syntax of P-gerund constructions.

5.1 Object drop

Bresnan (1982) coined "Bach's generalization", which stated that object control verbs cannot be detransitivized (i.e., undergo object drop), as in (37a). Subsequent research, however, has shown that the generalization is largely spurious: Often it is the lexical properties of the verb itself – mostly unpredictable – that exclude object drop, *regardless* of control, (37b). Further, not only direct objects but sometimes oblique ones resist omission, (37c) (see Landau 2013:178-180 for a critical discussion, connecting those facts to implicit control).

(37) a. John convinced *(Mary) to leave.
b. John convinced *(Mary) of a certain conclusion.
c. The captives implored *(with the king) to spare their lives.

Landau (2015:73-75), however, revives some version of Bach's generalization. Assuming the duality of OC mechanisms – predication vs. logophoric anchoring – Landau observes that predicative control should display characteristic properties of predication; among them, the requirement that the argument saturating the predicate be syntactically present (i.e., not implicit). Given that implicative complements are controlled via predication, the following condition is derived.

(38) Implicit objects cannot control into implicative complements.

Note that (38) is both narrower than Bach's generalization (applying only to implicative verbs) and broader (applying to indirect and oblique objects as well). Indeed, Landau (2015) demonstrates that even oblique arguments cannot be dropped when controlling an implicative complement: e.g., *Mary imposed *(on John) to accept her terms*, vs. nonimplicative verbs of communication, *Mary signalled (to John) to stay still*. Importantly, (38) is a *necessary* condition on object drop in OC, not a sufficient one.

Given lexically idiosyncratic c-selection (as seen in (37a-c)), no sufficient condition for object drop can be stated. Furthermore, languages famously differ in their tolerance to object drop (English being fairly resistant in this regard), so one should not expect it to be possible with any nonimplicative control construction.[10]

In the present context, the prediction is straightforward: No implicative P-gerund construction will allow object drop, but some nonimplicative P-gerund constructions will. Let us turn now to the facts.

As noted by Rudanko 1989:129, implicative P-gerund constructions prohibit object drop. Although Rudanko only illustrates this with *from*-gerund constructions, the generalization holds across all four types.

(39) a. John's low education limited *(him) **to** working in this low-pay job.
b. Bill said that his first wife tricked *(him) **into** selling their house.
c. Mary was determined to do it, we really couldn't argue *(her) **out of** trusting her instinct.
d. To John's disappointment, the court withheld *(him) **from** confiscating our savings.

As far as I know, these facts are representative of the entire causative-implicative class (recall that it includes hundreds of verbs), without exception. It goes without saying that generic/habitual sentences should not be tested, due to the general process of generic object drop; the limiting effect of control on object drop can only be discerned in episodic contexts.[11]

Turning to the nonimplicative constructions, the picture is mixed. This is not surprising, given that (38) does not specify any sufficient condition on object drop, and as just noted, idiosyncratic restrictions apply on top of it. To begin with, it seems that the entire class of *against*-gerunds allows object drop, and concomitantly, implicit control. I underline the position of the implicit object below, remaining neutral on its grammatical

[10] Implicit *agents* seem to be visible to complement control with implicative verbs in certain languages (Pitteroff and Schäfer 2019), though still not to adjunct control (Landau to appear). These patterns still elude full understanding.
[11] As in this example (from the internet):

(i) Higher human independence provides functionalities inflicting less workload, but hides information from the pilot or **inhibits ___ from interacting with the system in depth**.

status (but see Landau 2010 for a specific proposal). Note that in all these cases, the implicit controller is construed with some salient antecedent.

(40) a. Paul$_i$ said nothing would go wrong, but I warned ___$_i$ against [PRO$_i$ putting himself$_i$ in unnecessary danger].
b. I$_i$ spoke to a consultant at a local service office for new immigrants, and she advised ___$_i$ against [PRO$_i$ getting my new passport now].
c. Everything that was considering and deliberate and wise in her$_i$ cautioned ___$_i$ against [PRO$_i$ letting herself get involved in an affair just now when her entire life was in turmoil].

It is considerably more difficult to drop the object in the other two nonimplicative types, *of*-gerund and *with*-gerund constructions. Barring generic contexts, one can still find a few examples where the implicit controller is specific. Note that such examples are only acceptable when used in context and are rarely produced in isolation.

(41) a. He also knocked her$_i$ out by choking her while accusing ___$_i$ of [PRO$_i$ cheating with other men].
b. Fort Worth-An Erath county prisoner had filed a federal suit here against Sheriff Jack Perry$_i$, charging ___$_i$ with [PRO$_i$ violating the prisoner's civil rights by refusing to let him out of jail early].

There is a potential generalization here, namely, object drop is easier before irrealis/deontic complements (namely, *against*-gerund complements) than it is before epistemic ones (*of*-gerund and *with*-gerund complements). That it is the complement's mood, rather than the preposition, to which object drop is sensitive, is supported by the fact that implicit control is more easily available into an *irrealis of*-gerund.[12]

(42) My$_i$ daughter was born in the winter months, and the nurses warned ___$_i$ of [PRO$_i$ taking her out and about because she'd get sick].

Whether this pattern can be related to a broader and more principled account, I do not know. At any rate, the fundamental contrast with the implicative class corroborates the present analysis.

[12] One reviewer finds sentences (41)-(42) unacceptable. The possibility of object drop is indeed highly variable across speakers for poorly understood reasons. The genral point of this section, however, is that no such variability is to be found with implicative verbs, which absolutely reject object drop for all speakers.

5.2 PP-fronting

Like nominal complements of prepositions, gerundive complements can be questioned, stranding the preposition behind.

(43) a. What did he talk you into?
(Answer: Quitting my job)
b. What did he accuse you of?
(Answer: Neglecting my duties)

It is well-known that in spoken English, pied-piping is dispreferred if P-stranding is possible. Nonetheless, it is not ungrammatical, and is at most unnatural. Yet, when we compare the two types of P-gerund constructions, a contrast emerges.

(44) a. * Into what did he talk you?
b. Of what did he accuse you?

The contrast is systematic: Implicative [P gerund] phrases cannot be fronted while nonimplicative ones can. It is most clearly felt in relativization, where prepositions are comfortably pied-piped in principle.

(45) * *PP-fronting with implicative constructions*
a. * We discussed playing less intensively, to which injury setbacks have anyway restricted him.
[cf. *Injury setbacks have anyway restricted him to playing less intensively*]
b. * It is believing she is innocent, into which she might fool us, that worries me.
[cf. *She might fool us into believing she is innocent*]
c. * Let me turn to exercising their legal rights by mail, out of which the government tries to bully the voters.
[cf. *The government tries to bully the voters out of exercising their legal rights by mail*]
d. * We repeat the point about continuing resistance, from which arrests of our leaders will not deter us.
[cf. *Arrests of our leaders will not deter us from continuing resistance*]

Consider now PP-fronting with nonimplicative constructions; these are clearly acceptable.

(46) ✓ *PP-fronting with nonimplicative constructions*

a. Down the list there is being a terrorist, of which I doubt that they suspect you.

b. The next issue is disseminating obscene materials to minors, with which they intend to charge Mr. Kellman.

c. There is also the possibility of investing in fossil fuel industries, against which we strongly advise our clients.

The contrast in the possibility of PP-fronting strongly suggests that underneath their superficial string-identity, implicative and nonimplicative P-gerund constructions harbor a different syntax. How can the structures in (35)-(36) shed light on this difference?

In fact, the syntactic explanation is as simple as it gets: The P-gerund constituent in (35) is a nonmaximal, Pred' projection, whereas the P-gerund constituent in (36) is a maximal PP projection. Since only minimal or maximal (but not intermediate) projections can move, the implicative [P gerund] phrase is unable to move. The contrast with nonimplicative [P gerund] phrases is striking because superficially, both look like (maximal) PPs. It is only within a syntactic theory that takes predication to be explicitly represented that the necessary contrast emerges between the structures projected by predicative and nonpredicative prepositions (we return to this point in section 6.2).

This account, which crucially appeals to the predicative status of the prepositional head in implicative constructions, meshes well with the evidence presented in section 4 for the same conclusion; namely, that the implicative gerund complement functions as a predicate. We now have converging semantic and syntactic evidence for the existence of PredP in these environments.[13]

A natural question to ask is why the entire PredP cannot be moved either.

(47) a. * Us into thinking she was innocent, he feared she might fool.

b. * The voters out of exercising their right, the government tried to bully.

These are no different from movement of causative PredP with nominal predicates.

[13] There is a vast literature arguing in favor of PredP; for important sources, see Chierchia 1985, Bowers 1993, Baker 2003 and den Dikken 2006. The arguments presented in this section join that literature and challenge the sceptical stance of Matushansky 2018.

(48) a. * Us into a false sense of security, he feared she might fool.
b. * The voters out of their jobs, the government tried to bully.

Quite generally, many types of small clauses resist movement in English.

(49) a. * Him dance outside, I saw earlier.
b. * Mary absolutely mad, George made.
c. * Bill out of the office, it was hard to keep.
d. * Sam for a genius, I took for many years.

Nonetheless, small clause complements of *want*-type verbs can be moved and pseudoclefted (Svenonius 1994:92).

(50) a. Dogs in the house, they hate.
b. What I really want is that man off my ship.

In Romance languages, small clauses with stage-level predicates are moveable but those with individual-level predicates are not, as seen in Spanish below (Raposo and Uriagereka 1995).

(51) a. Lo que noto es [a Maria cansada].
what that note.1SG is to Mary tired
'What I perceive is Mary tired.'
b. * Lo que considero es [a Maria inteligente].
what that consider.1SG is to Mary intelligent
('What I consider is Mary intelligent.')

Crosslinguistically, there is considerable variation; in Irish, Lithuanian and Korean, most types of small clauses can be displaced (Chung and McCloskey 1987, Giparaitė 2010, Ko 2015). Overall, we still lack a principled account of the restrictions on PredP displacement (which may or may not coalesce with an account of the restrictions on TP displacement). That being so, the ungrammaticality of (47) should not be taken at face value as undermining the PredP analysis, and indeed, it has not in the relevant literature.[14]

[14] If PredP is headed by a null Pred^0 head, rather than by the lexical preposition, then its immobility might follow from the ban on filling EPP (or "criterial") positions with "empty-headed" phrases, possibly extending to remnants of head-movement as well ("Takano's generalization"; see Takano 2000, Funakoshi 2012, Landau 2007, 2020). Note that the VP-layer of a vP-shell, headed by the verbal trace, cannot be displaced either; (i) is a standard ditransitive construction and (ii)-(iii) are nonimplicative P-gerund constructions.

To sum up: Movement of the sequence DP-P-Gerund is disallowed for both implicative and nonimplicative constructions. A difference emerges, however, in movement of the [P gerund] constituent by itself: This is sharply ungrammatical with the former class and possible with the latter. The reason is that P in the implicative construction is a two place predicator, which forms a nonmaximal projection with the gerund, and nonmaximal projections resist movement. The same P-Gerund sequence is a complete PP, hence available to movement, in the nonimplicative construction, where P does not mediate a predicative relation.

6. Theoretical implications

The following table summarizes the empirical differences between the two types of P-gerund constructions.[15]

(i) *[$_{VP}$ The book t_i to Mary]$_j$, John gave$_i$-v t_j.
(ii). *[$_{VP}$ You t_i of being a terrorist]$_j$, I doubt that they suspect$_i$-v t_j.
(iii) *[$_{VP}$ You t_i against taking this drug]$_j$, the doctor warned$_i$-v t_j.

[15] Other prepositions may form implicative constructions less productively. A case in point is *in*-gerund constructions.

(i) That experience engaged/immersed him in helping the poor.
(ii) The writing style of Tolkien is what interested him in reading The Hobbit.

These VPs are construed as causative and so accept inanimate subjects. The implicative entailment seems to hold in (i) (→ "He helped the poor") but not in (ii) (¬→"He read The Hobbit"). Notice, however, that there *is* a causative entailment in (ii) – "He became interested in reading The Hobbit". That (i)-(ii) should be classified with implicative constructions is further supported by their syntactic behavior.

(iii) *PC-compatibility*
* I saw that the experience engaged Bill$_i$ [in PRO$_{i+}$ working together].
(iv) *Tolerance to lexical subjects*
That experience engaged Bill in [(*Mary) helping the poor].
(v) *Object drop*
John admitted that the writing style of Tolkien is what interested *(him) in reading *The Hobbit*.
(vi) *[P-gerund] fronting*
* John mentioned travelling abroad, in which it was very easy to interest Mary.

(52) *Empirical differences between two classes of P-gerund constructions*

	V-DP-{*to,into, out of,from*}-gerund (causative)	**V-DP-{*of,with,against*} -gerund**
Semantic type of complement	<e,<s,t>>	<s,t>
Implicative entailment	+	–
Allows partial control	*	✓
Allows a lexical subject	*	✓
Matrix object drop possible	*	✓/* (mixed)
PP-fronting possible	*	✓

To wit, the first row does not strictly state an empirical property, but rather a theoretical claim about one. The assumption that the two types of complements differ in their semantic type is the underlying reason for the properties observed in the next three rows; ultimately, the direct predication imposed between the object and the complement derives the implicative entailment and the exclusion of PC and lexical subjects. The last two rows in the table, in turn, reflect the syntax behind predication: Namely, the requirement that the argument predicated of be syntactically present, and the fact that the predicative head and its complement form a nonmaximal projection. These assumptions on the syntax of predication are, of course, not logically necessary. The fact that they are corroborated in this empirical domain is interesting and encouraging from the standpoint of the general theory of predication, which introduced these assumptions for a variety of independent motivations. The alignment of semantic and syntactic properties of predication is precisely what we would expect on this theory, where the predicative relation is explicitly represented in the syntax.[16]

[16] Two further properties traditionally associated with subjects of small clauses is their opacity to subextraction (**Who do you consider jokes about tasteless?*; Postal 1974) and their resistance to nominalization (**The proof of Bill guilty*; Kayne 1984). Implicative P-constructions give mixed results under these tests. Following Postal, I suspect that these processes are blocked by Raising-to-Object and not by the presence of a small clause per se. Implicative P-gerund constructions, then, may not involve raising in the general case. This is supported by contrasts like the following between *deter/discourage* (object control implicative verbs) and *prevent/stop* (Raising-to-Object verbs).

(i) The deterrence of women from filing complaints against their assailants.
(ii) * The prevention of complaints against assailants from being brought to court.
(iii) Who did they discourage partners of from giving testimony?
(iv) * Who did they stop testimonies about from being heard?

It is instructive to consider these conclusions in light of alternative accounts of control and gerundive complementation. While a full comparison is beyond the scope of this article, I will focus on a number of claims made within such alternatives that are particularly challenged by the present conclusions. Section 6.1 discusses the challenge to semantic analyses of control that uniformly analyze the clausal complement as property-denoting, and section 6.2 discusses the challenge to corpus- and construction-based accounts of gerundive complementation.

6.1 Against uniform property-analyses of OC

The consistent clustering of properties around the implicative and the nonimplicative classes bears on the classical question, already alluded to in section 4, of whether control complements denote properties or propositions. Consider the fact that tolerance to PC and tolerance to lexical subjects go hand in hand, while obligatory EC and intolerance to lexical subjects are likewise correlated. Under the TTC, these correlations are predicted and principled. The mechanism of control in implicative constructions involves direct predication. The gerund is selected as a predicate, hence can neither give rise to partial readings nor allow a lexical subject (which would turn it into a proposition). Nonimplicative complements, on the other hand, denote propositions, whose subject may either be realized lexically or as PRO, the latter also admitting PC.

Under the property theory of control, however, *all* OC complements denote properties and so these correlations are accidental. In Pearson 2016, PC results from the semantics of a certain class of verbs. Specifically, verbs that (i) select properties, (ii) denote attitudes, and (iii) introduce events that are non-simultaneous with the matrix event. PC arises from quantification over "extensions" of the centered worlds in which the attitude holds. Whether or not the same predicate may also select a propositional complement (with a lexical subject) is not addressed or deemed relevant. Thus, the pairings below are not derived.

For some speakers, the syntactic difference between the two categories of P-constructions is further attested in their tolerance to adverbs occurring between the two objects (Michelle Sheehan, p.c.).

(v) They (ruthlessly) confined the prisoner (*ruthlessly) to eating dog food.
(vi) They (constantly) warned my grandma (constantly) against breaking the law.

This would naturally follow from the fact that PredP-internal adverbials cannot modify the main event; cf. *He (thoughtlessly) made the house (*thoughtlessly) burn down*. Unfortunately, the contrast in (v)-(vi) does not systematically generalize across all P-constructions for all speakers. I suspect that syntactic position is just one factor in the lineraization of adverbs.

(53) a. Caruso said police wrongly accused him$_i$ of [PRO$_{i+}$ gathering without a permit.
b. He accused me of [him being suspended].

(54) a. * Mary asked us to coerce John into gathering at the earliest time possible.
b. * Mary coerced John into [her being admitted to his class].

In Chierchia's 1984 system, (53b) (next to standard OC examples like (21a), *Mary accused John of stealing the formulae*) would classify *accuse* as a verb with ambiguous s-selection – either for property or for proposition. (54b) would classify *coerce* as a verb that unambiguously s-selects a property. Presumably, any analysis of OC within the property-camp would concur. However, given that PC is expressly *not* handled by a propositional analysis in this camp (at least not in Pearson 2016), there is no way to relate the (a) and (b) examples above to each other – and this holds across the entire range of implicative and nonimplicative constructions.

This problem was, in fact, already hinted at by Grano's (2015) observation that implicative verbs resist finite complementation whereas nonimplicative verbs allow it. Yet in the context of controlled infinitives, the database was rather limited. Moreover, the correlation was less than perfect due to the irregularities of selection for finiteness (a formal feature), which does now perfectly align with selection for a proposition (a semantic feature). For example, while *want* may select a propositional complement (Raising to Object or *for*-infinitive), it cannot take a finite complement.

The picture is much sharper in the domain of P-gerund complements, which is available with hundreds of verbs. Here, the property-proposition divide is visible without any shift in finiteness, and furthermore, the tolerance to lexical subjects within the nonimplicative class seems to be completely systematic. Thus, we observe a real linguistic generalization, one which, I would argue, strongly favors the dual analysis of control complements, as envisaged in the TTC.[17]

6.2 "Abstract" vs. constructional explanation

As noted in the introduction, P-gerund constructions have only received scattered attention in the linguistic literature. Almost all of it is focused on the causative *into*-

[17] See Landau 2018 for an independent argument against the uniform property-analysis of OC, based on its inability to account for the agreement features on PRO in attitude complements.

gerund construction and takes it to be an instance of the "caused motion" frame in Construction Grammar (CG). The focus in these studies is largely descriptive and consists in searching through different corpora for more-or-less coherent lexical characteristics of the verbs that take *into*-gerund complements; in addition, the diachrony of the construction is studied as well as its different distribution in British vs. American English.

Thus, Gries and Stefanowitsch (2004) found that when the gerundive verb is a cognitive verb, the matrix verb is more likely to be a causative cognitive verb than an action verb, but when the gerundive verb is an action verb, no preference is detected in the type of matrix verb. This tendency, they argue, reflects certain cognitive frames of causal chains. Other non-random correlations between the matrix and embedded verb are attributed to cultural entrenchment of particular social scenarios. Rudanko (2006) documents the spread of the construction from "flavored causation" verbs (like *trick, fool*) to manner-neutral ones (like *influence, induce*). Wulff et al. (2007) found that British English mainly uses the construction to express physical causation, while American English does so to express verbal persuasion. Kim and Davies (2015) show that indirect causation is possible with *into*-gerund complements, unlike in the related *into*+DP construction (**They convinced him into the room*), and document further distinctions between British and American varieties.

This is just a sample but it represents the whole quite well. The kind of questions that are addressed in the corpus/construction-oriented studies are very different from those addressed here. It is certainly not my intention to underrate the significance of the former questions by simply not attending to them. However, it is important to realize that the theoretical toolbox of these studies is quite limited when it comes to uncovering significant grammatical generalizations.

Note, first, that the *into*-gerund construction, which has been intensively investigated within that literature for over two decades, was treated in isolation from other P-gerund constructions. Even the first level generalization over the entire implicative class – including *to*-gerund, *out of*+gerund and *from*-gerund complements – is nowhere to be found in those works. The only generalization entertained is to the causative types, specifically caused motion. Clearly, the negative implicatives (*out of/from*-gerund) cannot be similarly viewed, and that is, presumably, the reason for their neglect. In other words, by restricting their theoretical vocabulary only to low-level categories, corpus and CG grammarians missed important generalizations that reflect genuine grammatical mechanisms.

At the next level of abstractness, the fundamental split between implicative and nonimplicative complements has also gone unnoticed. Here, the reasons seem even clearer. There is no shared semantic core to *of, with* and *against* – the three prepositions that introduce nonimplicative complements. What makes them a class is their complementary status with respect to the natural class of implicative complements (itself already somewhat abstract, subsuming both positive and negative implicatives). Thus, corpus and CG grammarians are unlikely to view constructions built with these three prepositions as instantiating a single type. Yet at a deeper level, they do form a single type, as table (52) teaches us. Such discoveries are inhibited by disproportionate emphasis on the lexical semantics of specific prepositions and by reluctance to engage with well-established bodies of knowledge, both in syntax and in semantics, that license very specific and testable predictions about the properties of these constructions, seen *as a group* and not as isolated items.

Lastly, viewing complex sentences as unanalyzed "constructions" takes its toll. Structures such as (35)-(36) are not part of grammatical explanations within corpus linguistics or CG. The idea that *accuse*-DP-*of*-gerund and *warn*-DP-*against*-gerund project the same syntactic structure, and *confine*-DP-*to*-gerund and *bluff*-DP-*out of*-gerund also project the same structure (different from the former), was naturally used in section 5 to explain the syntactic unity of each pair, and in general, of the implicative and nonimplicative classes as a whole. Generalizations over the predicted behavior of arguments in [Spec,PredP] or the nonmaximal Pred' projection are possible precisely because these constructs are made available by syntactic theory. Absent such constructs, and constrained to appeal to unstructured constructions, corpus studies and CG are unable to express the requisite generalizations, let alone derive them.

The methodological upshot of these remarks (no doubt part of a continuous, much broader debate in the linguistic community), is that abstractness in theorizing is neither an evasion nor a luxury to be shunned, but rather an indispensable feature of any serious attempt to go beyond the appearances of linguistic phenomena. In the words of Chomsky (1980a: 218f.):

> "Progress in such an inquiry is unlikely unless we are willing to entertain radical idealization, to construct abstract systems and to study their special properties, hoping to account for the observed phenomena indirectly in terms of the properties of the systems postulated and their interaction… Any serious study will, furthermore, abstract away from variation tentatively regarded as

> insignificant and from external interference dismissed as irrelevant at a given stage of inquiry. Such steps may eventually prove to have been misguided, but the only alternative is a form of natural history, tabulation and arrangement of facts."

7. Conclusion

Gerundive complements introduced by prepositions have received relatively little attention in the theoretical literature, and even less in studies of control. The one class that has been described in detail involves *into*-gerund complements, yet the available descriptions do not attempt to relate its behavior to parallel P-gerund constructions or to the more general theory of control. The present study attempted to fill both these lacunas.

Specifically, we advanced two main claims. First, the entire range of P-gerund constructions can be divided into two super-classes. One super-class expresses a causative relation such that the referent of the subject causes the referent of the direct object to bear (or *not* to bear) the property denoted by the gerund. This was labelled the implicative class. The other super-class expresses a range of intensional relations between the referent of the direct object and the proposition denoted by the gerund, holding in worlds conforming to the attitude of the referent of the matrix subject. This was labelled the nonimplicative class.

The second claim was that this fundamental split has consistent repercussions for the syntactic and semantic behavior of the two classes. Furthermore, lexical differences among particular prepositions notwithstanding, members of each super-class pattern uniformly with respect to the following properties: Licensing of partial control, licensing of an overt subject in the gerund, object drop of the controller and fronting of the P-gerund PP. This clustering of properties reflects the workings of semantic predication within a dedicated PredP in the VP of implicative constructions, versus its absence in the nonimplicative class. They receive a natural account within the TTC, where control is already modeled in two ways – via predication or via logophoric anchoring. Similarly supported is the conception of predication as a dependence explicitly represented *both* in syntax and in semantics.

Important questions remained unaddressed here. First among them concerns the lexical semantics of the prepositions introducing the gerund. We have not said anything substantive on how the particular meanings of these prepositions contribute to the

overall meaning of the construction and what constrains their combination with specific verbs. It is surely not an accident that all the four (or five, counting *in*) prepositions that figure in the implicative construction denote *bounded scalar* relations: The object moves towards a resultant state or away from a starting state. The boundary of the scale underlies the implicative entailment. Conversely, the nonimplicative prepositions denote nonscalar relations (like central coincidence in the case of *with*). These are merely cursory remarks that certainly should be expanded into a much more systematic analysis.

Nevertheless, this investigation has shown that it is possible to make considerable advances in our understanding of P-gerund constructions even when we abstract away from these lexical issues, and focus on the shared patterns of each class. The emerging picture challenges unitary conceptions of control as applying *only* to property-denoting complements, and raises serious questions for corpus- and construction-based treatments, in which the attested patterns are not obviously expected. At the same time, current formal approaches in syntax and semantics must become more responsive to "non-canonical" data of the sort examined here if they are to achieve satisfactory empirical coverage. I hope that the present study is a step in the right direction.

References

Alexiadou, Artemis, Fabienne Martin, and Florian Schäfer. 2017. Optionally Causative Manner Verbs: When Implied Results Get Entailed. Handout of a talk given in "Roots V" Workshop, QMUL & UCL.

Anand, Pranav. 2006. *De De se*. PhD dissertation, MIT.

Authier, J.-Marc, and Lisa Reed. 2018. Symmetric Reciprocal Semantics as a Predictor of Partial Control. *Linguistic Inquiry* 49, 379-393.

Baker, Mark. 2003. *Lexical Categories: Verbs, Nouns and Adjectives*. Cambridge: Cambridge University Press.

Baltin, Mark. 2009. The Properties of Negative Non-finite Complements. In *NYU Working Papers in Linguistics, Vol. 2: Papers in Syntax*, ed. by Patricia Irwin and Violeta Vasquéz Rojas Maldonado, 1-17. New York: NYU.

Borer, Hagit. 1989. Anaphoric AGR. In *The Null Subject Parameter*, ed. by Osvaldo Jaeggli and Kenneth J. Safir, 69-109. Dordrecht: Kluwer Academic Publishers.

Bouchard, Denis. 1984. *On the Content of Empty Categories*. Dordrecht: Foris.

Bowers, John. 1993. The Syntax of Predication. *Linguistic Inquiry* 24, 591-656.

Chierchia, Gennaro. 1984. *Topics in the Syntax and Semantics of Infinitives and Gerunds*. PhD dissertation, UMASS, Amherst.

Chierchia, Gennaro. 1985. Formal Semantics and the Grammar of Predication. *Linguistic Inquiry* 16, 417-443.

Chierchia, Gennaro. 1990. Anaphora and Attitudes *De Se*. In *Semantics and Contextual Expression*, ed. by Renate Bartsch, Johan van Benthem and Peter van Emde Boas, 1–32. Dordrecht: Foris.

Chomsky, Noam. 1980a. *Rules and Representations*. New York: Columbia University Press.

Chomsky, Noam. 1980b. On Binding. *Linguistic Inquiry* 11, 1-46.

Chomsky, Noam. 1981. *Lectures on Government and Binding*. Berlin: Mouton de Gruyter.

Chung, Sandra, and James McCloskey. 1987. Government, Barriers, and Small Clauses in Modern Irish. *Linguistic Inquiry* 18, 173-237.

den Dikken, Marcel. 2006. *Relators and Linkers: The Syntax of Predication, Predicate Inversion and Copulas*. Cambridge, MA: MIT Press.

Dowty, David. 1985. On Recent Analyses of the Semantics of Control. *Linguistics and Philosophy* 8, 291-331.

Duffley, Patrick J. 2014. *Reclaiming Control as a Semantic and Pragmatic Phenomenon*. Amsterdam: John Benjamins.

Folli, Raffaella, and Heidi Harley. 2019. A Head Movement Approach to Talmy's Typology. *Lingiuistic Inquiry* 51, 425-470.

Folly, Raffaela, and Heidi Harley. 2007. Causation, Obligation, and Argument Structure: On the Nature of Little v. *Lingiuistic Inquiry* 38, 197-238.

Funakoshi, Kenshi. 2012. On Headless XP-movement/Ellipsis. *Linguistic Inquiry* 43, 519-562.

Giparaitė, Judita 2010. *The Non-verbal Type of Small Clauses in English and Lithuanian*. Cambridge Scholars Publishing.

Grano, Thomas A. 2015. *Control and Restructuring*. Oxford: Oxford University Press.

Green, Jeffrey J. 2018. *Adjunct Control: Syntax and Processing*. PhD dissertation, University of Maryland

Green, Jeffrey J. 2019. A Movement Theory of Adjunct Control. *Glossa* 4(1), 87.

Gries, Stefan, and Anatol Stefanowitsch. 2004. Co-varying Collexemes in the *Into*-causative. In *Language, Culture and Mind*, ed. by Michel Achard and Suzanne Kemmer, 225-236. Stanford, CA: CSLI Publicaitons.

Hunston, Susan, and Gill Francis. 2000. *Pattern Grammar: A Corpus-driven Appraoch to the Lexical Grammar of English*. Amsterdam: John Benjamins.

Karttunen, Lauri. 1971. Implicative Verbs. *Language* 47, 340-358.

Kayne, Richard S. 1984. *Connectedness and Binary Branching*. Dordrecht: Foris.

Kim, Jong-Bok, and Nam-Geun Lee. 2013. The Transitive into -ing Construction in English: A Usage-based Approach. *Korean Journal of English Language and Linguistics* 13, 395-418.

Kim, Jong-Bok, and Mark A. Davies. 2015. The *into*-causative Construction in English: A Construction-based Perspective. *English Language and Linguistics* 20, 55-83.

Ko, Heejeong. 2015. On the Typology of Small Clauses: Null Subject and Mode of Merge in Resultatives. *Studies in Generative Grammar* 25, 347-375.

Koster, Jan. 1984. On Binding and Control. *Linguistic Inquiry* 15, 417–459.

Landau, Idan. *A Selectional Theory of Adjunct Control*. To appear in MIT Press.

Landau, Idan. 2000. *Elements of Control: Structure and Meaning in Infinitival Constructions*. Dordrecht: Kluwer Academic Publishers.

Landau, Idan. 2002. (Un)interpretable Neg in Comp. *Linguistic Inquiry* 33, 465–492.

Landau, Idan. 2007. EPP Extensions. *Linguistic Inquiry* 38, 485-523.

Landau, Idan. 2010. The Explicit Syntax of Implicit Arguments. *Linguisic Inquiry* 41, 357-388.

Landau, Idan. 2015. *A Two-Tiered Theory of Control*. Cambridge, MA: MIT Press.

Landau, Idan. 2016. Against the Null Comitative Analysis of Partial Control. *Linguisic Inquiry* 47, 572-580.

Landau, Idan. 2018. Direct Variable Binding and Agreement in Obligatory Control. In *Pronouns in Embedded Contaxts*, ed. by Pritty Patel-Grosz, Patrick Georg Grosz and Sarah Zobel, 1-41. Dordrecht: Springer.

Landau, Idan. 2020. Constraining Head-Stranding Ellipsis. *Linguistic Inquiry* 51, 281-318.

Manzini, M. Rita. 1983. On Control and Control Theory. *Linguistic Inquiry* 14, 421–446.

Marantz, Alec. 2005. Objects Out of the Lexicon! Argument-Structure in the Syntax. Ms., MIT.

Matsuda, Asako. 2019. *Person in Partial Control*. PhD disseration, Ochanomizu University.

Matushansky, Ora. 2018. Against the PredP Theory of Small Clauses. *Linguistic Inquiry* 50, 63–104.

Pearson, Hazel. 2013. *The Sense of Self: Topics in the Semantics of De Se Expressions*. PhD dissertation, Harvard University.

Pearson, Hazel. 2016. The Semantics of Partial Control. *Natural Language and Linguistic Theory* 34, 691-738.

Pearson, Hazel. 2018. Counterfactual *de se*. *Semantics and Pragmatics* 11, https://doi.org/10.3765/sp.3711.3762.

Percus, Orin, and Uli Sauerland. 2003. On the LFs of Attitude Reports. In *Proceedings of Sinn and Bedeutung 7*, ed. by Matthias Weisberger, 228-242. Konstanz: Universität Konstanz.

Pitteroff, Marcel, and Florian Schäfer. 2019. Implicit Control Cross-linguistically. *Language* 95, 136-184.

Pitteroff, Marcel, Artemis Alexiadou, Jeannique Darby, and Silke Fischer. 2017. On Partial Control in German. *Journal of Comparative Germanic Linguistics* 20, 139-185.

Postal, Paul M. 1974. *On Raising*. Cambridge, Massachusetts: MIT Press.

Raposo, Eduardo, and Juan Uriagereka. 1995. Two Types of Small Clauses. In *Syntax and Semantics: Small Clauses*, ed. by Anna Cardinaletti and Maria Teresa Guasti, 179-206. New York: Academic Press.

Rudanko, Juhani. 1989. *Complementation and Case Grammar*. Albany, NY: SUNY Press.

Rudanko, Juhani. 2005. Lexico-grammatical Innovation in Current British and American English: A Case Study on the Transitive *into -ing* Pattern with Evidence from the Banl of English Corpus. *Studia Neophilologica* 77, 171-187.

Rudanko, Juhani. 2006. Emergent Alternations in Complement Selection: The Spread of the Transitive into -ing Construction in British and American English. *English Linguistics* 34, 312-331.

Rudanko, Juhani. 2011. *Changes in Complementation in British and American English*. Basingtoke: Palgrave Macmillan.

Rudanko, Juhani. 2012. The Transitive *into -ing* Construction in Early Twentieth Century American English, with Evidence from the TIME Corpus. In *English Corpus Linguistics: Looking Back, Moving Forward*, ed. by Sebastian Hoffman, Paul Rayson and Geoffrey Leech, 179-190. Amsterdam: Rodopi.

Sag, Ivan, and Carl Pollard. 1991. An Integrated Theory of Complement Control. *Language* 67, 63–113.

Stephenson, Tamina. 2010. Control in Centred Worlds. *Journal of Semantics* 27, 409-436.

Svenonius, Peter. 1994. *Dependent Nexus: Subordinate Predication Structures in English and the Scandinavian Languages*. PhD dissertation, University of Santa Cruz.

Takano, Yuji. 2000. Illicit Remnant Movement: An Argument for Feature-Driven Movement. *Linguistic Inquiry* 31, 141-156.

Thomason, Richmond H. 1974. Some Complement Constructions in Montague Grammar. In *Proceedings of CLS 10*, ed. by Michael W. La Galy, Robert A. Fox and Anthony Bruck, 712-722. Chicago: Chicago University Press.

Vanden Wyngaerd, Guido J. 1994. *PRO-legomena*. Berlin: Mouton de Gruyter.

von Stechow, Arnim 2003. Feature Deletion Under Semantic Binding. In *Proceedings of NELS 33*, ed. by Makoto Kadowaki and Shigeto Kawahara, 133-157. Amherst, MA: GLSA Publications.

Wulff, Stefanie, Anatol Stefanowitsch, and Stefan Gries. 2007. Brutal Brits and the Pervasive Americans: Variety-specific Meaning Construction in the *into*-causative. In *Aspects of Meaning Construction*, ed. by Günter Radden, Klaus-Michael Köpcke, Thomas Berg and Peter Siemund, 265-281. Amsterdam: John Benjamins.

Wurmbrand, Susi. 2002. Semantic vs. Syntactic Control. In *Proceedings of the 15th Workshop on Comparative Germanic Syntax*, ed. by Jan-Wouter Zwart and Werner Abraham, 93-127. Amsterdam: John Benjamins.