

# *De se* readings as a window on the nature of Control

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## 0. Introduction

This paper argues that a specific (sub-)class of *de se* readings found in certain Control structures and in a well-defined set of lexical reflexives provides the key for the understanding of some long-debated and presently still poorly understood properties of Control. In a nutshell, we will argue that the contrast between the conditions of empirical assessment of a sentence like “I visited East-Berlin 30 years ago”, whereby it makes sense to ask “Is it really you who visited E-B 30 years ago?” and a sentence like “I am in pain”, for which the equivalent questioning (*Is it really you who is in pain?*) would be meaningless<sup>1</sup> extends to complex structures involving Control. In fact, if I truly utter the sentence “I think to have seen E-B 30 years ago”, it might be meaningful for you to express doubts (say, based on a different recollection of the relevant events) on the identity of the subject of the embedded infinitival, by asking for instance: “Is it really you the person of whom you think that she visited E-B 30 years ago?”. Conversely, if I truly utter a sentence like “I remember visiting E-B 30 years ago”, and I intend my speech act as a report on the subjective experience I am presently having, it sounds pointless for you to inquire about the referential identity of the embedded subject by asking “Is it really you the person of whom you remember that he visited E-B 30 years ago?”. We propose that this phenomenon

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<sup>1</sup>Cf. Wittgenstein 1958, Shoemaker 1968, Pryor 1999, Recanati 2007 a.o.

(known in the philosophical literature as ‘immunity to error through misidentification’, from now on IEM) offers an important window on the nature of Control and on its core interpretive properties, including the distinction between Exhaustive and Partial Control (EC and PC, respectively).

The paper is organized as follows. In the first section, we discuss the relation between Control and restructuring, based on Cinque’s insight<sup>2</sup> that the cases where Control can be reduced to raising (i.e. A-movement, as in the Movement Theory of Control (MTC))<sup>3</sup>, overlap with the cases where Control is interpreted exhaustively, whereas the residual cases, in which Control involves, by hypothesis, the syntactic realization of the embedded subject as an empty category (say, PRO), overlap with the cases of Partial Control (or ‘imperfect control, as the phenomenon is also dubbed). We will point out that Cinque’s analysis, though conceptually elegant, is empirically untenable, since (as discussed in detail in section 4) there are restructuring verbs (like *volere*/want) that readily admit Partial Control, and, on the other side, non-restructuring verbs that do not admit Partial Control (like *believe/credere*<sup>4</sup>).

In section 2 we present our solution to what we dub ‘Cinque’s paradox’ (i.e. ‘How can restructuring verbs be allowed to assign a theta-role?’) by proposing that the theta-role that cannot be syntactically realized is virtually indistinguishable (on cognitive and referential grounds) from the theta-role assigned by the embedded predicate, and undergoes, as such, a lexical operation of thematic overwriting by means of which the theta-role associated with the higher predicate (the experiencer) overwrites the theta-role associated with the lower predicate (the agent). This

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<sup>2</sup>Cf. Cinque 2004

<sup>3</sup>Cf. Hornstein 1999 and subsequent work by the same author

<sup>4</sup>Cf. Pearson 2013

approach elegantly derives the fact that restructuring verbs are strictly bound to the specific class of *de se* readings that give rise to IEM-effects.

In section 3, we present additional empirical evidence for the claim that thematic overwriting is a UG option whenever two theta-roles turn out to be semantically indistinguishable, by providing an analysis of lexical reflexives that explains why a subclass of these predicates gives rise to IEM-effects.

Section 4 shows that IEM-effects extend beyond the class of restructuring predicates. In turn, this observation can be taken to show that at least a subclass of non-restructuring control predicates is incompatible with the syntactic realization of the embedded subject (say, as PRO), falsifying Cinque's hypothesis about the nature of non-restructuring control configurations. We further show that there are no solid empirical and conceptual grounds to adopt a weaker version of Cinque's hypothesis (roughly, the hypothesis according to which all control structures that do not give rise to IEM-effects require the syntactic realization of PRO as the embedded subject), and we subscribe to the conclusion that control is uniformly based on some (extended) mechanism of thematic overwriting.

In section 5, we develop a principled solution for the many puzzles arising with respect to Partial Control. First, we observe that PC is found even with non-restructuring IEM-predicates, and this may be taken to show that PC cannot be a function of the semantics of PRO (since, by hypothesis, there is no PRO in control structures featuring IEM-effects). Second, we argue that the correct distribution of PC across control predicates can be derived, based on the semantics of the higher predicate and on the semantics of thematic overwriting. More particularly, we show that PC is correctly predicted to arise, as an essentially pragmatic effect, under the reasonable view that thematic overwriting makes the overwritten theta-role interpretively available, through pragmatic enrichment, provided individual-extension goes hand in hand with temporal-extension in the subordinate clause, as

proposed by Pearson 2013. In principle, PC is always available in Control structures, but it is blocked whenever the higher predicate is incompatible with temporal shifting in the subordinate clause.

In the final section, we draw some conclusions, emphasizing that our approach offers an elegant analysis of the most puzzling interpretive properties of Control, based on thematic overwriting. We also suggest that MTC is not viable as the syntax of control but remains the correct syntax for restructuring control predicates, as proposed by Cinque. At the same time, the semantics of PC does not depend on the presence of PRO since it extends to restructuring predicates displaying IEM-effects. In our analysis, the right results follow from an optimal balance of syntactic and semantic ingredients, with virtually no recourse to empirically unmotivated stipulations.

### 1. Restructuring and control

Cinque 2004 offers a principled analysis of restructuring predicates, based on the insight that these are not lexical verbs projecting an independent argument structure but rather functional elements directly inserted into a head position within the articulated functional hierarchy of the clause. There is no need to hypothesize overt or abstract restructuring operations yielding monoclausality as an effect of verb-movement, as in Rizzi's original analysis<sup>5</sup> and much of subsequent work on the topic. In fact, mono-clausality results from the very nature of the 'restructuring' predicate as a functional element. In favor of this analysis Cinque adduces the rigid relative order among restructuring verbs that is observed in languages like Italian, and the fact that mono-clausality does not seem to be tied to the manifestation of the canonical 'transparency effects' in the structure, since it arguably holds even when the restructuring structures feature no clitic-climbing. More particularly, Cinque argues that there is no solid empiric evidence in favor of the idea that restructuring

<sup>5</sup>Cf. Rizzi 1978, 1982

involves complex verb formation through head-movement. Rizzi's traditional syntactic tests in favor of this kind of syntactic constituency (such as Right Node Raising and Cleft Sentence Formation) are critically discussed and dismissed, under the claim that other syntactic operations (Like Focus Movement and Topicalization) are admitted to apply to structures involving clitic-climbing. From the present perspective, an important result emerges from this analysis: for the subset of control structures that admit restructuring (i.e. involve a 'functional' verb as the higher predicate), the MTC is fully supported, since the only option is for the 'controlling' subject to be generated as the subject of the embedded predicate and moved from there to the higher subject position in which it surfaces. The reason is that for the large majority of restructuring predicates, it holds that they are devoid of independent thematic properties (i.e. they do not assign an external theta-role). This is shown by the fact that these predicates (functional heads in Cinque's analysis) fail to impose selectional requirements on the subject of their clause (cf. Cinque 2004):

- (1) a. La casa gli doveva piacere 'the house had to appeal to him'  
b. La casa non gli poteva piacere 'the house could not appeal to him'  
c. La casa gli smise di piacere 'the house stopped appealing to him'  
d. La casa gli stava dando molti dispiaceri 'the house was giving him a lot of troubles'  
e. La casa gli finì per piacere 'the house ended up being appealing to him'

However, there is a major empirical problem. A subset of restructuring verbs does actually impose selectional requirements on the subject, as is shown in (2) (cf. Cinque 2004):

- (2) a. \*La casa gli voleva appartenere 'the house wanted to belong to him'  
b. \*La casa non gli osava piacere 'the house did not dare to appeal to him'

c. \*La casa non gli sapeva piacere ‘the house didn’t know how to appeal to him’

d. \*La casa gli provò a piacere ‘the house tried to appeal to him’

This seems to indicate that restructuring is compatible with a situation in which the higher ‘functional’ verb does actually assign an external thematic role. On these grounds, if one still wants to endorse the MTC, she is forced to adopt Hornstein’s non-conservative version of the theory, according to which a single argument can be assigned more than one theta-role and theta-roles are configurationally assigned both through External and Internal Merge (to the effect that moving the subject from the lower to the higher position is tantamount to endowing it with two theta-roles). However, Cinque takes a different route. He observes that the data in (2) are at odds with other data (based on *ne*-extraction and the properties of impersonal (-passive) *si* constructions), which show that even the verbs in (2) (and not only those in (1)) do not take any external arguments. In other words, Cinque still pursues the idea that Raising (i.e. A-movement) provides a uniform analysis for those control structures that admit restructuring. He suggests that if this view could be maintained, there would be important conceptual advantages. In particular, he adopts Wurmbrand 2002’s analysis, according to which the divide between EC-predicates and PC-predicates is determined by restructuring: exhaustive control is uniformly compulsory for restructuring control predicates and partial control uniformly available for non-restructuring control predicates. If this is correct, and restructuring uniformly entails raising, the explanation would be readily available: obligatory control would simply be a mechanical side-effect of raising (in fact, there would be a unique argument with a unique theta-role in these structures) and partial control would follow as the default semantics assigned to non-restructuring control predicates, involving PRO as the subject of the embedded predicate. We would be freed from the kind of ‘mission impossible’ consisting in making the MTC compatible

with partial control<sup>6</sup> while at the same time retaining the MTC as the correct analysis of restructuring predicates, elegantly deriving the OC-effects that characterize this class of predicates. There is, however, an important residual problem to be solved: how to account for the data in (2), which suggest that certain restructuring predicates do in fact assign an external theta-role? Let us dub the contrast between (2) and the data suggesting that the subject of restructuring predicates is uniformly a ‘derived’ subject as *Cinque’s paradox*. In a nutshell, it can be formulated as follows: How can we enforce a raising analysis for restructuring predicates while maintaining that some of them still express selectional requirements on their subject? Cinque’s solution to the paradox (inspired to Zubizarreta 1982’s notion of adjunct theta-role) is not very principled and consists in “taking their selectional requirements to be a consequence of their semantics. If verbs like ‘want’... must be predicated of a sentient being, the ungrammaticality of (55) [our (2)]... follow without having to assume that they take an external argument of their own” (Cinque 2004: 15). As is evident, what remains to be explained is why semantic selection requirements that are normally identified as theta-roles are not formally expressed as theta-roles, to be syntactically discharged. In a sense, this solution is tantamount to simply ignoring the problem, i.e. it is based on the stipulation that there are in fact two theta-roles assigned to the same argument. And if this is the case, we lose the main motivation for the original conservative stand towards the ‘generalized’ MTC, in which arguments may receive more than one theta-role. In the next section, we will propose a principled solution to *Cinque’s paradox*, based on the idea that the semantics of the four predicates at stake in (2) enforces a lexical process of thematic overwriting whereby the higher theta-role is overwritten to the lower theta-role<sup>7</sup>. We propose that it is the availability of thematic overwriting, on independent semantic grounds, that allows the syntactic realization

<sup>6</sup>Cf. Landau 2000, 2003 and much subsequent work by the same author.

<sup>7</sup>This is based on the notion of an active lexicon and complex lexical operations especially envisaged (and partially developed) in Tanya Reinhart’s work. Cf. Reinhart 2002.

of these predicates as ‘functional’ heads rather than as regular lexical verbs: as proposed by Cinque, they directly lexicalize a functional position within a given functional hierarchy, and cannot head a VP of their own. However, it will turn out that the semantic requirements for thematic overwriting are also satisfied by some non-restructuring control predicates, and that these predicates naturally admit Partial Control. It follows that Cinque’s generalization (based on Wurmbrand 2002), according to which PC is a function of the semantics of PRO, is not empirically sustained, since thematic overwriting is incompatible, by definition, with the syntactic realization of the embedded subject as PRO. It seems thus that an explicit and principled solution to Cinque’s paradox opens a completely different scenario on the nature of (Partial) Control. In the next section, we introduce the basic ingredients of this scenario.

## 2. Immunity to error through misidentification as a trigger for theta-bundling

The insight we intend to develop in this section is basically the following: the four verbs that resist a direct raising analysis in Cinque’s scenario (*sapere* ‘know’, *volere* ‘want’, *osare* ‘dare’, *tentare* ‘try’) can be made compatible with a unique argument analysis in terms of A-movement (i.e. Raising), provided one accepts the idea that the theta-role assigned by the higher predicate<sup>8</sup> *overwrites* the role assigned by the subordinate predicate. In this way, only one theta-role is syntactically active, which can be realized in the lower subject position. As a first approximation, thematic overwriting can be defined as in (3):

$$(3) \lambda x \lambda y [\text{Exp}_{V_1}(x) \dots \text{Ag}_{V_2}(y)] \rightarrow \lambda x [\text{Exp}_{V_1 + \text{Ag}_{V_2}}(x)]$$

Roughly, (3) is intended to express the insight that in the cases at hand the lower theta-role is canceled for the aims of the *syntactic* computation (correctly deriving the

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<sup>8</sup>The higher predicate corresponds with the verb inserted – under Cinque’s analysis – into a dedicated position within the clausal functional hierarchy, since its meaning fully matches the meaning universally associated to that functional position



EXPERIENTIAL reading associated to the IEM-effects), while still feeding, as we will see, the interpretive systems. Thematic overwriting provides thus a conceptual solution to ‘Cinque’s paradox’. However, as it stands now, the proposed analysis simply makes explicit, by making reference to the specific lexical operation in (3), what was left ‘implicit’ in Cinque’s analysis, through the opaque notion of ‘adjunct theta-role’ or, alternatively, the as opaque notion of a theta-role expressed in the semantics of the predicate but not realized in syntax. Given our proposal, however, an interesting possibility arises to attain a higher level of explanatory adequacy. This is the case if we are able to identify an independent trigger for thematic overwriting in the relevant structures. If there are independent reasons for (3) to apply, the raising analysis of thematically complex control structures is no longer based on the stipulation that one of the relevant theta-roles is not assigned in syntax, but can be seen as the result of the application of a relatively complex set of interface conditions (i.e. the condition – to be established – that makes overwriting possible on general UG grounds, and the condition – already established – that makes overwriting an effective solution for *Cinque’s paradox*). So, the question is now: which UG conditions or general interface principles make thematic overwriting possible in the case of the control structures discussed at the onset of this section?

We believe that the answer to this question lies in the semantics of the relevant predicates, more exactly in the fact that they license a variety of *de se* reading that is commonly referred to, in the philosophical literature, as ‘immunity to error through misidentification’ (IEM). The phenomenon has originally been described in Wittgenstein 1958 with respect to the peculiar sort of first-personal interpretation assigned to the first-person pronoun (‘subject-I’ in Wittgenstein’s terminology) in sentences like those in (4) below:

(4) a. I am in pain

b. I see a canary in the room in front of me

As noticed by Wittgenstein, it does not make sense, in these cases, to inquire about the identity of the subject of the described experience by asking, for instance: “Is it really you who is in pain”? or: “Is it really you who is seeing a canary?”. The reason for this is, intuitively, that (4) holds as a report on a subjective experience which is *immediately given*, that is, not based on acts of reflection or on external perceptual data<sup>9</sup>. In this sense, the IEM-reading of (4) is only one of the possible interpretations. A non-IEM-reading of (4) arises, for instance, in a context in which I, being presented with two pictures featuring a man whom I come to identify with myself, might describe their content by uttering the sentence: “Here, I am in pain” (if the man in the picture displays for instance overt signs of physical distress) or the sentence: “Here, I see a canary in the next room” (if the man in the picture is portrayed as glazing at a canary in front of him). In the literature, the IEM-reading has been referred to as a kind of ‘implicit *de se*’<sup>10</sup>, characterized by the absence of an explicit process of becoming aware of the identity between the object(s) of thinking and the subject of thinking, or in terms of the basis relativity of the judgment involved, as is made clear by the following quote (Morgan 2012: 106):

(5) “There are different bases on which I might judge ‘I hear trumpets’. For example, I might base that judgment on an auditory perception I am having. If I do, the judgment seems to be fp-immune [i.e. immune to error through misidentification relative to the first person; DD]. But what if I had made the same judgment on the basis of an inference from the following judgments: ‘The person in the third row hears trumpets’ and ‘I am the person in the third row’ (we can imagine that I have come to know both of these premises through testimony)? At least when made on this kind of inferential basis my judgment ‘I hear trumpets’ does not seem fp-immune. If the first premise of the inference had been true, but the second premise

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<sup>9</sup>Cf. Shoemaker 1968

<sup>10</sup>Cf. Recanati 2007

had been false, the error I made would have been an error through misidentification”.

Higginbotham 2003 argues that the subject of control complements is immune to error through misidentification with predicates such as *remember*, *imagine*, and *want*, in the same way as the first person pronoun when used as a subject, in Wittgenstein’s sense (cf. Delfitto and Fiorin 2014, Fiorin and Delfitto 2015). Consider the sentences in (6):

- (6) a. I remember saying that John should finish his thesis by June
- b. I imagine flying
- c. I want to solve the problem

If we apply the diagnostics proposed above for the detection of IEM-effects, it clearly makes no sense, in all three cases above, to inquire about the identity of the subject of experience. More particularly, it is pointless to inquire whether it’s truly me the person of whom I remember that he said that John should finish his thesis, whether it is truly me the person of whom I am imagining that he is flying, or whether it is truly me the person who – in my intention – should solve the problem. As above, the reason is that the sentences in (6) uniformly count as reports of subjective experiences in which the object of remembering, imagining and wanting is immediately given as the subject of the experience itself, without any reflective or perceptual act of identification or any basis-relative judgment, in Shoemaker’s and Morgan’s sense.

Let us consider now in some detail the way in which IEM-effects extend from simple sentences to complex control sentences, contributing to explain not only the contrast detected between the two sentences in (7) but also, crucially, the contrast arising between the two sentences in (8):

- (7) a. I sent the letter
- b. I am in pain
- (8) a. I want that Mary solves the problem
- b. I want to solve the problem

The speech act consisting in assertorically uttering (7a) clearly commits me to identify the person who sent the letter as myself, but – under the most common circumstances of interpretation – there is no sense according to which the content of my assertion is ‘protected’ from possible errors of misidentification that might have occurred while I was constructing the empirical basis (in Morgan’s sense) of my judgment. In fact, if one collects some evidence that the sender was not me but, say, my wife (and he gets convinced that I might have confused memories about the relevant facts) he might legitimately ask me: “Is it really you who sent the letter?”. This procedure would be pointless in the case of (7b): when uttering this sentence, I may be mistaken about a lot of things (including the fact that I am possibly miscategorizing the described subjective experience as ‘pain’), but I cannot possibly be mistaken about the identity of the subject of this experience, for the very reason that there is no question of identity: the subject of the experience is immediately given to me as a (minimal) *self*<sup>11</sup>, beyond any act of reflection or external perception. In fact, there is an extreme scenario in which this *self* reduces – for me while uttering the sentence – to the unique property I describe in uttering the sentence.

Now notice that this reasoning naturally extends to the pair in (8). When truthfully uttering (8a), I certainly want Mary to solve the problem but once again, it is not impossible to figure out circumstances in which my judgment might have incurred into an error through misidentification. This can be clarified under the assumption that proper names are endowed with a primary and a secondary

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<sup>11</sup>For the notion of *minimal self* see Gallagher 2000.

intension, as in *two-dimensional* approaches. Suppose that the problem that should be solved is a hard mathematical problem and that what I really want while uttering (8a) is that the problem be assigned to the best mathematician in my research group. It simply turns out that I identified Mary as “the best mathematician”, based, say, on some clues I had. However, I am completely mistaken about that, since Mary’s mathematical skills are in fact quite limited. Since my will – in the given circumstances – could be correctly described by replacing the proper name in (8a) with the corresponding intension “the best mathematician in my group”, it follows that it is perfectly legitimate for someone to inquire into the content of my will by asking the question: “Is it really Mary the person who – in your intention – should solve the problem?”. As we have seen, I might finally concede, under a better assessment of the facts, that the person who I want to solve the problem is not Mary but, say, Anne. Conversely, it is actually pointless for you to ask me, after I uttered (8b), whether it is really me the person who – in my intention – should solve the problem, at least under the IEM-reading of (8b). This is the reading of (8b) according to which my uttering the sentence simply commits me to the truth of the subjective experience that I am reporting by means of (8b), according to which my willingness to solve the problem is given to me without me having to identify the experiencer of this willingness, through some explicit act of reflection or external perception, that is, through some ‘basis-relative’ judgment.

If this analysis is essentially correct, in the case of *want* – as well as in the case of *remember* and *imagine* – the control structures to which this verb gives rise amount to the description of a single subjective experience. For instance, in the case of (8b), the semantics expressed does not require assigning a distinct referential content to both the higher and the lower theta-role, since this sentence, under the IEM-interpretation, reads as the report of a single subjective condition of willingness to be the experiencer of an event of solving the problem. This kind of ‘experiential’ reading

emerges clearly when we consider that it applies also in the case of passive complements, as in (9b), to be compared to (9a):

(9) a. John wants to kiss Mary

b. John wants to be kissed by Mary

The willingness of John to be the experiencer of an event of kissing Mary in (9a) translates into the willingness of John to be the experiencer of an event of being kissed by Mary in (9b), quite independently of the different properties of the lower theta-role. More particularly, notice that the theta-role of ‘kiss’ that gets overwritten in (9b) is the patient theta-role, which is generally characterized as lacking any reference to mental states (cf. Reinhart’s 2002 theta-system, where the ‘patient’ role translates into the feature pair [- mental, - cause]). On these interpretive grounds, it really makes sense to re-interpret the lexical operation that was described in (3) and restated in (10) as an *asymmetric overwriting operation*, whereby the theta-role associated with the higher predicate (the experiencer) *overwrites* the theta-role expressed by the lower predicate (which is thus cancelled and replaced by the higher experiencer):

$$(10) \quad \lambda x \lambda y [\text{Exp}_{V_1}(x) \dots \text{Ag}_{V_2}(y)] \rightarrow \lambda x [\text{Exp}_{V_1 + \text{Ag}_{V_2}}(x)]$$

As we will see in section 5, this analysis in terms of thematic overwriting also offers important advantages for a principled analysis of Partial Control.

Let’s take stock and briefly consider where we are. We started by asking whether there is some independent grammatical condition enforcing theta-overwriting as a solution to *Cinque’s paradox* and we have been able to find some cases of control in which there is actually no support whatsoever for the syntactic realization of two distinct theta-roles endowed with independent referential content. These structures exhibit strong IEM-effects, whereby the experiencer of a unique subjective experience is immediately given as a (minimal) *self*. We propose that UG favors theta-

overwriting in these structures, that is, the application of an overwriting procedure that cancels the lower theta-role for the aims of the syntactic computation and replaces it with the higher theta-role (the experiencer). The intuitive reason for this is that projecting two or more theta-roles into distinct argument slots only makes sense if these theta-roles have any prospects to translate into distinct referential indexes. When control structures are interpreted as reports on immediately given subjective experiences, to the effect that the referent of the predicates involved is a sort of minimal *self*, this condition is clearly not satisfied, since no referential index can be assigned except from the one assigned to the minimal experiencer. If we can show that all verbs that turned out to be problematic for a raising analysis (based on the observation that the higher predicate has thematic properties) give rise to IEM-effects in control structure, we would have a principled explanation of why *overwriting* applies in these structures. Since overwriting provides an effective solution to *Cinque's paradox*, we would end up with the desired analysis of restructuring in terms of A-movement. From another perspective, we would end up with the discovery that it is the availability, for a certain subclass of control structures, of the special type of *de se* reading, granting immunity to error through misidentification, that guarantees a uniform analysis of restructuring as A-movement. We have already shown that IEM-effects are clearly detectable with *want/volere*. More explicitly, we propose now that *volere*, as a restructuring verb in Italian, is directly inserted in a dedicated functional position that exactly matches – as a consequence of the UG format – its semantic content. The external theta-role of *volere* overwrites the subject theta-role of the embedded predicate, under the conditions discussed above. The unique theta-role so obtained is realized in the lower subject position, and undergoes raising under standard syntactic assumptions (say, for case reasons). This entails that under an IEM-account, *volere* is virtually indistinguishable, on syntactic grounds, from the

restructuring predicates that give rise to control structures where there is no external theta-role to be assigned.

Let us now consider the case of *tentare* (try), by evaluating sentences like (11), as discussed in Grano 2011 (cf. also Pearson 2013):

(11) John tried to go to the movies

Based on the references above, two ingredients may be deemed necessary to provide a convenient semantics for (11): (i) first, the event of going to the movies must have started being realized to some degree; in this sense the semantics of *try* is partially modeled on the semantics of the progressive; (ii) second, the fact that John tried to go to the movies entails that John wanted/intended to go to the movies. As a confirmation of (ii), Grano adduces the felicity of (12):

(12) John did not try to cross the street; he crossed the street accidentally

Moreover, (i) and (ii) are strictly intertwined. Consider the case of a person who is physically incapacitated to move (cf. Pearson 2013), in a context in which she is attempting at opening a door. At the moment in which she is still in the process of activating her motor system in order for her arm to reach out for the doorknob (possibly without success), we cannot felicitously utter (13a) if her arm has not moved yet, whereas uttering (13b) sounds perfectly sound:

- (13) a. Mary is opening the door  
b. Mary is trying to open the door

The point to be made here is that having the intention to open the door, at a stage where this intention has already been ‘put into action’, that is, it has already been translated into some neurophysiological state associated with the activation of the motor system, already counts as ‘trying’, though no physical movement has taken place, yet. Crucially, the observation that ‘trying to open the door’ entails ‘wanting to open the door’ makes control structures with *try* as the higher predicate optimal



candidates for a *de se* reading with IEM-effects. And in fact, if I truly utter the sentence “I’m trying to open the door”, it seems pointless for you to inquire into the possibility of an error through misidentification, by asking something of the sort: “Are you sure you are correct in identifying yourself with the person who is trying to open the door?”. The reasons for this are the same as for the cases already examined: “I’m trying to open the door” counts as a report on a subjective experience whose subject is immediately given as a minimal *self*: there is no process of identification of the experiencer based on external perceptual evidence or reflective strategies, hence it makes no sense to inquire about the correctness of this process.

We think that the same type of considerations readily extends to *osare* ‘dare’ and *sapere* ‘know’. Take a sentence like (14a):

(14) a. Oso metterlo per iscritto

‘I dare to write it down’

There is a reading according to which by uttering (14a), I am truthfully reporting on a single subjective experience that is immediately given to me, consisting in writing down something with the feeling that I am showing, in doing this, a considerable degree of courage or defiance. Under this IEM-reading, there is no sensible question concerning a possible identity mismatch between the person who feels courageous/defiant and the person who is writing down something.

Let us now consider (14b):

(14) b. So risolvere l’equazione

‘I know to solve the equation’

Clearly, the meaning of this sentence comes very close to its equivalent with a modal. It readily translates in English as “I can/am able (to) solve the equation”. We should thus not be surprised that this control structure is a raising structure, as is the

case with modals. Still, we observed above that *sapere* assigns a subject theta-role. So, *sapere* cannot be used when the subject is an inanimate object, as in “\*Questa barca sa galleggiare” (‘this boat knows to float’), where only the modal is allowed (“Questa barca può galleggiare”). It seems thus that in this case the presence of a subject theta-role simply reduces to the selectional requirement that a mental state be involved. This entails that in uttering (14b) I am making reference to an inner/mental state that allows his/her bearer to be able to solve the problem. Again, no sensible question can be posed about a possible referential mismatch between the bearer of this mental state and the agent involved in solving the problem.

Let us see which conclusions are warranted. There are some ‘functional’ verbs that give rise to restructuring and uncontroversially assign a subject theta-role. Since these verbs do not project a VP, how can this theta-role be syntactically accommodated? It turned out that these are cases where control structures are not simply associated with *de se* readings, but are actually associated with a specific subclass of *de se* readings whereby the bearer of a mental state *implicitly* and *immediately* identifies herself with the object involved in this mental state, without perceptual and reflective grounds, and cannot thus be held as mistaken about this identification (IEM-reading). We have further proposed that UG does not care about the independent realization of two theta-roles when they cannot possibly bear distinct referential indexes. The consequence is theta-overwriting, which cancels the lower theta-role from the syntactic derivation, while keeping it alive for the systems of interpretation. As we will see in section 4, this solution paves the way for a generalized analysis of Control that preserves some advantages of the MTC, while virtually solving the serious difficulties that this theory encounters.

### 3. Theta-bundling and lexical reflexives

Before we outline some of the consequences of the analysis proposed above for a generalized theory of control, we want to briefly discuss some facts regarding lexical

reflexives (in English and especially Dutch) that arguably provide an independent confirmation of one of the main hypotheses put forward in the preceding sections: in contexts where two theta-roles cannot possibly be assigned distinct referential indexes, theta-overwriting applies as the default UG option, and may give rise to IEM-effects when the higher theta-role at stake is an Experiencer. In this section, we show that this also happens in contexts that do not overtly express propositional attitudes.

First of all, let us consider the interpretation of self-reflexives in (15a-b), for English and Dutch respectively:

- (15)     a. Bill admired himself  
          b. Bill bewonderde zichzelf

In (15), we detect the same kind of *de re* / *de se* ambiguity that arises in the complements of verbs of propositional attitudes (cf. Delfitto and Fiorin 2008). To briefly illustrate this, consider the scenario (inspired to Castaneda's 'war-veteran' classical setting; cf. Castaneda 1968) in which Bill is watching a man on TV who is bravely rescuing a boy whose life is endangered. Bill admires the man, without realizing that what he is presently seeing is the recorded images of something he himself did years before. On analogy with Castaneda's case of *de re* readings in contexts of propositional attitude, an external observer is allowed to describe this situation, in English or Dutch, by making use of (15). The reason for this can be clarified by making use of the notion of 'acquaintance relation' (Kaplan 1989; see also Maier 2010 and the references cited there) as the source of the ambiguity. Though the admired person is certainly Bill (coreference is induced by the use of the reflexive pronoun, under standard assumptions), the *res* he is admiring is necessarily accessed by means of an acquaintance relation (for instance, in the case at stake, 'the man who is bravely rescuing the boy'), in terms that are thus compatible with Bill's

unawareness that the *res* is Bill himself. The same considerations hold for the most readily available *de se* reading of (15): Bill admires himself, in the full awareness that the person whom he admires is he himself. In this case, we can assume that the *res* Bill is admiring is accessed by Bill by means of the acquaintance relation ‘identical to Bill’: under ‘identity’ as the salient acquaintance relation, a *de se* reading is promptly enforced.

Remember now that Chierchia correctly pointed out<sup>12</sup> that *de se* readings can be grammatically enforced: control structures are generally not amenable to *de re* interpretations. If reflexives give rise to the same sort of ambiguity, we may expect that there are cases of reflexivization where a *de se* reading is grammatically enforced as well. The prediction is borne out. Such a case is provided by a subclass of reflexives in Dutch, exemplified in (16):

- (16) a. Jan verbaasde zich  
           ‘John got surprised’  
       b. Jan bewoog zich  
           ‘John moved’

There are no scenario’s in which (16a) could be used with a *de re* interpretation, to express, for instance, the reading according to which Jan surprised himself in seeing his own image reflected in a mirror, and without recognizing the image in the mirror as he himself. The only possible interpretation of (16a) is one in which it is used as a report of the fact that Jan got surprised. What is reported is a past subjective experience of surprise whereby the cause of the surprise cannot be distinguished from the experiencer: the experience is immediately given to a *self* that is not identified by means of explicit acts of reflection or perception. If I utter a sentence like “Ik verbaas me” (‘I am surprised’), it is thus pointless for you to inquire whether I

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<sup>12</sup>Cf. Chierchia 1989 and much subsequent literature.

could be mistaken about the identity of the experiencer of the surprise, as an instance of error through misidentification. It makes no more sense for you to ask me: “Are you really sure that it is you who is surprised?” than it does when you ask: “Are you sure that it’s really you who is seeing a canary?” as a reaction to my assertive use of the sentence “I see a canary”. On these grounds, (16) can be taken to instantiate the subclass of *de se* readings that we have identified as IEM-readings. As a confirmation, let us examine the interpretive relation that a sentence such as (16b) entertains with the transitive and unaccusative variants of ‘bewegen’ (move). The three relevant sentences are given in (17):

- (17)      a. Jan bewoog de gordijnen                      (transitive)  
                   ‘John moved the curtains’
- b. De gordijnen bewogen                      (unaccusative)  
                   ‘the curtains moved’
- c. De gordijnen bewogen zich                      (reflexive)  
                   ‘the curtains moved-refl’

In the unaccusative and reflexive variants in (17b-c) the subject is inanimate. The unaccusative variant in (17b) expresses the meaning change traditionally associated with causative alternation phenomena: the external theta-role is suppressed and what is put in the foreground is the change of state that the curtains undergo, i.e. the transition from the state in which they were motionless to the state in which they are moving. The interpretation of (17c) is different: this sentence unavoidably evokes a sort of ‘ghost-effect’, since by uttering it the speaker somehow entails that the curtains have an inner power/disposition to move themselves<sup>13</sup>. How can we account for this odd interpretive effect? Suppose that lexical reflexives like ‘zich bewegen’

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<sup>13</sup>Cf. Reuland and Marelj 2013 and the references cited there

necessarily involve theta-overwriting, under the version developed above. This would mean that the external theta-role (say, 'Cause') *overwrites* the Patient theta-role: what is moved must thus retain the properties of a Cause. The same phenomenon arguably takes place in the case of 'zich verbazen', in sentences such as (16a). Here the two theta-roles involved, under standard assumptions, are Cause and Experiencer, as made evident by the transitive variant "Zijn beeld in de spiegel verbaasde Jan" ('his image in the mirror surprised John'). Under theta-overwriting, one of the two theta-roles *overwrites* the other, yielding the interpretation of (16a) according to which the Cause is indistinguishable from the Experiencer himself. What is reported is a subjective experience whereby the experiencer of the surprise is the cause of her own surprise. What explains the interpretive difference between (17b) and (17c) is thus the fact that in the reflexive variant the Cause role is not eliminated but rather overwritten, yielding the odd reading according to which the curtains do not simply move but must somehow count as causing their own movement. The conclusion we'd like to draw is that reflexive structures such as (16a) instantiate IEM-effects brought about by the indistinguishability of the theta-roles involved, i.e. by the impossibility of associating these theta-roles with distinct referential indexes, as in the cases of the control structures characterized by an IEM-reading. At the same time, it must be said that the case in (16b) is slightly different, since it is not clear that (16b) can be read as a report on a subjective experience. This is partially confirmed by our discussion about (17c): the 'ghost-effect' detected here simply consists in viewing the curtains as endowed with a causal potential for movement, and not in viewing them as endowed with a potential for developing subjective experiences. So, the question is: What enforces theta-overwriting in cases such as (16b)?

An answer to this question can be found by examining other canonical cases of lexical reflexives in English and Dutch, like those in (18):

- (18) a. John washed/shaved  
 b. Jan waste/schoor zich

Here, there is a clear interpretive difference with respect to the reflexive counterparts of (18) that involve self-reflexives, as in (19) below:

- (19) a. John washed/shaved himself  
 b. Jan waste/schoor zichzelf

The difference does not consist in the fact that the lexical reflexives in (18) are necessarily read *de se*, whereas the sentences in (19) are ambiguous between a *de re* and a *de se* interpretation. There is certainly a strong bias to interpret (18) as a report on an event in which John consciously shaved himself, i.e. he shaved while being completely aware that the person shaved was he himself. In spite of this, it is not difficult to figure out situations in which (18) can be read in ways that are incompatible with a strict *de se* reading. For instance, suppose that John is found in the bathroom in a sleep-walking condition while engaging in a series of actions that we would qualify as shaving. In this scenario, we are allowed to report the situation, both in English and Dutch, by using sentences containing a lexical reflexive. We might say, for instance: “I entered the bathroom and I saw John shaving”, whereas it is quite likely, in the sleep-walking scenario, that John was not acting consciously, i.e. he was probably not aware, among other things, that the person shaved was he himself. The correct generalization seems thus to be that in the structures involving lexical reflexives there are strong reasons to identify one of the two arguments of the predicate as referentially non-distinguished from the other. In the case of ‘zich verbazen’, there are no reasons to distinguish between the ‘experiencer’ argument and the ‘cause’ argument, since what we are reporting is an immediately given subjective experience. In the case of ‘zich bewegen’, there are no reasons to distinguish between the ‘cause’ argument and the ‘patient’ argument: if we utter the

sentence “Jan bewoog zich”, what we are reporting is a series of automatically coordinated motor control instructions that produces the effect that the object that referentially counts as the locus of these instructions is put into movement. Roughly the same effect is found in the case of ‘zich wassen/scharen’: here, it is the Theme and the Agent argument that are merged together. What is described is a state of affairs in which the Agent automatically performs a well-defined series of actions (including internal motor control instructions) automatically affecting some of his body parts (similar considerations hold for ‘zich ontkleden’ (to get undressed), etc.). In this case, it is thus not required that the Agent be aware that she is non-distinct from the Patient, it is only required that the agent be involved in an automatically developing course of actions whereby there is no sensible distinction to be made between the Agent and the Patient, in the sense that the individual washed/shaved cannot possibly be different from the individual who performs the given course of actions. As is well-known from the literature on lexical reflexives<sup>14</sup>, proxy-readings are completely excluded, whereas they are allowed for the variants involving self-reflexives. In a wax-museum scenario, in which John is moving, washing, shaving his wax-counterpart, we cannot report this situation by means of the sentence “John beweegt/wast/scheert zich”, whilst it is perfectly acceptable to describe it by means of the sentence “Jan beweegt/wast/scheert zichzelf”. Under the analysis proposed above, this immediately follows. Proxy-readings do not satisfy the crucial requirement for theta-overwriting, that is, the condition according to which overwriting is enforced by UG to take place between two given theta-roles when these two theta-roles cannot be possibly be assigned distinct referential indexes. The statue of John goes proxy for John and it is not exactly John. In fact, the sort of movements required from John when he washes his wax-counterpart (including the internal motor control instructions) are quite different from the movements (again,

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<sup>14</sup>Cf. Reuland 2011 and the references cited therein



crucially including the internal motor control instructions) that result in ‘John washing’.

On these grounds, we conclude that the data on lexical reflexives corroborate the hypothesis according to which theta-overwriting is automatically activated, on UG grounds, whenever two theta-roles are referentially indistinguishable. This can result in *de se* readings displaying IEM-effects (when an Experiencer role is involved) or in readings where IEM-effects are kept apart from *de se* effects, as is the case for “*zich bewegen/wassen/scheren*”. If I truthfully utter the sentence “I shaved”, it cannot be the case that I was mistaken in identifying the shavee with myself. The reason is that if the shavee is not me but another person, it necessarily follows that I miscategorized the whole shaving event (since, as argued above, the event of ‘shaving’ is distinct from the event of ‘shaving someone’, including the event of ‘shaving himself’, that readily allows a proxy-reading). In all cases, theta-overwriting is dictated by *metaphysical necessity*, i. e. by the impossibility that the theta-roles involved be distinguished referentially. However, *de se* effects manifest themselves only when an Experiencer theta-role is involved, giving rise to reports on subjective experiences. The conclusions reached in the preceding section on IEM-effects as a trigger for bundling still stand, but they are now part of a scenario in which IEM-effects and *de se* readings are not necessarily associated.

#### 4. IEM-effects, PRO and Partial Control

In section 1, we have seen that Cinque 2004 identified the class of restructuring verbs (including those that assign a subject theta-role) with the class of raising predicates. Since Raising entails the presence of a unique subject argument, exhaustive control effects (EC) are predicted for this class of control structures. The other control structures involve the presence of PRO as the subject of the embedded clause. Partial Control (i. e. the possibility that the referent of PRO properly includes

the referent of its controller) follows thus naturally as an ingredient of the semantics of PRO.

Undoubtedly, this would count, if correct, as a quite elegant analysis. However, there are insurmountable empirical difficulties with it. First, certain restructuring verbs that assign an external theta-role admit Partial Control. This is the case with *volere* (want). Desideratives like ‘want’ are well-known as PC-verbs in English (see Pearson 2013 and the references cited therein). Here are some examples:

- (20)
- a. John wants to meet at 9 am
  - b. John wants to go on holiday all together
  - c. John wants to work at the problem as a team
  - d. John (an architect) wants to build the new town without endangering the environment

Some of these examples readily translate into Italian, in sentences where *volere* is used:

- (21)
- a. Gianni vuole riunirsi alle 9
  - b. Gianni vuole andare in vacanza tutti assieme
  - c. Gianni vuole lavorare al problema come team
  - d. Gianni (un architetto) vuole costruire la città senza danneggiare l’ambiente

There is clear evidence – we believe – that (21a) is a ‘fake’ example of PC, and rather involves an ‘empty comitative analysis’<sup>15</sup>. For instance, English (22a) cannot translate into Italian as (22b), where the collective predicate ‘riunirsi’ is used, but as (22c), where the predicate has a singular ‘comitative’ meaning that is in fact compatible with the overt realization of the comitative argument:

<sup>15</sup>For this account of PC-phenomena cf. Boeckx, Hornstein and Nunes 2010

- (22) a. I want to meet at 9 am  
 b. \*Voglio riunirsi alle 9  
 'I want to meet-PL at 9'  
 c. Voglio riunirmi alle 9 con gli altri membri del gruppo  
 'I want to meet-SG at 9 with the other members of the group'

Independently of the status of (21a), the examples in (21b-d) are sufficient to show that *volere* gives rise to PC effects. Since *volere* is a restructuring verb, this fact is incompatible with Cinque's hypothesis.

Second, there are non-restructuring verbs that do not admit PC. This is the case for 'propositional' verbs such as 'believe', 'claim' and 'pretend' in English<sup>16</sup>. These data readily translate into Italian, as shown by (23):

- (23) a. \*Gianni crede di essere andati in vacanza tutti assieme  
 'John believes to have gone-PL on holiday all together'  
 b. \*Gianni sostiene di essere andati in vacanza tutti assieme  
 'John claims to have gone on holiday all together'  
 c. \*Gianni pretende di essere andati in vacanza tutti assieme  
 'John pretends to have gone on holiday all together'

Since this subset of propositional verbs does not give rise to restructuring effects – hence a raising analysis is impossible for them – this behavior is incompatible with Cinque's hypothesis: these structures are predicted to involve the presence of PRO as the subject of the embedded clause, and the semantics of PRO should make PC effects possible.

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<sup>16</sup>Cf. Pearson 2013

Third, the discussion in the preceding section strongly suggests that the possible separation line between structures not involving PRO (thus incompatible with PC) and structures involving PRO (by hypothesis, compatible with PC) should not be drawn between restructuring verbs and non-restructuring verbs, but rather between the class of structures characterized by raising and theta-overwriting on one side, and the class of verbs that do not permit theta-overwriting on the other side. More particularly, the unitary analysis of restructuring verbs as involving raising was shown to be a side-effect of the IEM-reading triggered by the restructuring predicates that assign an external theta-role. For these predicates raising is parasitic – so to speak – on theta-overwriting, which represents the grammatical encoding of IEM-readings. If this is correct, a clear-cut prediction is made: we expect that control structures where *de se* gives rise to IEM-effects should be incompatible with PC. The reason is that an IEM-reading is based on the application of overwriting, to the effect that no PRO – the trigger of PC under Cinque’s hypothesis – should be present in these control structures. At first sight, this empirical refinement does not seem to represent a serious challenge for Cinque’s conjecture: the (slightly revised) prediction is that PC should be incompatible with all monothematic raising predicates (typically, aspectual and modal verbs) and with all verbs that give rise to IEM-readings, crucially including ‘implicatives’ such as ‘dare’ and ‘try’ (cf. the analysis in section 2). The rest of control structures is predicted to involve PRO, hence to give rise to PC effects. More importantly, the empirical refinement under discussion seems to provide an important conceptual advantage. It might provide us with a principled reason why PRO triggers PC-effects (consider that this remained a stipulation in Cinque’s account). In a nutshell, the reason is the following. As we have seen in section 3, theta-overwriting is incompatible with proxy-readings. This elegantly follows from the nature of overwriting, which is triggered by the referential indistinguishability of the theta-roles involved. Conversely, it is well-known that pronominal elements readily lend themselves to proxy-readings: this is the case for

personal pronouns, crucially also under a bound-variable reading, and for the self-anaphors discussed in section 3 (cf. Reuland and Winter 2009 for a formal analysis of proxy-readings in terms of Skolem functions). Under this premises, a non-stipulative account for the reason why PRO triggers PC is immediately available: it suffices to regard the *extension phenomenon* by means of which the referent of PRO comes to include the referent of its controller as a straightforward instance of proxy-reading for PRO. Since PRO is a pronominal/anaphoric element after all, this is exactly what should be expected on general grounds.

Unfortunately, in spite of its apparent plausibility, this empirical/conceptual refinement of Cinque's conjecture, inspired by our analysis of the role of IEM-effects for the syntactic analysis of control, is empirically untenable. The reason is that if we draw the division line as proposed above, too many predicates would fall on the wrong side of the line. For instance, there is no doubt that propositional predicates like 'remember' and 'imagine' give rise to strong IEM-effects<sup>17</sup>. Unfortunately, it is also uncontroversial that these propositional predicates are pretty much compatible with PC, as shown by (24):

- (24)      a. I imagine working at the problem all together  
               b. I remember going on holiday all together

Moreover, not only propositional predicates such as 'remember' and 'imagine' are problematic (PC effects without PRO), but also propositional predicates like 'believe', 'claim' and 'pretend' (EC with PRO), since – as noticed above – the latter do not seem to give rise to IEM-readings, hence theta-overwriting is not expected to apply.

On these grounds, two conclusions seem inescapable: (i) the semantics of PC cannot be discharged on the semantics of PRO (*contra* Cinque); (ii) IEM-effects extend quite beyond the class of restructuring predicates. An important consequence of (ii) is

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<sup>17</sup>Cf. Higginbotham 2003 and the discussion in Delfitto and Fiorin 2014

that (under the hypothesis that IEM-readings involve theta-overwriting) bundling extends beyond the class of restructuring predicates. In this respect, there are essentially two questions to be addressed. First, which is the syntax of non-restructuring overwriting predicates? Second, which is the relationship between overwriting and PC? In the remainder of this section, we will address the first question, while the second issue will be discussed in the next section, where we will provide a new original insight about the nature of Partial Control.

As for the first issue, it seems to us that the default hypothesis is that if a non-restructuring predicate involves overwriting, the unique argument of this predicate must be realized in the subject position of the higher predicate. Here is why. The higher verb in a non-restructuring structure is by definition a lexical verb that cannot be inserted into a matching head position within a rigidly defined hierarchy of functional categories. It projects thus a full VP, hence a thematic subject position where the external theta-role can be syntactically realized. Once overwriting has taken place, reducing the number of arguments that must be syntactically realized in the control structure to one, two options are available: (i) the unique theta-role is syntactically realized in the lower subject position and then moved to a higher subject position; (ii) the unique theta-role is directly realized in the higher subject position, whereas the lower subject position is not projected. There are strong reasons to prefer option (ii) to option (i). Option (ii) is conceptually straightforward: if two theta-roles are reduced to one, the syntactic space is reduced in the most economical way. Conversely, option (i) has to face two major problems. First, it violates elementary conditions on the economy of derivation, since we would have two instances of Merge (one operation of External Merge and one operation of Internal Merge) instead of one (the single operation of External Merge consisting in generating the argument in the higher subject position). Second, the operation of Internal Merge would consist in displacing the subject either directly into a thematic A-position (an option that could be avoided within the 'conservative' version of the MTC that we have adopted)

or at least by crossing a thematic position (a minimality violation). These complications (independently of whether they can be overcome) simply do not arise under option (ii).

Under the analysis proposed above, non-restructuring overwriting predicates such as ‘remember’ and ‘imagine’ do not involve raising and do not involve PRO. A reasonable conjecture is that the primary motivation for theta-overwriting within grammar design consists in providing a principled way out from Cinque’s paradox in the case of restructuring control structures. However, the evidence just reviewed suggests that overwriting might have generalized as a core grammatical device to encode IEM-readings, quite independently of the functional or lexical status of the higher predicate in control configurations. From this perspective, a further possibility that arises is that overwriting further generalizes to the predicates that do not trigger IEM-effects, as a third step. As an example in Italian, consider (25), which clearly entails the presence of an error through misidentification:

- (25) Gianni pensa di aver spedito la lettera, ma si sbaglia (a spedirla è stata sua moglie)  
 ‘John thinks to have sent the letter, but he is wrong (it was his wife who sent it)’

There is a clear sense that the third step should be the more problematic, since it entails overcoming the original motivation for theta-overwriting, that is, encoding the referential indistinguishability between two theta-roles. And in effect, there is some evidence that it *is* more problematic, since parametric variation among languages is typically found at the level of the predicates that do not give rise to IEM-readings. ‘Believe’ represents a case in point: it is incompatible with control in English but not in Italian:

- (25) a. Gianni crede di essere intelligente

b. \*John believes to be intelligent

Clearly, 'believe' is a predicate that typically gives rise to *de se* readings devoid of IEM-effects, as shown by (26) below:

(26) Credevo di essere venuto a Praga nel 1989, ma poi mi sono convinto che  
ci era venuta Anna

'I believed to have come to Prague in 1989, but then I realized that it was  
Anna'

Suppose that this approach is essentially correct. It would entail that if a language allows control to apply beyond the class of monothematic raising predicates and the class of IEM-predicates, it does that by extending the domain of theta-overwriting to non-canonical cases (i.e. beyond the core domain of IEM-effects). There is thus no reason to assume that these structures involve PRO as the subject of the embedded clause. From the present perspective, the only principled reason to introduce PRO would be linked to the possibility of drawing the line between PRO-structures and non-PRO-structures in such a way that the PRO structures are those that allow PC, to the effect that the semantics of PC might be seen as a function of the semantics of PRO, with clear conceptual advantages. But we have seen, in the course of this section, that there is no empirically viable way to draw this line.<sup>18</sup>

In the next section, we will address the second problem formulated above, that is, the relationship between theta-overwriting and Partial Control. Facing this problem will allow us to develop some original new insights on the nature of Partial Control and of Control as a whole.

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<sup>18</sup>We do not discuss in this paper the independent syntactic motivation that has been proposed in favor of a PRO-like empty category in control structures



## 5. The semantics of theta-overwriting and pragmatic enrichment

The issue to be addressed concerns the relationship between bundling and PC. On the grounds of the discussion in the preceding sections, there is an important conclusion to be drawn and that should represent the starting point of any analysis of the problem at stake. This is the fact that all classes of predicates that give rise to PC-effects (i.e. propositional, factive and desiderative predicates) contain predicates that manifest IEM-effects. Just to exemplify, ‘remember’ is a factive predicate, ‘imagine’ is a propositional predicate and ‘want’ is a desiderative predicate. Given this observation, the original issue translates into the following: How is it possible that referential indistinguishability of theta-roles (that is, what underlies IEM-readings) be compatible with situations where the referent of the lower theta-role includes the referent of the higher theta-role (that is, with the semantics of PC)? Moreover, there is an important corollary to be emphasized: we not only want to understand how comes that IEM-effects are compatible with PC-effects, we also want to understand why PC manifests itself in control structures independently of the presence of IEM-effects. Namely consider that many desiderative, factive, propositional and interrogative predicates gives rise to PC in contexts where there are no IEM-effects.

A line of analysis that would be fully compatible with the approach to Control developed here consists in discharging the burden of the explanation on the semantics of the control predicates. A solution of this kind is proposed in Pearson 2013, where PC emerges as the result of an ‘extension effect’ within the quantificational structure of control predicates, in the context of a ‘property analysis’ of the complements of control verbs inspired to Lewis’ and Chierchia’s analysis of *de se*. The general idea<sup>19</sup> is that the complements of attitude predicates (on analogy with what is assumed for root clauses) have abstractors over worlds, times and individuals in their left-periphery. This means that these predicates are treated as quantifiers over

<sup>19</sup>Cf. also Abush 1997.

world/time/individual triples. Exemplifying with the verb ‘claim’, we get something along the lines of (27):

$$(27) \quad \llbracket \text{claim} \rrbracket^{c,g} = \lambda P_{\langle e, \langle i, \langle s, t \rangle \rangle \rangle} \lambda x_e \lambda t_i \lambda w_s. \forall \langle w', t', y \rangle \in \mathbf{claim}_{x,w,t} \rightarrow P(y)(t')(w')$$

Where  $\mathbf{claim}_{x,w,t} = \{ \langle w', t', y \rangle : \text{it is compatible with what } x \text{ claims in } w \text{ at } t \text{ for } x \text{ to be } y \text{ in } w' \text{ and for } t \text{ to be } t' \}$

Informally, (27) reads as follows: “*Claim* is the set of properties that hold of the individual  $y$  in all the worlds  $w$  and times  $t$  such that it is compatible with what is claimed by the individual  $x$  in the world of evaluation for  $x$  to be  $y$ , for  $w$  to be the world of evaluation and for  $t$  to be the time of evaluation”. On these premises, Pearson proposes that the reason why some canonical attitude predicates (like ‘claim’, ‘believe’ and ‘pretend’) are incompatible with PC is that these predicates are used to report attitudes about the here and now. These ‘simultaneous’ predicates contrast with future-oriented predicates (like ‘decide’, ‘want’, ‘intend’, ‘hope’) and past-oriented predicates (like ‘remember’ and ‘regret’). As originally noticed in Landau 2000 (and successive work on the topic by the same author), it is these future- and past-oriented predicates that typically give rise to PC. This contrast is empirically detectable by investigating the pattern of temporal modification through overt temporal adverbials exhibited by these verbs, as shown in (28) below:

- (28) a. \*Yesterday/today, John claimed to go to the movies tomorrow  
(simultaneous)
- b. Yesterday/today, John wanted/hoped to go the movies tomorrow  
(future-oriented)
- c. Today, John remembers/regrets going to the movies yesterday  
(past-oriented)

The crucial insight is that ‘past-oriented’ predicates contain an abstract aspectual operator that shifts the time of evaluation of the embedded clause to the past with respect to the time of evaluation associated with the main predicate. In fact, a sentence like “John remembers going to the movies yesterday” is interpreted as equivalent to the sentence “John remembers having gone to the movies yesterday”. Analogously, ‘future-oriented’ predicates shift the time of evaluation of the embedded clause to the future with respect to the time of evaluation introduced by the main predicate. Finally, it is proposed that factive predicates contain an inherent progressive operator (shifting the time of the embedded clause to a time  $t'$  that includes the time  $t$  introduced by the main predicate): a sentence like “I am glad to write this paper” is actually read as “I am glad to be writing this paper”. Consider now that the reason why a sentence like “\*I believe/claim to write this paper” is unacceptable might consist in the fact that ‘simultaneous’ predicates such as ‘claim’ and ‘believe’ do not contain an inherent progressive operator, to the effect that the sentence above cannot be read as “I believe/claim to be writing this paper”, unless a progressive operator is overtly introduced in the complement clause, shifting its time of evaluation, as required.

In a nutshell, the conclusion is the following: there are predicates of propositional attitude that manifest a *temporal extension effect*. As seen in (27), these predicates introduce a form of quantification on triplets  $\langle w, t, i \rangle$  of worlds, times and individuals. The temporal extension effect consists in the replacement, within this triple, of the variable  $t$  introduced by the main predicate with a variable  $t'$  that includes, precedes or follows  $t$ . On the other hand, there are predicates of propositional attitudes that do not admit any temporal extension effect. The claim is that it is these predicates that are incompatible with PC<sup>20</sup>. The reason – it is submitted – is that, since quantification is on times AND individuals (cf. (27)), temporal

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<sup>20</sup>Cf. Pearson 2013 for a detailed empirical justification of this claim

extension goes hand in hand with individual extension. From this perspective, PC is nothing else than the introduction of a containment relation between  $i'$  (the individual variable associated with the complement clause) and  $i$  (the individual variable introduced by the main predicate). PC is thus correctly predicted to arise only with the verbs that allow temporal extension, since these are also the verbs that allow individual extension. Pearson 2013 further argues that EC-predicates (implicatives, aspectuals and modals) also do not allow temporal extension, as expected.

As emphasized above, Pearson's analysis is compatible with the analysis of control proposed in the present contribution. More particularly, Pearson's analysis, from the present perspective, has two main consequences: (i) there is no need for PRO in control structure (in full agreement with the conclusions reached at the end of the preceding section); and (ii) PC is a phenomenon that is entirely independent of theta-overwriting and IEM-effects. In principle, we might subscribe to both conclusions. However, we believe that (ii) is actually *not* correct. We propose that there is in fact an important conceptual link between theta-overwriting and PC. Elucidating this link permits to solve a residual conceptual difficulty implicit in Pearson's account. Let us see why this is the case.

As it stands, Pearson's approach is technically satisfactory but conceptually awkward. Quantification – as induced by predicates of propositional attitude – is on triples of worlds, times and individuals. We have clear evidence – as discussed above – that with a subclass of these predicates times can be shifted. *PC follows if we assume that temporal shifting triggers individual shifting*. This is a technical possibility and nothing prevents it from applying. However, it is not a technical necessity. It is perfectly conceivable, from a technical perspective, that temporal shifting does *not* trigger individual shifting. For a Martian language with no PC-effects, it would be enough to assume just that. In other words, it seems that, as things stand now, we

have a correct technical description of the phenomenon, but still do not have a solid conceptual justification for it. In particular, it seems to us that the basic ingredient that is still missing is that we have a conceptual explanation for why temporal extension takes place (based on the semantics of the relevant predicates) but no serious conceptual explanation for why *individual extension* should take place. In other words, given the analysis we have, if the data in (28) were different from how they are, we would really be surprised. However, if PC did not exist, we would have no reason to be particularly surprised: we would simply infer that temporal extension does not trigger individual extension. The obvious question is thus: Is there a way to achieve a higher level of explanatory adequacy? More particularly, why should we have a phenomenon of individual extension, paralleling temporal extension? We think that the semantics of theta-overwriting provides an explanatory answer to this important question.

Suppose that we adopt the results summarized at the end of section 4, including the conjecture that Control generally involves theta-overwriting, even for the cases (and the languages) where theta-bundling is not limited to the structures giving rise to IEM-readings. As already emphasized, one consequence will be that there is no need for PRO, in agreement with Pearson's proposal. This approach would also rule out Landau's analysis, based on agreement intervention effects caused by Infl-PRO agreement and Infl-to-C movement<sup>21</sup>. Consider now the effects of theta-overwriting. We have proposed that when the higher theta-role overwrites the lower theta-role, the latter is cancelled and replaced by the former. This was tentatively rendered in (10), reproduced below as (29) for the reader's convenience:

$$(29) \quad \lambda x \lambda y [\text{Exp}_{V_1}(x) \dots \text{Ag}_{V_2}(y)] \rightarrow \lambda x [\text{Exp}_{V_1 + \text{Ag}_{V_2}}(x)]$$

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<sup>21</sup> Cf. Landau 2000

This is intended to express the fact that the two theta-roles are reduced to one for the purposes of the syntactic computation, whilst the ‘cancelled’ theta-role is still allowed to feed the systems of interpretation. But what does this mean exactly? In order to see this in some detail, let us consider the context in (30a), which triggers a PC-reading of the control structure in (30b):

- (30) a. The problem was solved by the team, in fact everyone contributed something to the solution.
- b. And actually, on that occasion, John enjoyed solving/liked to solve the problem as a team

Under the analysis just sketched, the Experiencer role of the higher verb overwrites the Agent role of the lower verb. Roughly, this entails that the person who solved the problem is necessarily accessed as the Experiencer of the mental state of joy<sup>22</sup>. However, in the context of (30a), this does not exclude that the referential content of the Agent role be ‘modified’ through pragmatic enrichment. If we put these two observations together, we get the following interpretation for the control structure in (30b): “John was the experiencer of a mental state of joy whose content is that this very same experiencer solved the problem, *and this solving involved other persons besides the experiencer*”. At this point, there is a crucial observation to be made. Suppose that we stick to the context defined by (30a), while replacing the control structure in (30b) with the simple clause in (30c) below:

- (30)c. \*And actually, on that occasion, John solved the problem as a team

The question is thus: Why is pragmatic enrichment (leading to individual extension effects) allowed in the complex structure in (30b) and ruled out in the simple structure in (30c)? Notice that this observation corresponds to the well-known

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<sup>22</sup>This necessarily leads to a *de se* reading: cf. Delfitto and Fiorin 2014 and the references cited therein

fact that PC is a property of embedded clauses, and does not extend to root clauses<sup>23</sup>. We think that the answer to this question is quite straightforward within the framework that we have developed. In (30c) the Agent role is syntactically discharged as a semantically singular argument (i.e. John), whereas the predicate (i.e. 'solve the problem as a team') is semantically plural. All we need in order to derive the ungrammaticality of (30c) is the hypothesis that pragmatic enrichment cannot be enforced in these contexts of 'formal mismatch', in which the rules of projection have been violated (a syntactically expressed semantically singular argument should be made compatible with a semantically plural predicate). However, there is arguably no formal mismatch in (30b), i.e. in the case of the control structure. The reason is that the Agent role is not syntactically expressed in (30b): it has been overwritten by the Experiencer role of the higher verb, that is, it has been deleted *for the purposes of the syntactic computation*. If we accept this as a crucial ingredient of the semantics of overwriting, it is no longer the case that the pragmatic enrichment induced by the context in (30a) has to be made compatible with the singular semantics of the Agent role. In fact, syntax does not encode a singular semantics of the Agent role, since the latter has been virtually suppressed *as far as syntax is concerned*. There is thus no formal mismatch to be repaired. At the same time, and crucially for our purposes here, *the Agent role remains active for the systems of interpretation*: pragmatic enrichment can thus felicitously take place in the context of (30a), yielding the required plural interpretation of the Agent role.

We propose that this is always the case for all control structures: PC simply corresponds to the application of a mechanism of pragmatic enrichment for the interpretation of the theta-role that is 'cancelled', as a consequence of overwriting. This entails that PC (as an effect of individual extension, as in Pearson 2013) is a necessary ingredient of the semantics of Control: whenever theta- overwriting takes

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<sup>23</sup>See Sheehan 2012 for an updated discussion, and the referenced cited therein.

place (within the framework defined here, in all control configurations) pragmatic enrichment of the lower theta-role (hence PC-effects) are predicted to be possible. If this is so, there is a further important conceptual advantage. It has long been recognized that one of the ‘mysteries’ of PC is the fact that PC is not symmetric. Namely, it is possible for the referent of the lower theta-role to include the referent of the higher theta-role, but it is crosslinguistically excluded (hence a reasonable effect of the UG format) that the referent of the higher theta-role includes the referent of the lower theta-role (that is, ‘inverse PC’ is excluded). Given the line of analysis just sketched, there is nothing to explain here: inverse PC would be tantamount to assuming a mechanism of pragmatic enrichment of the referential content of the higher theta-role. However, this theta-role overwrites the other one, and remains thus syntactically active: if it is syntactically realized as a semantically singular argument, it is not allowed to agree with a semantically plural predicate. In other words, there simply is no issue of inverse PC in the present framework.

There are two final problems to be solved. As it stands now, our approach clearly over-generates. It is predicted that all control structures are compatible with PC, contrary to the facts. However, this simply means that we have to take into account the important results reached in Pearson 2013: individual extension (that is, the possibility of pragmatic enrichment as a consequence of the semantics of theta-bundling) is only possible for those predicates that allow temporal extension. For instance, *claim/believe/pretend* do not: it follows that PC is excluded as well. A possible objection against this line of analysis is that on this point it does not improve on Pearson’s analysis: There, it had to be stipulated that temporal extension involves individual extension, here it has to be stipulated that individual extension involves temporal extension. However, this criticism would be unfair. Remember that the real difficulty was to understand the conceptual motivations for individual extension. It is this problem that has been solved now: individual extension (hence PC) is nothing else than a mechanism of pragmatic enrichment of the lower theta-role that is made



possible by the semantics of thematic overwriting and that is blocked in all other cases. On this basis, all we have to assume in order to eliminate over-generation is a quite reasonable *uniformity condition on variable extension*. This condition states that, once granted that time and individual extensions are independently motivated, they cannot apply independently of each other, that is, they cannot apply non-uniformly (asymmetrically). The behavior of canonical propositional attitudes that do not admit PC (like 'claim' and 'believe') immediately follows. These are cases where the uniformity condition is violated, since temporal extension is impossible (on independent grounds). Monothematic restructuring predicates also do not admit PC: in this case, there is a single theta-role involved, which undergoes syntactic realization, to the effect that pragmatic enrichment is excluded. In all residual cases (including the cases involving an IEM-reading), the lack of PC can only be due to a violation of the uniformity condition, i.e. to the impossibility of applying temporal extension. On empirical grounds, this seems to be correct (cf. Pearson 2013).

The second problem to be addressed is that it might not be immediately clear why theta-overwriting should be compatible with individual extensions through pragmatic enrichment. After all, the (original) semantics of overwriting is based on referential indistinguishability of the two theta-roles, and this might seem to be incompatible with the fact that the referential indexes associated to the two theta-roles end up as different, as a consequence of the extension effect that applies to one of them. Moreover, it is just referential indistinguishability that allowed us to derive the impossibility of proxy-readings with lexical reflexives. So, one might ask, why should overwriting rule out proxy-readings and rule in PC-effects (i.e. individual extension by means of pragmatic enrichment)? The answer is in fact quite straightforward. Proxy-readings may be assumed to result from the application of Skolem-functions to entity-referring expressions. Based on Reuland and Winter 2009, Skolem-functions are defined as in (31):

- (31) A function  $f$  of type (ee) with a relational parameter  $PR$  is a Skolem function if for every entity  $x$ :  $PR(x, f_{PR}(x))$  holds

Intuitively, Skolem-functions map an individual  $x$  into a referentially distinguishable individual  $y$ , though  $x$  and  $y$  are related to each other in terms of some relevant relational parameter, as formulated in (31). For instance, the wax-counterpart of John is a distinct object, though it is related to John in terms of the relation ‘wax-copy’. The mechanism of individual extension that we have proposed for PC does not satisfy this condition of referential distinguishability. The reason is that this mechanism does not map a referential index  $i$  into a distinct referential index  $j$ , but it simply extends  $i$  by building up an index set  $\{i, j, k\dots\}$  that contains the original index  $i$ . In this way, the intersection of the extended object and of the original object is by definition not empty, and the associated referential indexes turn out to be non-distinguishable. It follows that pragmatic enrichment is fully compatible with overwriting, since it does not violate the condition according to which overwriting is fed by referential indistinguishability. Conversely, proxy-readings violate this condition. To get the correct results, it suffices thus to interpret indistinguishability as in (32) below, a sound move on conceptual grounds:

- (32) Two theta-roles are referentially indistinguishable iff they either end up assigned to the same object or they end up assigned to objects that are in a part-all relation to each other

Let us conclude this section by exemplifying how IEM-effects and PC-effects are made compatible by means of an example. Take the continuations in (33b) and (33c), given the context introduced by (33a):

- (33) a. John had been seeing Mary for a long time. Eventually...  
 b. ... \*he kissed  
 c. ...he wanted to kiss

We know what the reason is of this grammaticality contrast: pragmatic enrichment through individual extension is permitted only in (31c), as discussed above. What about the interpretation of (31c)? Remember that this is a sentence that involves both an IEM-reading and a PC-reading. Well, (31c) reports on a subjective experience of John's, more exactly on his willingness, which is immediately given to him, to be the experiencer in an event of kissing, whereby it is contextually determined that Mary also participates, as an Agent, to this very same event of kissing. There is nothing contradictory or awkward about this reading, which puts together PC-effects and IEM-effects. On the contrary, this seems a non-trivial elucidation of the semantics associated with (33c), as the result of a well-defined set of intertwining conditions.

## 6. Conclusions

In this contribution, we have proposed that the syntax of Control is based on a lexical operation of theta-overwriting, whereby a theta-role overwrites another theta-role. Originally, theta-overwriting arises as the semantics of a particular class of *de se* readings, namely the cases where *de se* gives rise to immunity to error through misidentification (IEM-readings). Since this is exactly the semantics associated with restructuring predicates that assign a subject theta-role, theta-overwriting constitutes the core grammatical solution for what we have dubbed *Cinque's paradox*. This is the requirement that the higher subject theta-role be somehow syntactically expressed even if no VP is projected (hence no thematic subject position is available), since restructuring verbs are functional heads filling dedicated position within the functional hierarchy of the clause. We have proposed that theta-overwriting may extend beyond the original IEM-structures, as a matter of parametric variation. Finally, we have proposed that it is the semantics of theta-overwriting that explains the availability of Partial Control and some of its core properties, as for instance the

non-existence of inverse PC and the impossibility for individual extension effects to apply in simple clauses. In order for PC to apply, two conditions have to be satisfied: first, there must be theta-overwriting; second, the extension must apply uniformly to all variables quantified over, and this reduces to the requirement that the semantics of the predicate also allow, on independent grounds, temporal extension, in the sense of Pearson 2013. All in all, we argued that a particular class of *de se* readings can contribute to a better understanding of control phenomena, including Partial Control. Some long-debated issues have been elucidated by means of an original combination of syntactic and interpretive ingredients (including conditions on language use), with an attempt at eliminating any residual stipulation.

## References

- Abusch, D. (1997). "Sequence of tense and temporal *de re*". *Linguistics and Philosophy*, 20(1), 1-50.
- Boeckx, Cedric, Norbert Hornstein, and Jairo Nunes. 2010. *Control as movement*. Cambridge, UK: Cambridge University Press.
- Chierchia, Gennaro. 1989. "Structured meanings, thematic roles and control". In G. Chierchia & B. Partee (Eds.), *Properties, Types and Meanings II* (pp. 131-166). Dordrecht: Kluwer.
- Cinque, Guglielmo. 2004. *Restructuring and functional structure*. Ms., University of Venice.
- Delfitto, Denis, and Gaetano Fiorin. 2008. "Towards an extension of *de se/de re* ambiguities: Person features and reflexivization". *Lingue e Linguaggio* 7:25–46.
- Fiorin, G. and D. Delfitto. 2014. "Control, attitudes *de se* and immunity to error through misidentification". *Rivista Internazionale di Filosofia e Psicologia* 5.2:184-206 (ISSN: 2039- 4667)
- Fiorin, G. and D. Delfitto. 2015. "A Case for Reference to Phenomenal Experience in Natural Language". *Cahiers de linguistique française*, 32:119-132.
- Gallagher, S. 2000. "Philosophical Conceptions of the Self: Implications for Cognitive Science". *Trends in Cognitive Sciences* IV.1:14-21.

- Higginbotham, James. 2003. "Remembering, imagining, and the first-person". In *Epistemology of language*, ed. by Alex Barber, 496–533. Oxford: Oxford University Press.
- Hornstein, Norbert. 1999. "Movement and control". *Linguistic Inquiry*, 30(1), 69-96.
- Landau, Idan. 2000. *Elements of Control: Structure and Meaning in Infinitival Constructions*. Dordrecht: Kluwer Academic Publishers.
- Kaplan, David. 1989. "Demonstratives". In *Themes for Kaplan*, ed. by Joseph Almog, John Perry, and Howard Wettstein, 581–663. Oxford: Oxford University Press.
- Landau, Idan. 2003. "Movement Out of Control". *Linguistic Inquiry* 34, 471–498.
- Landau, Idan. 2015. *A two-tiered theory of control*. MIT Press.
- Pearson, Hazel. 2013. *The sense of Self. Topics in the semantics of de se expressions*. PhD dissertation. Harvard University
- Pryor, James. 1999. "Immunity to Error Through Misidentification". *Philosophical Topics* 26:271-304.
- Recanati, François. 2007. *Perspectival Thought*. Oxford: Oxford University Press.
- Reinhart, Tanya. 2002. "The Theta System – An Overview". *Theoretical Linguistics* 28, 229-290.
- Reuland, Eric & Yoad Winter. 2009. "Binding without identity: Towards a unified semantics for bound and exempt anaphors". In S. Devi, A. Branco, & R. Mitkov (Eds.), *Anaphora processing and applications*. Berlin: Springer.
- Reuland, Eric. 2011. *Anaphora and language design*. Cambridge, MA: MIT Press.
- Reuland, Eric & M. Marelj. 2013. "Clitic SE in Romance and Slavonic revisited". In I.K. Chahine, *Current Studies in Slavic Linguistics*, John Benjamins Publishing Company.
- Rizzi, Luigi. 1978. "A Restructuring Rule in Italian Syntax", in S.J.Keyser (ed.) *Recent Transformational Studies in European Languages*, Cambridge (Mass.), MIT Press, pp.113-158
- Rizzi, Luigi. 1982. *Issues in Italian Syntax*, Dordrecht, Foris
- Shoemaker, Sydney. 1968. "Self-reference and self-awareness". *The Journal of Philosophy* 65:555-567.
- Wittgenstein, Ludwig. 1958. *The Blue and Brown Books*. Oxford: Basil Blackwell.

Wurmbrand, S. (2002). "Syntactic vs. semantic control". In C. J. Zwart, & A. Werner (Eds.), *Studies in Comparative Germanic Syntax: Proceedings from the 15th Workshop on Comparative Germanic Syntax* (pp. 95-129). Amsterdam: John Benjamins.

Zubizarreta, Maria-Luisa (1982) *On the Relationship of the Lexicon to Syntax*, Ph.D.Dissertation, MIT.