The Distribution of NOC and its + Human Restriction

1. Introduction

A central aim in Janke (2007) was to represent obligatory control (OC) without recourse to PRO. In this respect, it followed a line of works that have demonstrated purposefully (see Bresnan 1978, 1982; Brame 1977, Chierchia 1984, Evers 1988; Manzini and Roussou 2000) or incidentally (Borer (1989); Landau 2000), the irrelevance of PRO to the control relation. Another aim was to reduce OC to a modified form of binding which would retain the essence of the binding relation without invoking any dependency between lexical elements. It was shown that the differences between PRO and lexical anaphors (as documented in Lasnik (1992)) did not translate necessarily into differences between control and binding per se, but referred to the elements involved in these relations, rather than the relations themselves. Dispensing with PRO but retaining the relation avoided problems associated with reduction in this direction. This reduction was implemented by analysing control as a binding relation between θ-roles. Rather than positing an interpretative link between a PRO-subject and matrix argument, as in (1), it linked properties of θ-roles, by unifying the interpretative properties of the infinitive verb's θ-role with those of the θ-role assigned to the matrix verb's controlling argument, as in (1). This allowed the subject properties of the controlled infinitival to be retained by a path created by the external θ-role introduced by the infinitive verb. In this way, PRO was dispensed with, without losing the generalisations for which it was introduced.

(1) (a) Billy hopes PRO to win (b) Billy hopes to win
θ θ θ

Since interpretation in NOC structures is not pinned to a syntactic argument, NOC cannot be reduced to binding. But the redundancy of PRO to OC extends to NOC, so this paper will develop the PRO-free approach introduced for OC for application to NOC. The system of θ-role percolation devised in Neeleman and van de Koot (2002), and developed for OC in Janke (2007; 2008), will be supplemented by two extra-syntactic rules, which provide the external θ-role of NOC clauses with the appropriate amount of semantic content for both their generic and specific interpretations.

The present paper takes the motivation for a PRO-free analysis of control for granted[1], and starts by delineating the properties which distinguish OC from NOC, before moving on to the interpretations possible in NOC, distinguishing between generic and discourse-regulated interpretations. Section 4 sets out the main points of the system of θ-role copying devised in Neeleman and van de Koot (2002), and developed for control in Janke (2007; 2008). With the copying mechanism clear, section 5 introduces a structural restriction on the mechanism, thereby preventing over-generation. The focus of section 6 is the licensing of genericity. Two interpretative rules are formulated. One suffices for clauses with a generic interpretation and answers for the +human restriction evident in NOC. The other, regulated by Accessibility (as developed in Ariel (1988)), is a discourse metric, which steers the interpreter to NOC's specific interpretation. Finally, application of these rules is tested on structures beyond NOC, namely the linked reading effect (Lebeaux 1984) and null generic objects (Rizzi 1986).

2. Distinguishing NOC from OC

2.1 Properties of OC

The understood subject of OC clauses requires a theta-marked argument as its antecedent; this must be local, c-commanding and unique:

(2) a. $Bill_i$ tried [PRO_i to organise himself]
b. *It_i was tried [PRO_i to organise himself]
c. *$Bill_i$ thinks it was tried [PRO_i to organise himself]
d. *$Bill's_i$ aunt tried [PRO_i to organise himself]
e. *$Bill_i$ asked Ben_j [$PRO_{i\&j}$ to kiss Bobby behind the bike shed]

[1] Details can be read in Janke (2007).

Example (2)b) shows that the antecedent must be a theta-role-bearing argument, whilst (c) demonstrates locality. Example (d) establishes c-command is operative and (e) shows the ban on split antecedents.[2]

2.3 Properties of NOC

The restrictions operative in OC do not regulate NOC. NOC relations may conform to some of them, but they do not exhibit all and in some instances lack them entirely (see Williams 1980). These criteria give us the following candidates for NOC: infinitival subject clauses, as in (3)a), controlled interrogative complements, shown in (b), verbal gerunds as in (c), control with implicit arguments, displayed in (d and e) and long-distance control, in example (f).

(3) a. PRO To go to the lecture drunk wasn't one of your best ideas
b. Peter knows how PRO to fix the head gasket
c. PRO Walking back home yesterday, a brick fell on my head
d. It is fun PRO to dance (It is fun for x, for x to dance)
e. PRO To finish off one sentence in peace would be nice (for x)
f. Peter said that PRO to get there on time would be very difficult

Infinitival subjects, verbal gerunds and implicit control constructions have no structurally represented antecedent. The interrogative complement has a non-local argument in the super-ordinate clause, but this is not the antecedent for the implicit subject, which carries a generic interpretation. Long-distance control breaks locality, but also tolerates split antecedents, separating it further from OC:

(4) Peter said to Rita that PRO to get there on time would be very difficult for them

The first of our aims is to account for the distributional differences between obligatory and NOC:

I. Our theory should provide an account for why OC is subject to four conditions, which NOC is not: its antecedent is obligatory, unique, local and must c-command the understood subject.

In contrast to the absence of restrictions that mainly characterise NOC, this relation is subject to a semantic restriction which OC is not. As noted in Manzini (1983), in NOC, the understood subject must be interpreted as human. In OC it is possible to have non-human subjects acting as antecedents:

(5) a. This book$_i$ promises PRO$_i$ to be a great read
b. The film$_i$ tries PRO$_i$ to convey a humane side to the dictator.
c. The farmer needed the crop$_i$ PRO$_i$ to exceed last year's quota

NOC does not share this option. In (6) the verb used does not itself force a human interpretation of the infinitival subject, but it must nevertheless be human. Despite the inclusion of a potential antecedent (the book) and that no human is mentioned, the implicit subject is interpreted as a 'generic human', where its most accurate paraphrase is (6), not (c):

(6) a. This book is a great example of how PRO to entertain children.
b. This book is a great example of how one can entertain children
c. This book is a great example of how books can entertain children

The semantic criterion that NOC's understood subjects must meet then, says the following:[3]

[2] These last two restrictions have more recently come into question in Landau (2000) for reasons the present account rejects. Space considerations prevent their consideration but I refer the interested reader to Janke (2007).

[3] The formulation of the semantic criterion above may seem too strong in light of the example below:

a) Field mice are easy feed for the nocturnal owl. To go out at night, therefore, is a dangerous undertaking.

But such sentences are more indicative of our tendency to refer to non-human entities as though they had peculiarly human characteristics (such as our reasoning capacity) and in light of this they do not constitute counter examples to the +human requirement. Another potential counter example is (b) below. But there is reason to believe that this is a nominal gerund as opposed to a verbal gerund. Verbal gerunds, for example, do not take determiners, contra (c), and permit adverbs as modifiers, as opposed to APs, contra (d).

(7) Understood subjects of NOC must be +human

The +human characteristic of NOC constructions is something a theory of control must derive, and hence forms our second aim:

II. Our theory should account for why the understood subject in NOC is human.

In addition to this semantic restriction on the understood subject in NOC, such clauses carry independent tense:

(8) a. [Going to the lecture drunk today] will upset your mother next week
b. [Walking home yesterday] will guarantee you a lift today
c. Peter said yesterday that [to get there on time today] will be very difficult for him
d. $John_1$ knew already what [to buy him_1 in London tomorrow]

Independent tense becomes important when we formulate the LF-rule operative on these clauses' understood subjects. But first some space is dedicated to the different types of interpretations available in NOC, which will anticipate the interpretative rules introduced at the end of the section.

3. Generic and Discourse-Specific Interpretations in NOC

There are two different types of interpretation possible in NOC constructions, generic and discourse-specific. Each can be regulated by two different rules: one where the understood subject is interpreted generically and the other when it has a specific interpretation. Returning to (3)b and d), we can see that the interpretative subject is understood generically. Generic infinitival sentences do not express properties of any specific events or individuals but refer to generalisations over events, and to custom-like regularities:

(9) It is fun to dance
(10) Dancing the tango is fun

For these generic interpretations, if the understood subject were attributed with a +human specification by an LF-interpretative rule, this would provide the minimum semantic content for it to function as an argument. A (first) formulation of this rule is given in (11) below.

(11) LF-Rule: External Argument in NOC clauses is interpreted as [+human]
(Formulation I)

In both the sentences in (9) and (10), the interpretation is such that 'dancing is fun for people in general'. But adding a specific time reference steers away from the generic interpretation, and creates an expectation for a conversational cue to guide us to a referent for the dancer(s):

(12) a) It was fun to dance yesterday
b) Dancing the tango on Saturday night was fun

The interrogative structure in (3)repeated below as (13) also has a generic interpretation that moves towards a referential reading with the addition of an episodic marker, as in (13)b). And the addition of a reflexive, as in (14), goes further, by forcing an interpretation in which the understood subject is equated with the matrix subject.

(13) (a) Peter knew how to fix the head gasket
=Peter knew how one could/should fix the head gasket
(b) Peter knew how to fix the head gasket yesterday
(14) John wondered whether to talk to himself in public

---

b) Melting at room temperature is typical of ice
c) The melting of ice is expected at room temperature
d) Unexpected/*unexpectedly melting of ice at room temperature…

For both implicit and interrogative examples, then, a more specific rule than that in (11) must be made available, as +human does not do the possible interpretations justice. This is also so for examples which omit a generic reading, and require a specific antecedent, whether this is syntactically represented, but not locally, as in (3)or simply inferred, as in (3). For these, it will be argued that referential candidacy is determined by the degree of saliency of prospective antecedents. The notion of Accessibility, as developed in Ariel (1988), will determine how the +human reference supplied by the LF-interpretative rule is supplemented. Briefly, a separate discourse-governed rule will take the most accessible antecedent (where 'accessible' is defined below) in the discourse and link its reference to that of the +human argument:

(15) Discourse-Rule: An underspecified [+human] argument can only be linked to a highly accessible antecedent

Sections 5 and 6 develop the application of and restriction on these two extra-syntactic rules so that they cover all the NOC examples, whilst being blocked from over-generating into OC cases. The immediate section sets out the theta-based mechanism developed for OC in Janke (2007), which will provide the bridge to demonstrate the point at which the interpretative rules take over from the syntactic mechanism. It is in this way that the relations' differing distributions will be sourced.

4. Syntactically Regulated Control

4.1 Non-atomic *θ*-roles

On the present view of control, itself a development of Samek-Lodovici (2003), a θ-role is a non-atomic construct, whose components can be distinguished on the basis of their differing contributions to argumenthood. These include an argument component, whose task is to ensure that formal requirements such as structural position are met, and an interpretative component, whose task is to ensure that interpretative relations are secured. I label these A and B respectively.

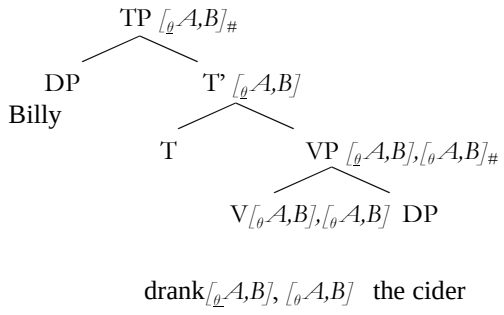
(16) A: Formal Licensing Component
B: Interpretative Component

A full representation of a θ-role includes both of these components, and in most circumstances their sub-parts go unnoticed, as they remain together as a complex.

(17) Θ-role = [$_{\theta}$ A, B]

Θ-roles are assigned to arguments via a system of recursive upward copying and one-step downward application, as developed in Neeleman and van de Koot (2002). A transitive verb's requirement for a subject and an object is encoded by its two θ-roles (one external, the other internal),[4] which percolate to the node immediately above an argument with the relevant property. Under immediate domination, the verb's requirements have been met. The θ-role assigned to the object in (18) stops percolating at VP, where it immediately dominates the direct object, whilst the external role continues until TP, where it immediately dominates the subject:

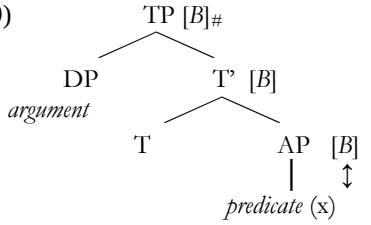
(18)



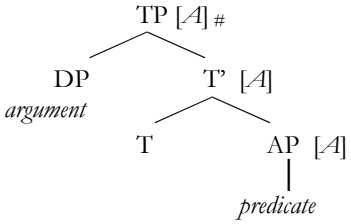
[4] For an explanation of how external and internal θ-roles are distinguished in this theory, I refer the reader to the original (Neeleman and van de Koot 2002). For expository purposes only, I represent the external θ-role as underlined.

If θ-roles are non-atomic, it should be possible to distinguish the differing roles of A and B, which collectively comprise θ-role assignment. One might also expect to find instances of A and B operating independently. Although a full explication exceeds the space restrictions of this paper, the examples in (19) and (20), illustrate their differing functions. Component A is concerned with a verb's adicity, whereas B is a syntactic representation of the predicate's argument variable. So when B's requirements are met, the argument variable representing the predicate's semantics receives a value. In (19), B is linked to the argument variable x and applied to the DP, with the result that the DP is interpreted as the argument of the verb. Component A, however, ensures that the verb's adicity and the number of DP-arguments projected in the structure correspond. Its application to an argument morphologically marked as such licenses that argument position[5]:

(19)



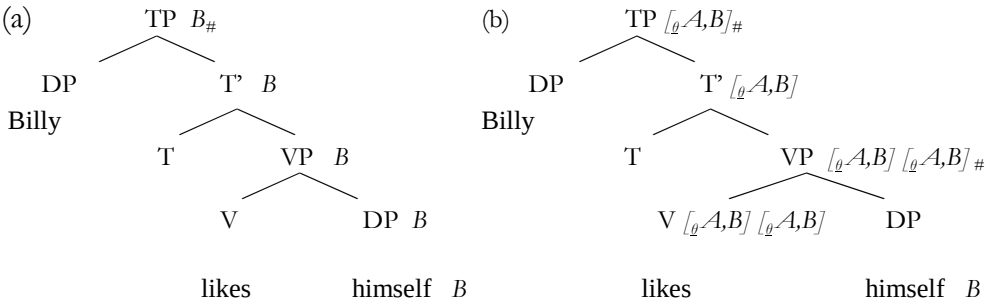
(20)



4.2 Control as Binding

But it is the B component which regulates control, being concerned with interpretation. The example (21)a) demonstrates how this component regulates relations independently of A, by looking at the asymmetric relation between a reflexive and its antecedent. A first thing to note is that a reflexive lacks referential properties itself, requiring an antecedent that enables it to be interpreted (a quantifier or referential category), and since this is a syntactically regulated requirement, this must be registered on the reflexive. By introducing just the selectional requirement, B, which essentially says 'bind me', the lexical encoding of the variable of the anaphor is represented. Via the same mechanism of percolation, the reflexive links to its antecedent: B percolates upwards from the anaphor that introduces it until it immediately dominates an argument that provides the variable with a value. Note that this is independent of regular θ-role assignment, also in operation, which for ease of exposition is represented on a separate tree in (b).

(22)



Similar to reflexives, OC infinitival clauses lack the referential properties necessary for interpretation. Their implicit subject's reference is determined by a designated argument in the matrix clause, either a subject or an object:

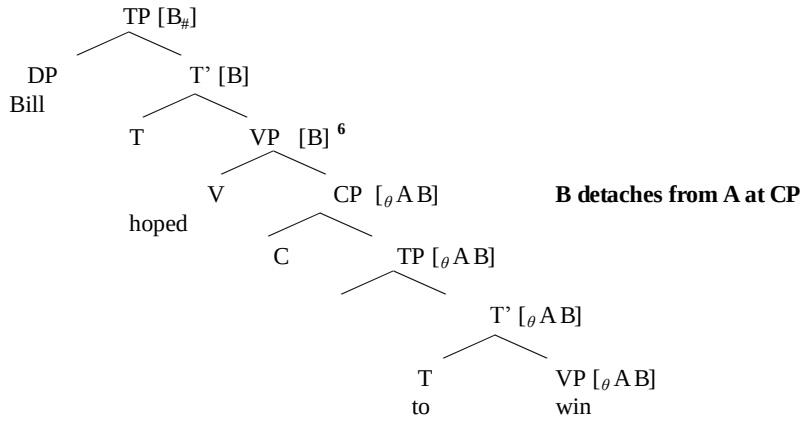
(23) (a) Bill_i hoped to win_i (b) Bill ordered Ben_i to dance_i

But unlike reflexives, there is no audible construct, which begs the question of where this selectional requirement should be encoded? The argument developed in Janke (2007) is that the external θ-role of infinitival complement's verb encodes this requirement, and which is the source of the subject properties apparent in control complements. And within this external θ-role, it is specifically the B component that forges the interpretative dependency between the infinitival clause and the matrix antecedent: the control verb selects for an infinitival CP of the control type (where 'type' is defined below), and this 'pull' from the control verb

[5] Marking is either case-marking on the category itself or via agreement with the verb.

licenses the B component of the external θ-role to detach from A and percolate in isolation beyond CP to an argument that can provide it with a value. Creating a thematic path, B percolates to a node where it immediately dominates its controller in the matrix clause. Under this configuration, OC results:

(24)



Note that A is not licensed to leave CP, allowing us to capitalise on a distinction between predication on the one hand and OC and reflexive binding on the other. Unlike OC and reflexive binding, predication cannot cross CP boundaries:

(25) (a) *Bill seemed that Ben met Mary drunk yesterday
(b) John arranged to win
(c) I arranged for myself to win ((18, 19 & 22) in Janke 2008)

With A and B as separable components, the problematic status of (25)a) lies with A: the A component of the θ-role cannot cross CP, thereby prohibiting predication across CPs. In contrast, the B component can cross CP, with the result that both binding and control are permitted across this boundary. Their both escaping this restriction lends support to the mechanism adopted here, which regulates both relations with the same component.

4.3. Regulation of *θ*-role decomposition

(25) shows that predication is more restricted than OC and binding. The tighter restriction on predication becomes relevant to any regulation implemented for θ-role decomposition, which must prohibit detachment of θ-role components in the former environments but not the latter. Kiparsky's Elsewhere Principle (Kiparsky 1973), which gives precedence to a more specific relation - predication in this instance -, will ensure that the dislocation of B from A (i.e. binding and OC) only occurs when complete θ-role percolation (namely predication) is barred:

(26) Given two competing rules, R1 and R2, which operate in two domains of application, D^1 and D^2, such that the D^1 forms a sub-set of D^2, then R1 will block R2 from applying in D^1.

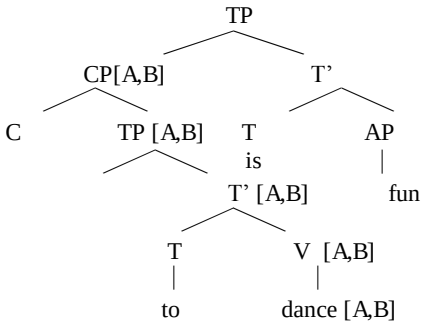
Θ-role decomposition makes it possible to distinguish two key components that contribute to argumenthood: interpretation and case. It is the interpretation of the infinitival subject that is relevant to the control relation, not its case, and θ-role decomposition makes this representation possible, by retaining the thematic path of the external θ-role and linking its interpretative component to the designated argument of the control verb (thereby distinguishing this approach empirically from one based on raising as in Hornstein 2001). In the next section, I return to NOC, demonstrating where the syntactic analysis is superseded by the non-syntactic one, which in turn, will help to derive the differing distributions of these relations, as per Aim I.

[6] This is a slight simplification of the original, which employs θ-role identification (where B identifies with the matrix verb's external theta-role, but the present rendition does not affect the arguments made within.

5. Structural Restrictions on Copying: Deriving the OC/NOC Divide

The syntactic mechanism developed for OC does not NOC, since in NOC there is (often) no structurally represented antecedent at all. The example of implicit control below shows that however far the θ-role of the verb percolates[7], there is nothing in the structure to function as a semantic argument, rendering the copy procedure futile. As such the θ-role remains unassigned.

(27)



But NOC and OC do have their introduction of an external θ-role in common, and the principle of Full Interpretation requires the interpretative component of this θ-role (B) to have the content of a semantic argument. The two control types differ in how this is achieved. In the OC-relation, saturation of the interpretative component occurs syntactically via the copying mechanism, where B separates from A and percolates to an antecedent in the matrix clause. In the NOC-relation, this is achieved by semantic means. B is specified as [+human] at the LF-interface, a specification which can be supplemented by a discourse rule directing it towards a highly accessible antecedent (detailed below). There are two ways then, of specifying how the external θ-role is semantically interpreted:

(28) (I) Specify B as human
(II) Copy B to (an antecedent in) the super-ordinate clause

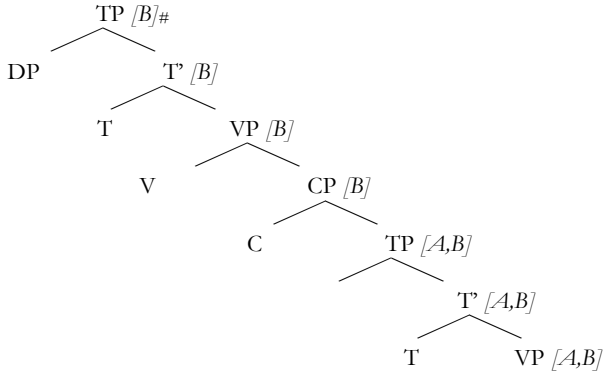
(II) is the mechanism of percolation at work as discussed above. (I) needs regulation. At this point, I assume that tensed TP forms a choice point at which (I) above becomes available, with a view to refining this later. The option is recursive, becoming available at every tensed TP.

(29) At tensed TP: B can be specified as + human (First Formulation)

5.1 Deriving the OC Distribution

We have seen where option (I) in (28) becomes available, but the circumstances governing its availability must be restricted to avoid massive over-generation. OC resulted when the B separated from A at CP. Separation was regulated by the Elsewhere Principle. Through its preference for whole θ-role percolation, this principle ensures that copying of B in isolation only occurs when whole θ-role percolation is impossible, such as across infinitival CPs.

(30)



[7] A restriction on θ-role percolation is formulated later, ensuring that no over-generation occurs.

But although Elsewhere makes separation of B from A possible, something extra needs to be said about how and why the θ-role goes beyond TP in the first place. For Elsewhere to kick in, it must be that (29) does not occur in OC structures. Given that OC constructions contain control verbs, which demand a certain type of complement, we might expect the divergence in terms of percolation beyond TP to fall out from this difference. The claim here is that the OC-head syntactically selects for a CP with an unassigned B.

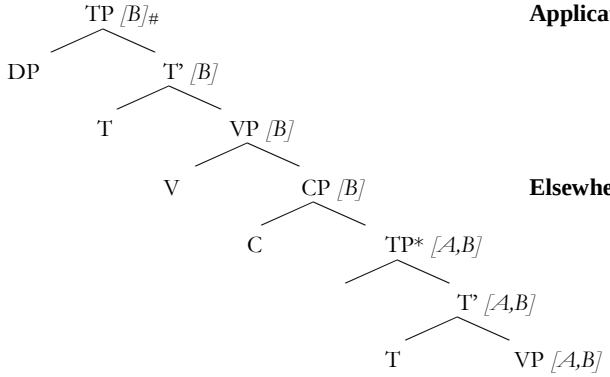
(31) OC-type head selects for a CP with an unassigned B

The structures for which such syntactic selection occurs include subject-control structures, object-control structures and some headed by adjuncts:

(32) Paul hoped to sleep well that night
(33) Peter persuaded Paul to get a good night's sleep
(34) Peter crossed the road while speaking to Paul

In examples (32) and (33), the matrix verb selects for an unassigned B in its CP-complement, whereas in example (34), it is the head of the adjunct that selects for the unassigned B. This selection by the controlling head in the super-ordinate clause for a B in its sister node provides the pull for the copying of the unassigned B out of the embedded clause. The tree below demonstrates the point at which Elsewhere allows for the separation of B from A, and its application to the DP.

(35)

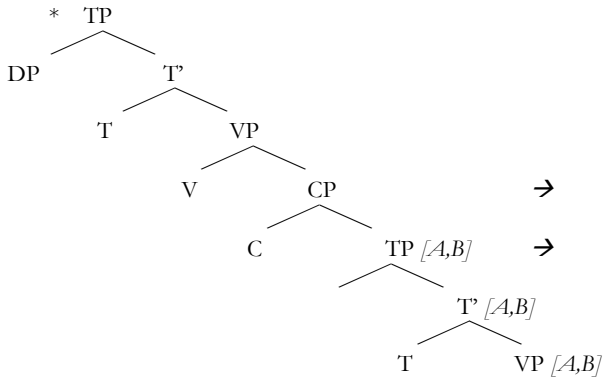


Application of B to the DP-controller:[8]

Elsewhere allows A & B to separate

If the option to specify B as human, were available at the TP* in (35), the saturated θ-role would not percolate further. This would ignore the selectional requirement of the controlling head for a CP with an unassigned B:

(36)



→ **No unassigned B on CP**

→ **+ human specification**

(29) does not require all constructions with verbs that select complements to be OC structures. In (37) below, the infinitival clause is a complement selected by suggest, but this is not an OC structure, as the absence of any structurally represented antecedent attests:

(37) John suggested to leave at once

[8] Again, this rendition ignores the θ-role identification between the infinitival and matrix verb's external θ-role.

In the right context, this can either mean that I leave, that you leave or that we leave, but John need not necessarily be included.

5. 2 Deriving NOC

Having carved out the distribution of OC, we can now set this against NOC, which in the main, characterises those instances of control which are not selected by the matrix control verb. The only exception is the class of interrogatives, whose complements are selected, but it will be argued later that copying in the sense of (31) above is absent. Essentially, we will see that the complement of a wh-expression must be an open proposition.
Aside from interrogatives, NOC structures are not complements, so their B-components are not selected for by control heads. Deferring discussion of interrogatives until last, these structures included infinitival subject clauses (38), verbal gerunds (39), control by implicit arguments (40) and long-distance control (41):

(38) [To go to the lecture drunk] wasn't one of your best ideas
(39) [Walking back home yesterday], a brick fell on my head
(40) It is fun [to dance]
(41) Paul said that [to get there on time] would be very difficult for him]]

In all these examples, the θ-role receives an interpretation within its clause via the option in (29). On economical grounds, this option available in tensed TPs should be taken. Copying derives a more complex structure, where what determines complexity includes the number of copies of θ-roles in a given structure. A structure with fewer θ-roles is more economical, making (I) the preferred option. Examples (38) and (39) are of a clause-initial infinitival subject and gerundive subject respectively, so their NOC characteristics follow straightforwardly. In both cases there is no pull from a control verb to extract the B-component from of its clause, since the verb does not select for a clause with an unassigned B. In the absence of selection, the more economical option is preferred and the external θ-role of each clause is subject to the LF-interpretative rule that specifies the argument variable as [+human].[9] Examples (40) and (41) also involve subject-clauses. The former is an example of extra-position, the latter that of an embedded subject within a complement, so again the fact that their external role is interpreted within the clause follows straightforwardly. I now return to interrogatives and how to reconcile them with the rule in (29).

We saw in (31) that OC verbs select for a CP with an unassigned B-component. In virtue of the unassigned B component copying to the super-ordinate clause, the complements of OC verbs are predicates. But the infinitival verb in NOC has an external θ-role with a +human specification. Absence of copying, and assignment of a +human specification makes the NOC infinitival clause a proposition. But what of interrogative complements? These are selected for by their matrix verbs, but the wh-feature introduced by interrogatives must have a proposition with only one open position in its scope, namely that of the bound variable:

(42) +wh scopes over a proposition that contains a variable bound by the wh

Interrogative complements must be propositions since questions are only formed from propositions. A good precedent for this assumption can be found in Karttunen (1977). In this work, a question is formed in two steps. The first is that of constructing a "proto-question", which has an operator attached to the front of a proposition, whereas in the second, this proto-question is manipulated to make a real question. But crucial for present purposes, is that one can only make a proto-question out of a proposition, so everything which ends up as a question starts out as a proposition. (see especially Hamblin (1973) and Karttunen (1977)). Even in Groenendijk and Stokhof (1989) for whom interrogatives do not always denote propositions (not always being of type t), interrogatives are always of a type made from s and t, that is, nothing which indicates any missing arguments.

So there is a conflict of interest in terms of what a control verb selects for syntactically and what it requires semantically. On the one hand it demands a CP with an unassigned B, which makes the complement a predicate, and on the other, the wh-feature of the interrogative requires its complement be a proposition. To attribute C'/TP with both would result in a contradiction, since the infinitival cannot be simultaneously a predicate and a proposition:

(43) * [unassigned B, +wh] → [predicate and proposition]

The alternative pursued here is that verbs with interrogative complements, such as know in (13)a**)** select a CP, but not with an unassigned B. Without the pull from the matrix verb, the B-component of the external role is not

[9] We return to the discourse metric that fleshes this +human specification out below.

copied beyond TP, but specified as +human, which fits in well with their generic character and also falls in place with their NOC classification.

There is a crucial respect in which OC and NOC differ. OC comprises the controlling predicate's syntactic selection of a CP with an unassigned B, and the copying of this unassigned B to the controlling argument in the super-ordinate clause. This binds the infinitival to the designated controller. It is the absence of this first component in NOC that is responsible for its different distribution: Infinitival subjects and gerunds have no higher predicate that select for a B-component and interrogative complements do not make a syntactic selection for a CP with an unassigned B. With this we arrive at the first of our aims set out in section 2.

I Our theory should provide an account for why OC is subject to four conditions, which NOC is not: its antecedent is obligatory, must be unique, local and must c-command its understood subject.

In the next section, I turn to the implementation of the LF-interpretative rule introduced in (15), which applies in all NOC environments, including those that have a generic interpretation, those whose interpretation comes from an antecedent in the structure, and also those whose reference is determined by a specific inferred argument. Starting with generically interpreted clauses first, we will see that although the +human specification afforded by the rule is exactly the right amount of information for their interpretation, these complements' genericity must also be licensed at the semantic level. I look first at interrogative complements, and then at implicit constructions.

6. From Generic Readings to Specific Readings

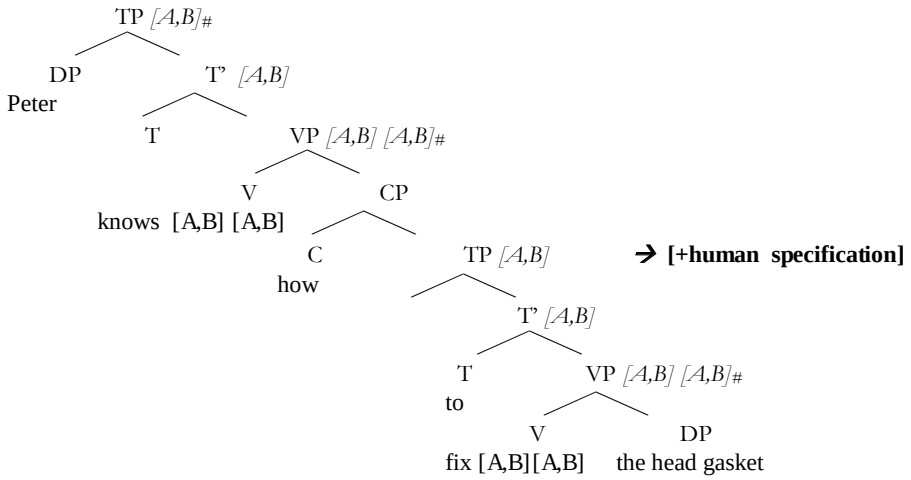
6.1 Interrogatives: syntactic vs. semantic selection

In the main, the understood subjects of interrogative complements receive a generic interpretation, their nearest overt counterpart being one. But in addition to this understood subject having a reference distinct from the overt argument in the matrix, interrogatives have a modal feel to them, as demonstrated in Bhatt and Izvorski (1998), where they are matched to their nearest paraphrases: (Bhatt and Izvorski's 36 and 37):

(44) (a) Matt knows how to solve the problem
(a') Matt knows how one could/should solve the problem
(b) Daniel knows what to do with one's life[10]
(b') Daniel knows what one should/could do with one's life

Falling under NOC, the representation of interrogative complements proceeds as shown in (45). Their external θ-role is copied up to TP, and in virtue of the LF-rule in (29), it is attributed with a +human interpretation.

(45)



[10] This sentence is not available in my grammar, but another attributed to Chomsky in Lebeaux (1984), which makes the same point, is: John asked Bill how PRO_{arb} to behave oneself under such circumstances.

Through this +human specification, a generic interpretation becomes possible. Having been specified, no further copying of the θ-role is motivated so it remains in the infinitival complement. Failure to copy the θ-role further, makes this complement a proposition, as required by the wh-feature. The generic operator, introduced by the hidden deontic modal, is of semantic consequence:

(46) Peter knows [how to fix the head-gasket]
→ scope of genericity

Despite the infinitival being a complement of the interrogative verb, the selection is not of the OC type. That is these verbs do select for a CP, but not a CP with an unassigned B. Such syntactic selection would render the complement a predicate, which would contravene the semantic requirement for the complement of the wh to be proposition.

6.2 Licensing implicit readings

I return now to the example of 'implicit' control, in which an inferred generic argument is felt:

(47) It is fun to dance

Bhatt and Izvorski (1998) would claim that fun has an implicit argument, itself generic and it is this that controls, and hence determines, the interpretation of the implicit subject. In fact, they make the stronger claim that an arbitrarily interpreted PRO is always dependent on a generic implicit argument. On this account, two factors predict whether PRO can be interpreted generically: an implicit antecedent and that antecedent's genericity, neither on its own being sufficient. It is not clear whether the implicit argument on which PRO is dependent for its interpretation in their proposal is posited as a structurally represented one:

(48) PRO_{arb} ↔ Generic implicit argument in the immediately higher predicate
(Bhatt and Izvorski's (19)

But this formulation appears to be too strong, whether or not it refers to an implicit generic argument at the syntactic or the semantic level:

(49) Bill: The headmaster just phoned
Ben: What did he say?
Bill: He said to introduce yourself to the class before he arrives.
('He said to me that you should introduce yourself to the class before he arrives')

If in the above example, the matrix verb said has an implicit argument, this argument's reference must be the speaker, Bill, and Bill is not the antecedent of the subject of the infinitival clause, which is understood as the addressee, namely Ben. So the claim that arbitrary PRO is always referentially dependent on an implicit controller in the immediately higher predicate is too strong. A weaker statement that replaces the bi-conditional with a conditional can perhaps be upheld:

(50) If there is an implicit argument then PRO co-refers with that argument

Thus amended, it accounts for the interpretation in (51).

(51) To dance is fun

Note that examples such as (52) below, set against the indexical predicate in (51), do not prove that PRO_{arb} always has an implicit controller:

(52) *To dance is certain/likely/sure

Certain and such predicates express the extent to which something is true or false, whereas dance expresses an activity. Since activities don't have truth values it is expected that the latter cannot be predicated of the former, making the example orthogonal to the issue of implicit arguments. If we use an adjective which says nothing about truth, or a DP, that predicate's combination with to dance is felicitous:

(53) (a) To dance in tap shoes is noisy
(b) To dance drunk is a messy affair

The adjective noisy also has no implicit argument, yet the sentence still carries a generic reading. So an account of generically understood subjects in infinitivals does not necessarily depend on the presence of a generic implicit argument. The weaker claim here is that the θ-role's +human specification enables the generic interpretation And both of the examples below allow for a generic interpretation:

(54) (a) It is fun to dance
[For people in general] [it is in general fun to dance]
(b) Peter knew how to fix the head gasket
Peter knew how one should fix the head gasket.

So the generic interpretation is not necessarily due to another generic implicit argument, but does it depend on anything else? If we look again at the example in (54)a), we can see a double layer of genericity, as indicated by the brackets. The existence of two different sources of genericity is revealed by examining its possible interpretations. First, note that generics differ from universals in that the former allow exceptions, where as the latter do not:

(55) a. It is fun to dance
b. It is always fun to dance

Example (a) above is a true statement even if we can think of an occasion when it isn't fun to dance. The universal added in (b) however, would not be true if we could think of an occasion on which dancing would be less than pleasant. To test whether (54), repeated here as (56)a), has two sources of genericity, we can see if insertion of a universal before people, as in (b), or fun, as in (c), is tolerated. Exceptions are indeed possible in two places, since the interpretation of the sentence in (a) does not entail either (b), (c) or (d) below:

(56) a. For people in general it is in general fun to dance
b. For all people it is in general fun to dance
c. For people in general it is always fun to dance
d. For all people it is always fun to dance

These examples illustrate two independent sources of genericity in such an infinitival: the unassigned θ-role that is attributed with a +human specification and a generic operator, operating at sentence level. But although we have seen that the generic reading of the +human θ-role exists independently, there is reason to believe that this interpretation is still in need of licensing by a generic operator. There are no examples of a generic subject, for example, when the sentence in which it sits is not generic as a whole. Recall that insertion of an episodic marker makes a generic reading of the sentence impossible:

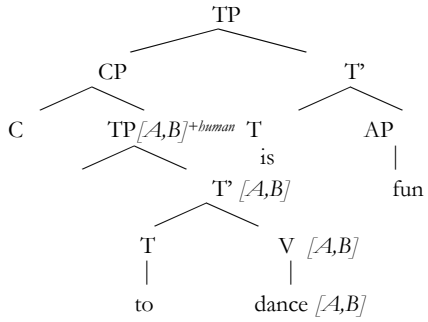
(57) It was fun to dance yesterday
≠ 'It was fun for people in general to dance yesterday'

What this effectively does is remove the matrix generic operator and with that the availability of a generically understood subject. So it seems that when the whole structure is within the scope of a generic operator, the structure licenses the genericity of the understood subject if that subject's specification is minimal. The +human specification that follows from the LF-rule, repeated below in (58), qualifies as such. It still remains to show that this rule operates independently of control constructions, an issue to which we return last.

(58) LF-Rule: An unassigned θ-role is interpreted as +human

The external role of the infinitival verb percolates to TP, the point at which the +human specification option becomes available. With this minimal specification, the generic interpretation is made available, but through the generic operator at sentence level, the interpretation is licensed.

(59)



The sparse nature of its specification makes it compatible with a generic reading, but will allow it to be enriched when a particular antecedent suggests itself, for example when an episodic marker such as yesterday is added. The addition of such a marker removes the possibility of a generic reading of the understood subject. If the θ-role's specification were any more detailed, this specification might clash with those of the particular antecedent with which it might be subsequently linked. This argument is developed further in the next sub-section, where I turn to the discourse metric that fleshes out the interpretation of +human θ-roles in non-generic contexts.

6.3 Discourse-Regulated Antecedents

A +human specification renders a θ-role compatible with generic readings, where minimal specification is required, but something more is needed for those instances in which the reference of the inferred subject is concrete:

(60) Peter said that [to get there on time] would be very difficult.
(61) Walking back home yesterday, a brick fell on my head
(62) To finish off one sentence in peace would be nice

A pragmatically governed rule, which directs an underspecified argument towards a highly salient conversational cue for interpretation, will supplement this minimal specification:

(63) Discourse-Rule: An underspecified [+human] argument can only be co-referential with a highly accessible antecedent

What makes an antecedent highly accessible can be determined using a metric along the lines of that developed in Ariel (1988), in which it is shown that the weaker a referential dependent, the more salient its antecedent must be. I begin by motivating an extra-syntactic mechanism, before introducing Ariel's metric.

Syntactically speaking, non-anaphoric expressions are free, but in practice something in the discourse restricts them:

(64) As for Billy's girlfriend, her mother can't stand h'r

Syntax allows us to construe the reduced pronoun *h'r* as distinct from the DP Billy*'s girlfriend*, but the fact that they are understood as co-referential points to something extra-syntactic regulating our use of referential expressions during discourse. Accessibility, as developed in Ariel (1988), in which it is argued that the form/content of a (pro)noun instructs us as to how to link it to an antecedent, allows us to represent this. The basic idea is that the more information a (pro)noun encodes, the less obvious its antecedent needs to be and using these criteria, (pro)nouns are ordered on a hierarchical scale. At one end lie low accessibility markers, such as proper nouns, used by a speaker who is unable assume that their addressee has any prior knowledge about who the speaker is referring to. The more lexical material an accessibility marker includes, the lower on the scale it is, which makes sense given that each addition contributes more information. At the opposite end of the scale, lie high accessibility markers, which are those expressions used when a speaker can assume their addressee has immediate or easy access to their referent. In terms of saliency, 1st and 2nd person make more accessible antecedents than 3rd person, since they refer to people directly involved in the discourse. Zero pronouns are the highest accessibility markers, always requiring highly accessible antecedents. The omitted subject of the diary-drop style of speech, as in (65) is strongly biased towards an interpretation in which it is understood to be the 1st person. Since the speaker of the discourse is the most accessible antecedent, any other interpretations, although compatible with the form of the verb, would be at odds with the contextual cues available and communication would fail.

(65) (a) Went to the lecture yesterday. Fell asleep. Got a D for the essay.
(b) #John went to the lecture yesterday. Sue fell asleep. You got a D for your essay.

Given their absence of lexical material, control subjects must be at the top of the accessibility hierarchy. But whereas those of OC pattern with reflexives in that their referential sources are sought syntactically, the inferred subjects of NOC tally better with the restrictions on pronouns: there may or may not be a linguistic antecedent, but if present it need not be local or in any particular configuration. With these distinctions in mind, the following Ariel-based hierarchy of accessibility can be constructed, where (1) indicates markers of high accessibility and (5) low:

(66) 1) null pronouns
2) clitics/weak pronouns
3) strong pronouns
4) definite descriptions
5) proper nouns

Factors which grade the referential forms above according to how accessible their antecedents must be include saliency, for example if their antecedent is marked as a topic, competition between referential candidates and distance between a (pro)noun and its referential source:

(67) a) Saliency - topicality
b) Competition - presence/absence
c) Distance -local/inter-sentential/intra-paragraph

Application of the principles behind Accessibility can guide interpretation of non-obligatorily controlled clauses in the following way. Recall first that the discourse rule, repeated below, restricts their interpretation to an antecedent that is highly accessible:

(68) Discourse-Rule: An underspecified [+human] argument can only be co-referential with a highly accessible antecedent

NOC-subjects lie at the top end of the scale: they demand their referential sources to be highly salient, free from competitors and if present in the structure, closer than other potential candidates (67). The residual NOC structures for which we must still account are long-distance control, verbal gerunds and non-generic implicit control cases:

(69) Peter said that to get there on time would be very difficult.
(70) Walking back home yesterday, a brick fell on my head
(71) To finish off one sentence in peace would be nice

Taking long-distance control first, the understood subject does have one potential antecedent in the super-ordinate clause, marking it as the most accessible antecedent vacuously. There are no other competitors and Peter is the topic of the conversation, so a construal under which the understood subject is interpreted as a third unmentioned party, say Paul, is barred. If, however, Paul is mentioned in the discourse, then distance and salience regain significance:

(72) Paul was confident that he could attend the concert and still make it to the viva on time. Peter said that to get there on time would be very difficult.

Despite there being two competitors for the understood subject, and Peter being closer, the most salient and therefore most obvious antecedent choice is Paul, the topic of the conversation. But the sparse information provided in (72) does not absolutely rule out an interpretation in which both Peter and Paul for example, are the antecedents of the understood subject and this is exactly what is required from a pragmatically driven rule, which should guide rather than direct absolutely. Paul remains the preferred option, but both Peter and Paul together remain possible antecedents.

The verbal gerund in (70) can be accounted for similarly. Again, there is an understood subject with no visible lexical features, making 1st or 2nd person, both of whom are present in the discourse to hand, most accessible and hence preferred antecedents. The 1st person possessive pronoun in the following clause, however, provides the crucial cue and we interpret the understood subject as 1st person (73)a) rather than 2nd (73)b).

(73) a) Whilst I was walking back home yesterday, a brick fell on my head
b) #Whilst you were walking back home yesterday, a brick fell on my head

Lastly, the case of implicit control, where the implicit argument refers to someone specific, also follows from Accessibility Theory without complications:

(74) To finish off one sentence in peace would be nice

The indexical predicate nice has an inferred argument which may or may not be represented structurally, but for present purposes it is enough that it is the only conceivable antecedent for the infinitival's understood subject, there being no other competitors.

Having illustrated how the combination of the discourse rule in (68) and Ariel's notion of Accessibility can regulate the interpretation of the unassigned external θ-role, this section ends with evidence for the extra-syntactic nature of this rule. Firstly, recall that the OC relation comprises two key parts: the control verb's specification for a designated controller and the copying mechanism which carries out this direction, by linking the interpretative components of the two θ-roles. I have argued that NOC lacks this first component entirely, in that there is never a higher predicate that selects an NOC clause in the way that occurs for OC. In the absence of such selection, the discourse rule comes into play, by filling the reference of the underspecified external θ-role. But this discourse-rule should not be able to interfere with the interpretation of OC-subjects, whose reference is regulated syntactically. (77) suggests that is so. First, observe the function of the topic marker, as for, in example (75)a) where it marks Peter as the topic. Topic-hood makes Peter a highly salient prospective antecedent so the external θ-role of the infinitival is directed towards it for its reference. If demoted from this salient topic position, however, Peter cannot be the antecedent of the infinitival's understood subject, as indicated in (b):

(75) (a) As for Peter, the boss suggested to align himself with the union.
(b) *As for Peter's sister, she suggested to align himself with the union.

Note that demoting Peter from topic position does not have any effect on an overt pronoun. This is expected as overt pronouns do not require an equally high accessible antecedent, so they do not need to link back to a topic:

(76) As for Peter's sister, she suggested he align himself with the union.

Topic-hood also has no impact on OC examples, showing that this extra-syntactic referential aid cannot interfere with a relation that is regulated syntactically. In (77), despite John being marked as the topic, it cannot be the antecedent of the infinitival. The control verb's specification that its complement be predicated of its external argument cannot be overridden: Mary must be the infinitival's interpreted subject.

(77) *As for $John_i$, Mary promised him Θ_i to leave

This section and the one preceding it has offered two rules, which collectively have covered the interpretations in NOC structures. In all of these structures, the external role of the infinitival clause is subject to the LF-interpretative rule through which the θ-role receives a +human specification. Generically interpreted clauses, among which are those with implicit arguments not modified by an episodic marker and interrogative complements whose subjects can be paraphrased as one, are subject to this rule alone. Long-distance control cases and implicit control cases that are interpreted specifically, are subject to the additional discourse rule, which supplements the +human specification. The rule, guided by Ariel's Accessibility, steers interpretation to a highly accessible referential source.

In the next section, these rules are extended to two different phenomena. The first is the so-called linked reading effect (see Lebeaux (1984)), and the second is the generic null-object in Italian, as described in Rizzi (1986). This null-object is of potential significance to the LF-rule introduced for understood subjects, since it implies that this rule operates on objects, too. The widening of this rule's applicability beyond that of understood subjects, takes it in the direction of a general grammatical principle.

7. The Linked Reading Effect and Null Objects

7.1 The Linked-Reading Effect

When two NOC clauses combine in the same sentence, their understood subject must usually co-refer. Lebeaux (1984) provides some examples that demonstrate this linked-reading effect:[11]

(78) a) Θ_1 making a large profit as a slum landlord requires $\Theta_{1/*2}$ exploiting the tenants
b) Θ_1 becoming a movie star involves $\Theta_{1/*2}$ being recognised by everyone
c) Θ_1 to know him is $\Theta_{1/*2}$ to love him

In each of the examples above, the understood subject of embedded verb must be interpreted as identical to the understood subject of the uppermost verb. Despite the strong preference for shared reference, Rizzi (1986) offers the following example in which two arbitrary subjects may refer to different entities:

(79) It is difficult Θ_1 to hope that $\Theta_{1/2}$ winning the race will be easy (Rizzi's 24d)

It is not easy to produce such examples, in fact, once we factor out those verbs that centre around competitions, such as win, lose etc, the preference for a linked reading is very strong:

(80) a. #It's difficult Θ_1 to expect that Θ_2 reading the book will be easy
b. #It's unwise Θ_1 to hope that Θ_2 bringing the train in on time will be likely

It could be that the example in (79) is more akin to that provided in Williams (1980), where for some speakers there need not be strict identity between the understood subject and its antecedent; it is sufficient that the antecedent include it:

(81) I_1 want Θ_{1+} to meet at 6. (Adapted from Williams' 68)

Such constructions have more recently been labelled as partial control in Landau (2000). If one thinks of the way in which spectators of sport often include themselves when expressing how their team fared, the absence of an obligatorily linked reading in (79) might only be an apparent one:

(82) Bill: How did Man-U do on Saturday?
Ben: Ah, we were robbed. The referee had it in for us from the start…

Noteworthy in Lebeaux's original examples, is their generic character. When paraphrased, the nearest overt counterpart to each of the null-subjects is the indefinite pronoun one:

(83) a) For one to make a large profit as a slum landlord requires one to exploit the tenants
b) For one to become a film star involves one being recognised by everyone
c) ?For one to know him is for one to love him

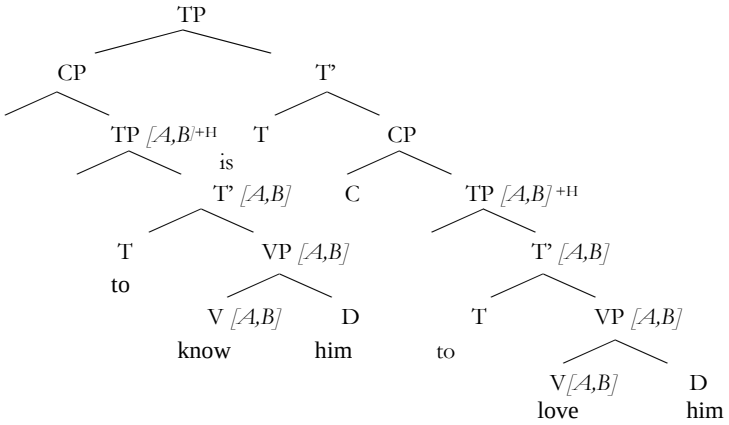
The overt generic pronouns above are also unable to refer to different entities, which must question whether the linked-reading effect is an issue peculiar to control. However, application of the LF-rule in (58) to the unassigned external role of each infinitival in Lebeaux's original examples in (78), will restrict the interpretation of the argument variable represented by each θ-role to +human. At this point, with two minimally specified θ-roles, we need only recall the weaker version of Bhatt and Izvorski's generalisation of implicit control, repeated from (50).

(84) If there is an implicit argument than PRO co-refers with that argument.

Translated into current terms, this would mean that the unassigned θ-role, which has been attributed with the +human specification, will share its reference with another unassigned θ-role if present:

[11] With the current PRO-free analysis of control in mind, I use the θ-role notation (Θ) to indicate that it is the external θ-role that is relevant in this relation.

(85)



If we provide a reference for the understood subject in the embedded clause in the examples in (80), the generalisation in (84) is no longer relevant. The reference of the understood subject is supplemented, as guided by Accessibility, with the result that it no longer depends on the interpretative subject in the matrix clause for its reference.

(86) a. It's difficult Θ_1 to expect that Θ_2 reading the book will be easy for Billy.
b. It's unwise Θ_1 to hope that Θ_2 bringing the train in on time will be likely for British Rail.

But does this leave Rizzi's exception to the linked reading effect without an account? Aside from the English example, Rizzi (1986) shows that in Italian it is also possible to have two instances of arbitrary interpretations, whose references are distinct from each other. The example in (87)(a) has the possible interpretation given in (b)[12]

(87) a. È difficile [$PRO_{arb'}$ sperare [che il governo possa autorizzare $\_\_\_{arb''}$ a PRO vivere così
'It is difficult[PRO to hope [that the government can authorise___
[PRO to live like that]]]'
b. 'It is difficult for x to hope that the government can authorise y to live like that'.

(Rizzi 1986 his 25b)

But again, note that a paraphrase of (87), which uses the overt counterpart of the null generic pronoun, la gente, may also have an interpretation such that the two pronouns are understood as being distinct from one another. The sentence in (88)a) can take (b) as one of its possible interpretations:

(88) a. È difficile per la gente sperare che il governo possa autorizzare
is difficult for the people to-hope that the government could authorize

la gente a vivere cosi'
the people at live like-that.

'It is difficult for people to hope that the government could
authorise people to live like that'

b. 'It is difficult for x to hope that the government could authorise y to
live like that'.

Marco Tamburelli (pc) provides the following context in which such an interpretation becomes available: we are discussing how birds, unlike humans, are free because they can fly from one country to another without having to carry a passport. When I suggest that voters should only elect a government that includes this as part of their manifesto, you utter the sentence in (a) above, which could mean: It is difficult for people (i.e. voters in general) to hope that the government could authorise people (i.e. human beings) to live like that".

[12] For evidence that this interpretation is one of real ambiguity, I refer the reader to the paper itself, in which Rizzi induces a Principle B violation when the two null-categories share governing categories.

The availability of this referential dissociation is important because it again points to the linked reference between the understood subject and object being a problem that is orthogonal to control. Syntactically speaking, the linked-reading effect is accidental and given that the rules of discourse guide us as to their interpretation, the existence of a minority of counter examples is exactly what is expected and desired from a such a rule, which should be set to prefer the norm, yet be sufficiently pliable not to bar the limited amount of deviance from this norm.

7.2 Null Objects

The interface rules proposed here for unassigned external θ-roles have no subject/object asymmetry intrinsic to them, so should be applicable to unassigned internal θ-roles. Rizzi (1986) documents a series of constructions in Italian that look very much like unassigned internal θ-roles. These null-objects exhibit syntactic effects, making it clear that their θ-roles are projected. Implicit objects are found in Italian and English:

(89) (a) This leads (people) to the following conclusion
(b) Questo conduce (la gente) all seguente conclusion

(90) (a) This sign cautions (people) against avalanches
(b) Questo cartello mette in guardia (la gente) contro le valanghe

(Rizzi 1986 his 1 & 2)

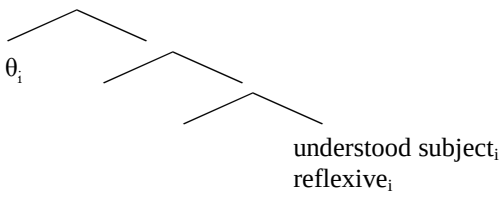
Rizzi (1986) provides five counts of evidence that the generic null pronoun of Italian is syntactically active, unlike its English counterpart. Here I concentrate on two. Contrary to English, Italian null objects can control (91) and bind (92).

(91) a) Questo conduce ___ all seguente conclusione
a') Questo conduce ___ a [PRO concludere quanto segue]
'This leads ___ to conclude what follows'
b) This leads ___ to the following conclusion
b') *This leads ___[PRO to conclude what follows] (Rizzi's 6b &d and 8b & d)

(92) a) La buona musica riconcilia ___ con se stessi
b) *Good music reconciles ___ with oneself (Rizzi's 11)

In Rizzi (1986) it is argued that Italian hosts a null pronoun, which receives θ-role, whereas the null pronoun of English is not projected and the relevant θ-role is saturated lexically. In line with rest of this paper, I formulate the contrast in terms of the θ-role: in Italian the θ-role projects and in English it does not. In the Italian null-object construction, the object properties are interpreted in terms of the internal θ-role of the matrix verb. This internal role controls the reference of the understood generic subject in (91)a), and the antecedent of the generic reflexive in (92).

(93)



No null-object projects, so the internal θ-role remains unassigned. This allows the θ-role to percolates to VP, its maximal extension. To be the antecedent of the understood generic subject in (91)a) and of the generic reflexive in (92), the θ-role must be minimally specified, which is what the LF-rule introduced for the external θ-role of infinitivals can provide:

(94) LF-Rule: Unassigned θ-role is interpreted as +human

If on the right track, a reformulation of the choice point at which the rule above becomes available is in order. In section 5 the point was assumed to be TP (see (29)), on the basis of CP blocking θ-role percolation. Since the maximal extension of an internal θ-role is VP, we can reformulate rule in (94), so that the option to interpret a θ-role as +human becomes available when that θ-role reaches its maximal extension:

(95) When a θ-role, [$_{\theta}$ A, B], reaches its maximal extension, B can be specified as + human

And with this, the second of our aims is met:

II Our theory should account for why the understood subject in NOC must be human.

The proposal for internal θ-roles is a tentative one, but it would be interesting to find out whether this +human internal θ-role can also become specific. If so, the discourse rule that applies to the understood subject of infinitivals generalises to that of understood objects. Note there is no OC of objects, since this relation is licensed through copying, made possible by Elsewhere. If a θ-role can be assigned, separation of B from A is not be permitted. For the same reason, null-subjects in finite clauses are ruled out:

(96) *John$_1$ promised Mary Θ_1 would leave

8. Summary

This paper developed an extra-syntactic analysis of NOC, such that all external θ-roles of NOC infinitivals were subject to an LF-rule that would ensure they be interpreted as arguments in the semantics. Specification was minimal (+human), which catered for generically interpreted NOC structures. A discourse rule was added for implicit subjects with specific interpretations. Distributional differences between OC and NOC were captured by the control verb's s- selection of a CP with an unassigned B. Their predicate status fell out from copying the unassigned B beyond the embedded clause. Application of the two rules introduced for NOC was extended to the linked-reading effect, although it was noted that this effect is not peculiar to control. Finally, I introduced a possible approach to the null-objects of Rizzi (1986), which were also reinterpreted in terms of the internal θ-role, thereby suggesting an analysis of the phenonemon that need not depend on a structurally represented null object.

Acknowledgements

For useful comments and enjoyable discussions, my thanks to Ad Neeleman, Marco Tamburelli and Rob Truswell.

References

Ariel, M., 1988. Referring and Accessibility. Journal of Linguistics 24, 65–87.

Bhatt R., and R Izvorski., 1998. Genericity, Implicit Arguments and Control. In: Proceedings of Student Conference in Linguistics (SCIL) 7**.** Distributed by MITWPL.

Bhatt, R., Pancheva, R., 2006. Implicit arguments. In: Everaert, M., van Riemsdijk, H., (Eds.) Blackwell Companion to Syntax, vol. II, pp. 554-584. Blackwell, Oxford.

Borer, H., 1989. Anaporic Agr. In: Jaeggli, O., Safir, K., (Eds.) The Null-Subject Parameter Kluwer Academic Publishers, Dordrecht.

Brame, M.K., 1977. Alternatives to the Tensed S and Specified Subject Conditions. In: Sturm, E., Weerman, F., (Eds) Generatieve Syntaxis p137- 411 Martinus Nijhof, Leiden.

Bresnan, J., 1982. Control and Complementation. Linguistic Inquiry 13, 343-434.

Chierchia, G., 1984. Topics in the Syntax and Semantics of Infinitives and Gerunds. Ph.D. Dissertation. University of Massachussetts.

Evers, A., 1988. Non-finite verb forms and subject θ-role assignment. In: Everaert, M., Evers, A., Huybregts, R., Trommelen, M., (Eds.), Morphology and Modularity: Publications in Language Sciences, vol. 29. Foris Publications, Dordrecht.

Groenendijk, J., Stokhof, M., 1989. Type-Shifting Rules and the Semantics of Interrogatives. In Chierchia, G., Partee, B., Turner, R., (Eds.) Properties, Types and Meanings, Semantic Issues, vol 2 pp. 21-68. Kluwer, Dordrecht.

Hale, K., Keyser, S., 1993. On Argument Structure and the Lexical Expression of Syntactic Relations. In: Hale, K., Keyser, S., (Eds.) The View from Building 20. MIT Press, Cambridge, MA. pp 53-109.

Hale, K., Keyser, S., 2002. Prolegomenon to a Theory of Argument Structure. MIT Press, Cambridge, MA.

Hamblin, C. 1973. Questions in Montague English. Foundations of Language 10, 41 -53.

Hornstein, N., 2001. Move! A minimalist theory of construal. Blackwell Publishers, Oxford.
Janke, V., 2007. Control without PRO. Doctoral Thesis: University College London.
Janke, V., 2008. Control without a Subject. Lingua 118 (1): 82 -118.
Karttunen, L., 1977. Syntax and Semantics of Questions. Linguistics and Philosophy 1, 3 - 44.
Kiparsky, P., 1973. 'Elsewhere' in phonology. In Anderson, S., Kiparsky, P., (Eds.) A Festshrift for Morris Halle. Holt, Rinehart and Winston, New York. pp. 93-106.
Landau, I., 2000. Elements of Control: Structure and Meaning in Infinitival Constructions. Studies in Natural Language and Linguistic Theory, Kluwer Academic Publishers, Dordrecht.
Lasnik, H., 1992. Two notes on control and binding. In: Larson, R., Iatriadou, S., U. Lahiri, U., Higginbotham, J., (Eds.) Control and Grammar. pp235 – 251. Kluwer Academic Publishers, Amsterdam.
Lebeaux, D., 1984. Anaphoric Binding and the Definition of PRO. In: Jones, C., Sells, P., (Eds.) NELS 14 GLSA Publications, UMASS, Amherst, MA. pp253 – 274.
Lebeaux, D., 1985. Locality and Anaphoric Binding The Linguistic Review 4, 343– 363.
Manzini, R., 1983. On control and control theory. Linguistic Inquiry 14,421-46.
Manzini, R., Roussou, A., 2000. A minimalist theory of A-movement and control. Lingua, 110, 6, 409-447.
Marantz, A., 1984. On the Nature of Grammatical Relations. MIT Press, Cambridge, MA.
Neeleman, A., van de Koot, H., 2002. The Configurational Matrix. Linguistic Inquiry 33, 529-574.
Neeleman, A., Szendrői, K., 2007. Radical pro drop and the morphology of pronouns. Linguistic Inquiry 38(4), 671-714.
Rizzi, L., 1986. Null Objects in Italian and the Theory of pro. Linguistic Inquiry 17, 501– 557.
Samek-Lodovici, V., 2003. The internal structure of arguments and its role in complex predicate formation. Natural Language and Linguistic Theory 21, 835-881.
Williams, E., 1980. Predication. Linguistic Inquiry 11, 203–238.