Thomas Grano
# 2 Restructuring at the syntax-semantics interface

## 1 Introduction

A central topic in the analysis of infinitival constructions concerns the treatment of "restructuring" whereby some matrix predicates but not others give rise to biclausal structures that behave monoclausally with respect to particular syntactic tests (see also Jędrzejowski & Demske this volume).[1] Here I illustrate the basic phenomenon with two familiar examples. The first is clitic climbing, as found in Italian (Rizzi 1978; Napoli 1981; Burzio 1986; Kayne 1989; Cardinaletti & Shlonsky 2004; Cinque 2006), Romanian (Nedelcu & Paraschiv this volume), Spanish (Aissen & Perlmutter 1976), or Wolof (Torrence 2013). In this phenomenon, certain infinitival constructions allow for a pronominal clitic to be placed in the matrix clause even though it stands for an argument in the complement clause. This is significant because clitic placement is usually clause-bound. In the Italian examples in (1), the clitic is found in the "expected" clause-local position. In (2), by contrast, we see that (1a) (the infinitival configuration introduced by *cominciare* 'begin') has a clitic climbing variant wherein the clitic is placed in the matrix clause, whereas (1b) (the infinitival configuration introduced by *detestare* 'hate') has no such variant.

(1)  a.  *Gianni   **cominciava**   a   veder[-]**lo**.*
      Gianni   was.beginning   to   see-it
      'Gianni was beginning to see it.'

   b.  *Gianni   **detestava**   veder[-]**lo**.*
      Gianni   hated   see-it.
      'Gianni hated to see it.'

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**1** Like many terms in syntax, "restructuring" ambiguously refers both to a phenomenon and to an analysis of that phenomenon. (In the case of "restructuring", the analysis that it refers to is the one associated with Rizzi 1978.) Throughout this paper, I use "restructuring" strictly in the former sense as a descriptive term for any kind of monoclausality or transparency effect, independent of any particular analysis. Similar terms in the literature with partially overlapping usage include "clause union" (Aissen & Perlmutter 1976) and, in German studies, "coherence" (Bech 1955). (See also the penultimate paragraph of section 1 for relevant discussion.)

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(2)  a.  *Gianni* **lo cominciava** *a vedere.*
         Gianni   it    was.beginning   to   see
         'Gianni was beginning to see it.'

     b.  \**Gianni* **lo detestava** *vedere.*
         Gianni   it    hated        see.
         Intended: 'Gianni hated to see it.'

The second example comes from German. In the so-called long passive construction (Höhle 1978; Bayer and Kornfilt 1990; Kiss 1995; Wöllstein-Leisten 2001; Wurmbrand 2001; Sabel 2002; Schmid, Bader, and Bayer 2005; Lee-Schoenfeld 2007), the direct object of an infinitival complement clause can sometimes be promoted to matrix subject position via passivization, in an apparent exception the ordinary clause-boundedness of passivization. (3) (taken from Wurmbrand 2001) shows that infinitival constructions introduced by *versuchen* 'try' allow for long passivization but ones introduced by *behaupten* 'claim' do not.

(3)  a.  *weil*   *der Wagen*$_1$  [$t_1$  *zu*  *reparieren*]  **versucht**  *wurde*
         because  the  car             to   repair         tried       was
         'because the car was tried to repair'
         ≈ 'because they tried to repair the car'

     b.  \**weil*  *der Wagen*$_1$  [$t_1$  *zu*  *reparieren*]  **behauptet**  *wurde*
         because  the  car             to   repair         claimed      was
         Intended: 'because the car was claimed to repair'

The point of departure for this paper is a tension noted by Wurmbrand (2001: 6–9). On the one hand, there is a cross-linguistically stable set of "core" trigger verbs for restructuring. In his seminal study of restructuring in Italian, Rizzi (1978) generalized that modal verbs, aspectual verbs, and verbs of motion tend to allow restructuring. Wurmbrand (2001) has further refined and substantiated this generalization based on evidence from Italian, Spanish, German, Dutch, and Japanese. But on the other hand, there are also cross-linguistic idiosyncrasies (verbs that trigger restructuring in some languages but not others) and language-internal variation (verbs for which some speakers allow restructuring and others do not). Wurmbrand (2001) furthermore observes that in response to this tension, some approaches to restructuring take the stability as central and assign the irregularities a special status (see, among many others, Napoli 1981; Rochette 1988, 1990; Rosen 1989, 1991; Cinque 2006), whereas other approaches take the set of trigger verbs to be idiosyncratic and language-specific and treat cross-

linguistic regularities as accidental (see, among many others, Aissen & Perlmutter 1976; Kayne 1989; Roberts 1997).

Against this backdrop, this paper has two main goals. The first goal is to review Cinque's (2006) approach to restructuring, together with modifications that I have argued for in earlier work (Grano 2012, 2015), and show how this approach gives us a handle on explaining the observed cross-linguistic regularities in the set of trigger verbs for restructuring. The second goal is to suggest that embedding this approach to restructuring into a diachronic perspective gives us a useful framework for investigating cross-linguistic and language-internal idiosyncrasies in the set of trigger verbs. In a nutshell, the central idea is that a verb restructures by semantically matching and therefore realizing an inflectional head in a highly articulated Cinque-style hierarchy of functional projections. Restructuring configurations are therefore monoclausal, the "embedded verb" actually constituting the main predicate in the structure and the "matrix verb" actually occupying a functional position in the extended projection of that main predicate. On this approach, regularity in the set of restructuring verbs is a consequence of the universality of the projections in the inflectional layer of the clause. But, I suggest, whether or not a verb semantically matches a given inflectional head depends in part on a diachronic process of semantic bleaching whereby lexical meaning is stripped away until the verb approximates the functional meaning associated with some inflectional head. On this view, the observed variation is not actually idiosyncratic but rather is systematic in the sense that it reflects different degrees of semantic bleaching. And indeed, cases of lexical verbs being grammaticalized into functional heads are well documented in the literature: see e.g. Traugott (1989, 1997) on English, Roberts & Roussou (2003) on Romance languages, and van Gelderen (2004) on Germanic languages.

One disclaimer on the scope of this paper is in order: An issue that I will not address here has to do with the extent to which more than one species of mono-clausality or transparency phenomenon needs to be recognized. Wurmbrand (2001), for example, argues for a three-way distinction internal to German between lexical restructuring, functional restructuring, and reduced non-restructuring. On the cross-linguistic front, Haider (2010: 351–353) argues for a distinction between German coherence (or what Haider calls "clustering") and Italian restructuring (cf. also Haider 2003). The position I take in this paper is that the cross-linguistic regularity in the way verb meaning predicts the availability of transparency points to a core phenomenon that is universal and unitary and that makes a basic cut, though this does not exclude the possibility for finer grained syntactic distinctions both cross-linguistically and internally to some languages as well.

The organization of the rest of the paper is as follows. Section 2 reviews the basic facts that need to be accounted for, drawing on Wurmbrand's (2001)

survey. Section 3 reviews Cinque's (2006) approach to restructuring. Section 4 reviews Grano's (2012; 2015) proposed modifications to Cinque's view and shows how this approach captures the observed cross-linguistic regularities. Section 5 suggests how the approach can be embedded into a diachronic perspective in a way that helps us understand the irregularities. Finally, section 6 concludes.

# 2 Cross-linguistic (in)stability in restructuring

Table 1 presents an abridged and adapted version of Wurmbrand's (2001) survey of restructuring in German, Dutch, Italian, Spanish, and Japanese. The PROPOSITIONAL and FACTIVE categories appear as they do in Wurmbrand's work. The MODAL, ASPECTUAL and MOTION categories are generalizations I have made based on Wurmbrand's listing of individual verbs. Many other verbs from Wurmbrand's survey are omitted from this table, though see Table 2 in section 5 below for a larger sampling of those verbs that exhibit variation in restructuring status. Following Wurmbrand's conventions, "+" indicates that the relevant predicate participates in restructuring configurations in the language in question, "–" indicates that it does not, and "±" indicates either inter-speaker variation or cases where the predicate has more than one translation and these transla-tions vary from one another with respect to restructuring status. Restructuring diagnostics employed by Wurmbrand in making these classifications are long passives (German), verb raising and the *infinitivus pro participio* effect[2] (Dutch), clitic climbing (Italian and Spanish), and lack of embedded tense marking (Japanese). Although the diagnostics vary from one language to the next, the unifying property is that all of these phenomena can be understood as reflecting monoclausal behavior in a superficially biclausal structure.

The first few lines in the table provide cross-linguistic substantiation for Rizzi's (1978) generalization based on Italian that modal, aspectual and motion verbs trigger restructuring, and to this group we can add *want*. At the bottom of the table, we see two classes of verbs that are cross-linguistically stable in fail-ing to restructure. The first class is propositional verbs, which, following Landau (2000), are verbs like *claim* or *believe* whose complements can be the target of truth- or falsity-ascriptions, as in *John claimed to be tall*, *which is true*. (cf. *John wanted to be tall*, *#which is true*.) The other class is factive verbs: Verbs like *regret* whose complements are presupposed to be true (Kiparsky & Kiparsky

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**2** The *infinitivus pro participio* effect is a phenomenon wherein a restructuring verb shows up as an infinitive in a syntactic environment where a participial form would be expected. See Wurmbrand (2001) and references therein for more details.

**Table 1:** (Non-)restructuring verbs, adapted from Wurmbrand (2001: 342)

| Predicates | German | Dutch | Italian | Spanish | Japanese |
|---|---|---|---|---|---|
| MODAL | + | + | + | + | + |
| ASPECTUAL | + | + | + | + | + |
| MOTION | + | + | + | + | + |
| *want* | + | + | + | + | + |
| *try* | + | + | ± | ± | ± |
| *manage/succeed* | + | + | ± | ± | + |
| *promise, threaten* | + | – | – | – | – |
| *allow, permit* | + | – | – | ± | – |
| *decide, choose* | – | – | – | – | – |
| *plan* | – | – | – | – | – |
| PROPOSITIONAL | – | – | – | – | – |
| FACTIVE | – | – | – | – | – |

1970). Finally, in the middle of the table, we see that some predicates exhibit both cross-linguistic and language-internal instability in their restructuring status. In the following two sections, in reviewing Cinque's and Grano's approach to restructuring, I take the stable classes at the top and bottom of the table as central, and then in section 5, I come back to the unstable classes in the middle of the table.[3]

# 3 Restructuring and clausal architecture

On the basis of cross-linguistic regularity in the ordering of verbal inflectional affixes, clausal functional heads, and semantically corresponding adverbs, Cinque (1999) proposes a universal and rigidly ordered hierarchy of inflectional-layer functional heads, an abridged version of which is provided in (4). (Cf. also Hill this volume for a cartographic approach to infinitives in Early Modern Romanian.)

(4)  $\text{Mood}_{speech\ act} > \text{Mood}_{evaluative} > \text{Mood}_{evidential} > \text{Mod}_{epistemic} > \text{Tense} >$
  $\text{Mod}_{volitional} > \text{Asp}_{terminative} > \text{Asp}_{continuative} > \text{Asp}_{prospective} > \text{Asp}_{inceptive} >$
  $\text{Mod}_{obligation} > \text{Mod}_{ability} > \text{Asp}_{frustrative} > \text{Asp}_{success} > \text{Mod}_{permission} >$
  $\text{Asp}_{conative} > \text{Asp}_{completive}$

  (abridged and synthesized from Cinque 1999, 2006)

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**3** Sabel (1996) provides additional support for the general cross-linguistic stability of trigger verbs for restructuring, showing that cross-clausal scrambling in German and Polish and clitic climbing in Spanish occur with similar kinds of predicates in all three languages. I thank an anonymous reviewer for drawing my attention to this work.

On this view, adverb ordering effects like that seen in (5) follow from the fact that adverbs are licensed in the specifier positions of particular functional heads. For example, *unfortunately* has an evaluative meaning, and so it is licensed by Mood$_{evaluative}$, while *probably* has an epistemic meaning, and so it is licensed by Mod$_{epistemic}$. Since these functional heads occur in a fixed order – as evidenced by the morphology of languages like Korean (6) in which evaluative and epistemic meanings are realized by functional morphemes – the adverbs occur in a fixed order as well.

(5)  a.  *John unfortunately probably left.*

   b.  *\*John probably unfortunately left.*

(6)  *ku     say-ka      cwuk-ess-keyss-kwun-a.*
    that   bird-NOM    die-ANT-EPISTEM-EVAL-DECL
    'That bird must have died!' (Cinque 1999: 53)

In later work, Cinque (2006) extends this line of analysis to restructuring verbs, arguing that they also are overt instantiations of functional heads in the inflectional layer of the clause. For example, *try* realizes a particular kind of aspectual head (namely, CONATIVE aspect, realized as a verbal affix in some languages: see e.g. MacDonald 1990: 304 for an example from the Papua New Guinean language Tauya). Accordingly, a sentence like (7) would have the structure in (8), wherein *try* realizes an aspectual head in the extended projection of its verbal complement, the highest argument of which raises into the surface subject position, [Spec,TP].[4]

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**4** Cinque's analysis of restructuring is based mostly on data from Italian, though he does mention that restructuring effects are reported for many of the world's languages, suggesting widespread cross-linguistic applicability of the proposals. Here and in what follows, I use English to exemplify the restructuring configurations. See Grano (2012, 2015) for a detailed investigation of the applicability of this approach to complementation patterns in English, Mandarin Chinese, and modern Greek. There I argue that one restructuring diagnostic for English is failure to accept finite complements (e.g., *\*John tried that he opened the door*), which tracks the distribution of standard restructuring properties in other languages quite well. One outcome of extending the analysis to English involves giving up on the view that all functional heads are rigidly ordered, given the observation that when English restructuring predicates occur together, they can be flexibly ordered, unlike what Cinque claims for Italian (e.g., *John began to want to read/John wanted to begin to read*).

(7)   John tried to open the door.

(8)
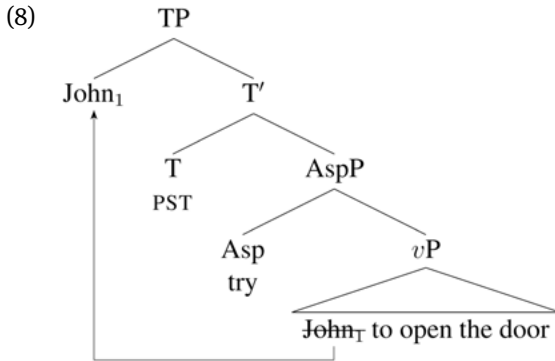


Cinque's approach – which is the successor to a number of approaches that take restructuring verbs to be auxiliary-like in one way or another (Napoli 1981; Rochette 1988, 1990; Rosen 1989, 1991) – elegantly ties the restructuring verbs' semantics to their syntax. Semantically, restructuring verbs all have meanings that signal their functional status. And the syntactic consequence of this functional status is that they are not associated with their own clausal projection; rather, they are part of the single clausal projection lexically headed by the main verb in their complement. This gives us monoclausality, which is the reason for the observed syntactic effects such as clitic climbing and long passivization. Cinque's approach also leads us to expect widespread cross-linguistic agreement in the set of restructuring predicates: Such agreement follows from the hypothesized universality of the inventory of functional projections.

One feature of Cinque's approach that is worth highlighting is its position that restructuring predicates uniformly instantiate monoclausal structures like (8) regardless of whether overt transparency effects like clitic climbing or long passivization obtain. (See also Cardinaletti & Shlonsky 2004 for an analysis of Italian clitic climbing that works on this basis.) One piece of evidence that Cinque points to for this view is that it derives the distribution of exhaustive and partial control: Wurmbrand (1998) generalized that restructuring predicates require that there be total identity between the controller and the controlled position (EXHAUSTIVE CONTROL in the sense of Landau 2000), whereas non-restructuring predicates allow the controller to denote a proper subset of the controlled position (PARTIAL CONTROL in the sense of Landau 2000). For example, as seen in (9), *hope* allows partial control, as evidenced by the compatibility between a singular non-group denoting controller (*John*) and an embedded predicate (*gather*) that requires a collective subject. By contrast, as seen in (10),

inserting *try* into the same syntactic configuration yields unacceptability, indicating that *try* disallows partial control.

(9)   *John **hoped** to gather at noon.*

(10)  **John **tried** to gather at noon.*

Since Cinque analyzes restructuring as involving a movement relationship between the higher subject position and the lower subject position, total identity is trivially expected. Partial control, in turn, becomes a fully general property of PRO. Crucially, the cut between exhaustive control and partial control remains stable regardless of whether transparency effects obtain. This stability supports a uniformly monoclausal syntax for restructuring verbs. For more on the relationship between restructuring and the exhaustive/partial control distinction, see Wurmbrand (2002); Barrie (2004); Barrie & Pittman (2004); Costantini (2010); Grano (2012, 2015); White & Grano (2014).

# 4 Subject orientation and Tense

Although Cinque's approach to restructuring has much to recommend it, it also raises a number of pressing questions, two of which guide the investigation in Grano (2012, 2015). The first concern for Cinque's approach is that some restructuring predicates such as *try* pass all standard diagnostics for control, and yet Cinque's analysis of restructuring entails a raising syntax, as reviewed in the previous section. The second concern has to do with the predictive power of Cinque's approach. Ideally, we would want to be able to predict the restructuring status of a verb from its semantics: We would look at the verb's meaning, look at the hierarchy of inflectional projections, and predict that the verb restructures (i.e., is functional, on Cinque's approach) if and only if there is a functional head that corresponds to its meaning. But against this expectation, we find, for example, that verbs of speech like *say* resist restructuring, despite the existence of $\text{Mood}_{speech\ act}$ which would seem a natural home for a verb with this meaning. In what follows, I review Grano's (2012; 2015) solution to these two concerns.

## 4.1 Subject orientation as variable binding

Traditional diagnostics for distinguishing raising predicates from control predicates are all designed to test whether the predicate in question enters into a thematic dependency with its subject: If it does, the predicate instantiates

control, and if it does not, the predicate instantiates raising. A raising predicate like *seem* admits expletive subjects (11a), idiom chunk subjects (11b), and inanimate subjects (11c), and furthermore exhibits synonymy when active/passive alternations in the embedded clause affect which argument is in matrix subject position (11d). All of these tests converge on the view that *seem* bears no thematic dependency with its subject. A control predicate like *try*, on the other hand, fails on all these counts (12a–d). Following earlier work, I use the term SUBJECT ORIENTATION to refer in an analytically neutral way to this property of predicates like *try*.

(11)  a.  *It seemed to be important that we go.*

    b.  *The cat seemed to be let out of the bag.*

    c.  *The rock seemed to roll down the hill.*

    d.  *The doctor seemed to examine the patient.*
       *= The patient seemed to be examined by the doctor.*

(12)  a.  *\*It tried to be important that we go.*

    b.  *\*The cat tried to be let out of the bag.*

    c.  *\*The rock tried to roll the down hill.*

    d.  *The doctor tried to examine the patient.*
       *≠ The patient tried to be examined by the doctor.*

In order to reconcile the control behavior of restructuring predicates like *try* with the raising syntax assigned to them by Cinque (2006), Grano (2012, 2015) proposes a solution based on two previous ideas in the literature. The first idea is that although modal expressions are essentially one-place predicates in that they take a single proposition-denoting argument, modals are nonetheless "anchored" to an individual that they require semantic access to, and one way of modeling anchoring is via variable binding (Hacquard 2010; cf. also Farkas 1992; Giannakidou 1998, 1999; Kratzer 2011). In a sentence like (13a), for example, *have* expresses obligation, and the most natural construal is one in which it is specifically the subject (*John*) who bears that obligation. But as seen in (13b), the obligation-bearer in a deontic *have* sentence need not always be in subject position or anywhere in the sentence at all (Bhatt 1998; Wurmbrand 1999). We can assign a uniform syntax to both kinds of sentences via the proposal that *have* is a raising predicate that comes along with a variable that can be bound either by an entity in the structure or by an entity salient from context.

(13)  a.  *John has to put fifty chairs in the living room.*

  b.  *There have to be fifty chairs in the living room.*

The second idea is that some variables in natural language are DEPENDENT in the sense of Giannakidou (1998): Like reflexive pronouns, they cannot get their value from the context. Putting these two ideas together, the proposal is that restructuring predicates like *try* incorporate into their meaning a dependent individual variable. Consequently, when the subject raises, that subject obligatorily binds the variable, giving the predicate semantic access to the subject and simulating a control relation. This mechanism is exemplified in (14), which assumes a denotation for *try* represented schematically in (15). Logically, *try* takes a propositional argument and an individual argument. But whereas the propositional argument composes with the predicate via functional application, the individual argument enters in via variable binding. (See Heim and Kratzer 1998 for the mechanics of functional application and variable binding, as well as an explication of the general approach to the syntax-semantics interface that I assume here.)

(14)  a.  *John tried to open the door.*

  b.
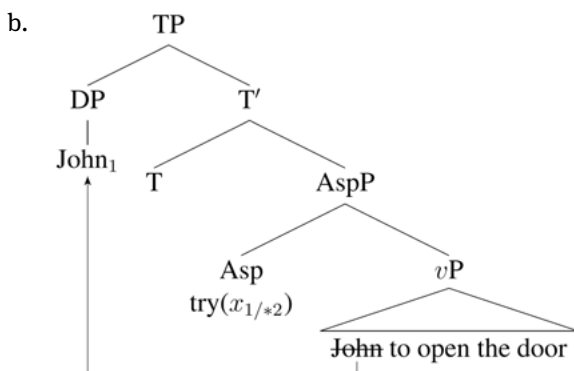


(15)  $[\![try(x)]\!] = \lambda p.\mathrm{TRY}(x)(p)$   (cf. Sharvit 2003; Grano 2011)

## 4.2 Failed restructuring as failed variable binding

If Cinque's (2006) approach to restructuring is to be successful in predicting whether a given predicate permits restructuring, then it ought to be the case

that if a predicate has a meaning that is independently known to reside on a functional head somewhere in the inflectional layer of the clause, then it restructures. But as Grano (2012; 2015) points out, this prediction fails in a systematic way. In particular, predicates that have meanings that correspond to inflectional-layer functional heads *above Tense* in Cinque's hierarchy do not restructure. There are four heads above Tense in Cinque's hierarchy: $Mood_{speech\ act}$, $Mood_{evaluative}$, $Mood_{evidential}$, and $Mod_{epistemic}$. And yet the most plausible candidates for predicates that semantically match these categories do not restructure. These are, respectively, verbs of speech like *say* or *ask*, evaluative or emotive factive verbs like *regret*, verbs that name sources of evidence such as *see (that)* or *hear (that)*, and epistemic verbs like *believe* or *know*. All four of these predicate types correspond to what Wurmbrand (2001) calls PROPOSITIONAL and FACTIVE in her survey and they fail to restructure in a cross-linguistically robust way.

Grano goes on to show that the failure of restructuring above Tense is itself subject to an exception: the Italian verb *sembrare* 'seem' participates in restructuring configurations for some speakers of Italian. This is illustrated with the clitic climbing example in (16). Haegeman (2005, 2006, 2010) argues that for speakers who accept sentences like (16), *sembrare* realizes $Mood_{evidential}$. The main source of evidence for this analysis is that even speakers who ordinarily allow restructuring with *sembrare* do not allow it when the verb is found in the antecedent to a conditional (17a) or in the complement to a factive predicate (17b) – precisely environments in which evidential mood is independently known to be ruled out.

(16)   ***Lo** sembrano trovare troppo difficile.*
       'They seem to find it too difficult.'   (Haegeman 2010: 302)

(17)   a.   **Se lo** sembrano trovare troppo difficile, faremo il secondo capitolo.*
            Intended: 'If they seem to find it too difficult, we'll do the second chapter.'

       b.   ??*È strano che **lo** sembrino trovar troppo difficile.*
            Intended: 'It is odd that they seem to find it too difficult.'
            (Haegeman 2010: 306)

Because $Mood_{evidential}$ is above Tense in Cinque's hierarchy, *sembrare* presents a counterexample to the generalization that predicates corresponding to heads above Tense fail to restructure. Grano hypothesizes, however, that the property of *sembrare* responsible for this exceptionality is that it is non-subject-oriented;

i.e., it is a raising predicate in the traditional sense of not entering into a thematic dependency with its subject. Grano thereby arrives at the descriptive generalization in (18).

(18) **Restructuring generalization**: A verb V restructures just in case V matches the meaning of an inflectional-layer functional head F, and either F is below Tense *or* V is non-subject-oriented. (adapted from Grano 2012: 112)
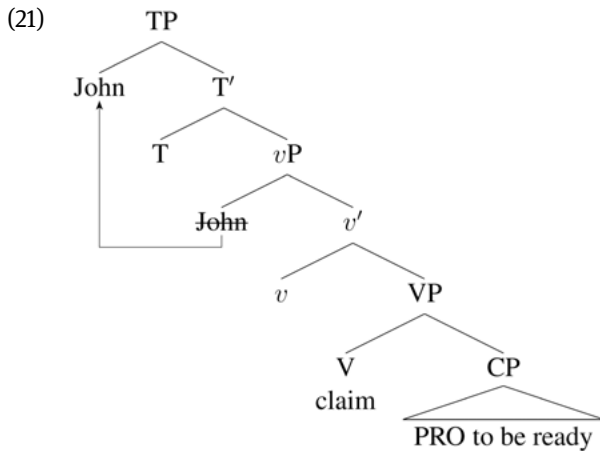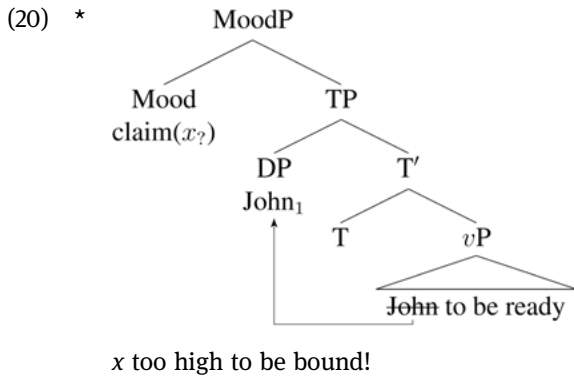
Finally, Grano shows that the restructuring generalization in (18) in fact follows from the variable binding approach to subject orientation, given the reasonable assumption that subjects can be interpreted no higher than [Spec,TP] (von Fintel & Iatridou 2003). To see this, there are four cases to consider. First, take a subject-oriented predicate that corresponds to a head below Tense, such as *try*. As illustrated in (19), *try* realizes an aspectual head, and when the subject raises, it binds the dependent variable associated with *try*. This state of affairs stands in contrast with a subject-oriented predicate that corresponds to a head above Tense. Take for example *claim*, which names a kind of speech act. Since Mood$_{speech\ act}$ is above Tense, even after the subject raises to [Spec,TP], it is too low to bind the dependent variable associated with *claim*. This is illustrated in (20). Consequently, restructuring with *claim* fails, and *claim* must instead instantiate a full biclausal structure whereby it realizes a lexical verb that takes a full CP complement with a PRO subject, as illustrated in (21).

Subject-oriented; **below** Tense:

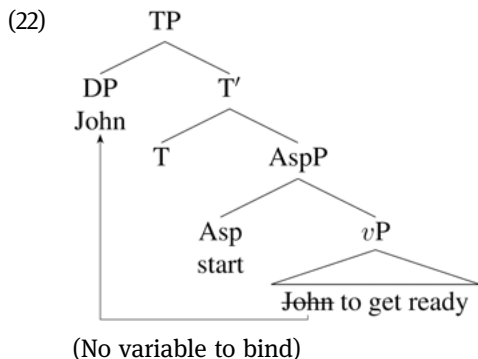(19)
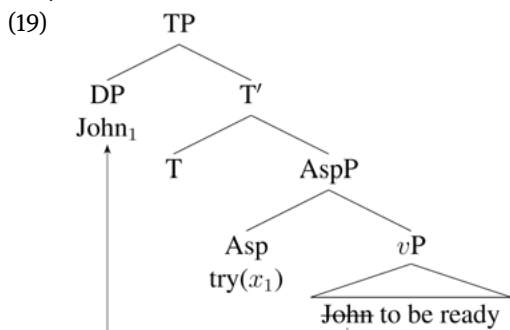


$x$ bound by subject (= *John*)

Subject-oriented; **above** Tense:

(20)  *

```
            MoodP
           /      \
       Mood         TP
    claim(x?)      /    \
                 DP       T′
               John₁    /    \
                 ↑     T       vP
                 |           /     \
                 |       John to be ready
                 |_____|
```

$x$ too high to be bound!

(21)

```
        TP
       /   \
   John     T′
    ↑       /   \
    |      T     vP
    |          /     \
    |       John      v′
    |_____|       /    \
                    v       VP
                          /     \
                         V        CP
                       claim    /    \
                            PRO to be ready
```
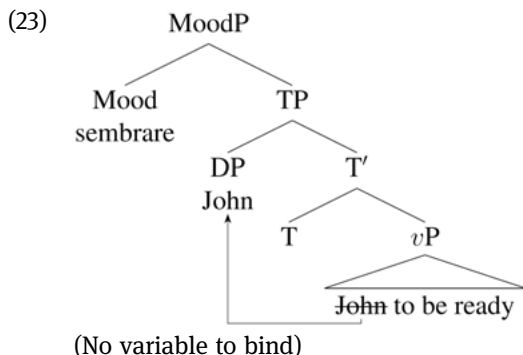
Rounding out the picture, when a predicate is not subject-oriented, then its realization above or below Tense is irrelevant to the availability of restructuring because no variable binding is at stake. This is illustrated in (22) for *start* (which corresponds to an aspectual head below Tense[5]) and in (23) for Italian *sembrare* (which corresponds to Mood*evidential*, above Tense).

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**5** Perlmutter (1970) argues that aspectual verbs like *start* are raising/control ambiguous, which in the framework here would mean that they are ambiguous between being subject-oriented (variable incorporating) and non-subject-oriented (non-variable-incorporating). Although Perlmutter's conclusion is not indisputable (see e.g. Rochette 1999), all that matters for my purpose here is that *start* is at least sometimes non-subject-oriented, which as far as I know is uncontroversial. See also Fukuda (2012) for an analysis of Japanese aspectual verbs as functional heads.

**Non**-subject-oriented; **below** Tense:

(22)

```
            TP
          /    \
        DP      T′
       John    /  \
              T    AspP
                  /    \
                Asp     vP
                start  /  \
                    John to get ready
```

(No variable to bind)

**Non**-subject-oriented; **above** Tense:

(23)

```
              MoodP
            /       \
         Mood        TP
        sembrare    /  \
                  DP    T′
                 John  /  \
                      T    vP
                          /  \
                      John to be ready
```

(No variable to bind)

In sum, Grano's approach accurately derives the generalization that restructuring predicates corresponding to heads below Tense can always restructure whereas restructuring predicates corresponding to heads above Tense can restructure only if they are not subject-oriented.[6] It is worth highlighting one feature of

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**6** An anonymous reviewer points out the following counterexample from German:

(i) Der Zeuge    will    den Mörder    gesehen   haben.
    the witness  wants  the murderer  seen      have
    'The witness claims to have seen the murderer.'

As the reviewer points out, citing Reis & Sternefeld (2004), German *wollen* 'want' – in addition to its desiderative use – has a reportative or evidential use along the lines of *claim*, which means that it should correspond to Mood$_{speech\ act}$ or Mood$_{evidential}$, both of which are above Tense in the clause. Crucially, it still behaves like a restructuring predicate on this use, and it is also still subject-oriented in that the subject names the source of the claim. This combination of properties (corresponding to a head above Tense, subject orientation, and restructuring/ functional status) are precisely what is predicted to be unavailable on the theory that I am presenting here. I leave this as an open puzzle.

Grano's approach that differentiates it from Cinque's: Cinque's approach entails a "static" view of the functional status of restructuring predicates whereas Grano's approach entails a "dynamic" view. For Cinque, restructuring predicates are specified in the lexicon as functional. For Grano, on the other hand, restructuring predicates are specified in the lexicon as lexical, and a restructuring rule allows (lexical) predicates to be merged into functional positions in the structure as long as they have the right kind of meaning – and as long as variable binding (in the case of a subject-oriented predicate) succeeds. It is the possibility of failure in the output of this restructuring rule (as in cases like (20) above) that endows the "dynamic" approach with its predictive power.

# 5 Diachronic perspective

## 5.1 Instability in restructuring status

On Grano's reformulation of Cinque's approach to restructuring, the availability of restructuring is semantically deterministic in the sense that if a predicate's meaning is subsumed by that of an inflectional-layer functional category which is below Tense or which is not subject-oriented, it realizes that category. This approach raises a question about predicates like those in Table 2 (which consists of a selection of predicates from Wurmbrand's survey that partially overlaps with the predicates in Table 1 above) that evidence both cross-linguistic and language-internal instability in their restructuring status. (Following Wurmbrand's convention, "N/A" indicates either that the predicate in question does not combine with an infinitive or that independently identifiable factors affect their ability to restructure; e.g., Wurmbrand observes that particle verbs in Dutch and German block restructuring.)

**Table 2:** "Unstable" predicates, adapted from Wurmbrand (2001: 342)

| Predicates | German | Dutch | Italian | Spanish | Japanese |
|---|---|---|---|---|---|
| *return* | N/A | N/A | ± | + | ± |
| *intend (=want, mean)* | + | + | ± | ± | N/A |
| *forget* | + | + | ± | ± | + |
| *try* | + | + | ± | ± | ± |
| *manage/succeed* | + | + | ± | ± | + |
| *dare* | + | + | ± | − | N/A |
| *seem* | + | + | ± | − | − |
| *promise, threaten* | + | − | − | − | − |
| *allow, permit* | + | − | − | ± | − |

Toward a solution, what I would like to suggest is that whether a verb's meaning is subsumed by a functional category depends in part on a diachronic process of semantic bleaching. This idea rests on the view that grammaticalization is primarily driven by semantic bleaching (see e.g. van Kemenade 1999 and references therein) and that the syntactic consequence of grammaticalization is the reanalysis of a lexical head as a functional head (Roberts & Roussou 1999). We then predict that for those predicates that exhibit instability, the restructuring variants are more semantically bleached than their non-restructuring counterparts. For example, since 'seem' restructures in German and Dutch but not in Spanish or Japanese, it should have a more bleached meaning in the former two languages. Preliminary evidence for this state of affairs is found in Cinque's (2006) observation that instability is often found among non-"core" members of certain semantic classes: Thus Italian *volere* 'want' restructures but the semantically more nuanced (i.e., less bleached) *desiderare* 'desire', *amare* 'love' and *preferire* 'prefer' exhibit instability. The diachronic process that leads to this state of affairs plausibly fits under Ogura's (1998) proposal that the first stage of grammaticalization is one in which "a high frequency, unmarked word is chosen from among synonyms and/ or functional equivalents and gradually idiomatized" followed by a second stage in which "the meaning of the word comes to be broadened" (p. 309).[7]

Even if this line of reasoning is on the right track, though, what still needs to be explained is why the instability is itself cross-linguistically stable. In other words, what is the crucial property or set of properties that distinguishes the predicates in Table 2 from modals, aspectual and motion predicates, and 'want' – which uniformly restructure – and from propositional and factive predicates – which uniformly fail to restructure?

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**7** An anonymous reviewer draws my attention to von Fintel (1995), who argues that what characterizes the semantics of functional morphemes is not "bleached" meaning but rather permutation invariance (i.e., insensitivity "to specific facts about the world" [p. 179]) and high semantic type (i.e., beyond the type of entity, situation, or predicate of entity). Correspondingly, von Fintel suggests that grammaticalization involves becoming permutation-invariant and assuming a high type. von Fintel points out that characterizing functional morphemes in terms of having a "blander" meaning is problematic because it does not allow comparison across different types of meanings; e.g., von Fintel observes that there is no clear sense in which *not* has a meaning that is blander than *cat*. (Cf. also Reis 2007.) The class of predicates under discussion here ('want', 'desire', 'prefer', etc.), though, all have a similar type, and all fall into von Fintel's "intermediate category" of lexical morphemes that have a logical meaning (having a high type that involves quantification over possible worlds). I think it is conceivable that within this class, blandness of meaning could play a role in determining functional status. Evidence for this lies in the observation that 'want' is routinely grammaticalized as an affix in some languages but the more nuanced 'desire', 'prefer', etc., are not.

One trend that emerges from Tables 1 and 2 is that implicative verbs (*manage*, *dare*, *forget*) and *try* all exhibit some degree of instability, so it may be fruitful to take these as a starting point. When they restructure, Cinque (2006) treats them as aspectual heads (see also Sharvit 2003; Grano 2011 for an aspectual semantics for *try*): The basic intuition behind this approach is that they contribute to the specification of how much of the event supplied by the VP has been realized: none at all (*forget*), at least a preliminary stage (*try*), or the entire event (*dare*, *manage*). But unlike standard aspectual verbs such as *begin* or *stop*, these verbs also have another dimension of meaning studied by Karttunen (1971), conventionally implicating negligence (*forget*), effort (*manage*), or bravery (*dare*), or asserting effort (*try*). Focusing on these predicates, the suggestion I would like to make is that it is this extra dimension of meaning that creates the partial resistance toward their realization as aspectual categories.

How can we make this suggestion more concrete? A promising line of reasoning is that inflectional heads below Tense all share a semantic property that the predicates in Table 2 tend to vacillate on due to some feature of their core meaning. In particular, suppose inflectional heads below Tense uniformly fail to introduce their own eventuality description but rather function as modifiers of pre-existing eventuality descriptions: In type-theoretic terms, they are all type $\langle \varepsilon t, \varepsilon t \rangle$ (where $\varepsilon$ is the type for eventualities), combining with a property of eventualities and returning a new property of eventualities. Such a view in fact follows from a particular conception of the syntactico-semantic architecture of the clause whereby Tense (possibly in conjunction with a dedicated aspectual head just below it) is responsible for converting an eventuality description (i.e., a property of eventualities) into a proposition (i.e., a property of worlds): see e.g. Hacquard (2006). This paves the way for a hypothesis that weaves together Napoli's (1981) idea that restructuring predicates do not express their own states or actions with Hacquard's (2013) recent suggestion that we can analyze grammaticalization of modals over time as involving the modal losing its status as a predicate of eventualities. In particular, building on Napoli, aspectual, modal and motion verbs and *want* all straightforwardly function as modifiers of eventuality descriptions and are hence uniformly eligible to realize the relevant functional positions in the clause (see Hacquard 2010 on modals and Hacquard 2008 on *want*). Turning to implicative predicates and *try*, what I would like to suggest is that it is the extra dimension of meaning these predicates have ('negligence', 'effort', etc.) that causes the instability. If the extra dimension is strong enough, the predicate introduces its own eventuality description and thereby precludes restructuring, but (building on Hacquard) if the extra dimension has been sufficiently diminished through bleaching, the predicate does not introduce its own eventuality description, and restructuring becomes available.

One piece of support for this suggestion comes from an observation about Italian *sembrare* 'seem', whose variable acceptability with clitic climbing suggests that it is in a transitional stage of grammaticalization. Cinque (2004) and Haegeman (2006) show that even among those speakers who accept clitic climbing with this verb, clitic climbing is ungrammatical in the presence of an experiencer argument, as illustrated in (24). If introducing an experiencer argument involves introducing a relation between an individual and an eventuality, then a predicate should only be able to combine with an experiencer argument if it introduces its own eventuality description. So we can make sense of the facts in (24) via the proposal that clitic climbing precludes lexical status and the presence of an experiencer argument precludes functional status, since functionalization entails the loss of the ability to support such a thematic relation.

(24)  a. *Gianni   non   **ce**   **lo**   sembra   apprezzare   abbstanza.
          Gianni   not   to-us   it   seem   appreciate   enough
          Intended: 'It seems to us that Gianni does not appreciate it enough.'

    b. Gianni   non   **ci**   sembra   apprezzar[-]**lo**.
       Gianni   not   to-us   seem   appreciate-it
       'It seems to us that Gianni does not appreciate it.'
       (Haegeman 2006:485)

At this stage, the overall proposal remains a hypothesis, but it makes a prediction that can be tested. What needs to be done to test it is to develop criteria for diagnosing the extent of bleaching of the aforementioned dimensions of meaning associated with implicative verbs and 'try', and test whether predicates exhibit a correlation between bleaching and a given language's or speaker's tolerance for restructuring.[8]

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**8** Another potentially fruitful perspective on the unstable predicates is that some of them may be in a transitional stage from control predicates to raising predicates. Cornillie (2005) for example argues that Spanish *prometer* 'promise' and *amenazar* 'threaten' are both undergoing grammaticalization and concomitantly taking on a raising status. The prediction then is that those speakers for whom these verbs are sufficiently bleached should accept clitic climbing with them. de Haan (2007), focusing on the history of SEEM-verbs in Germanic, similarly suggests that raising syntax is the result of grammaticalization. Sometimes, the result of this grammaticalization is a novel aspectual category (see e.g. Tagliamonte and Lawrence 2000 on the history of the English habitual past *used to*), a fate awaiting *try, manage, dare,* and *forget,* if the reasoning here is on the right track.

## 5.2 Connection to related phenomena

An anonymous reviewer asks to what extent the approach taken here can account for attested cases of change in verbal meaning, specifically the development of epistemic meaning out of deontic modals in English (Traugott 1989), as well as the development of English *promise* and *threaten* from control verbs that name particular kinds of speech acts into verbs that maintain this older meaning but that can also be used as raising verbs with an epistemic and evaluative meaning (Traugott 1997).

As for the former phenomenon, Hacquard (2013) suggests an account that makes use of concepts similar to those employed here. In particular, drawing on earlier work (Hacquard 2006, 2010), Hacquard identifies a correlation between clausal height and modal flavor: A modal with root meaning is structurally lower than Tense in the clause whereas a modal with epistemic meaning is structurally higher than Tense in the clause. Hacquard makes sense of this correlation by analyzing modals as event-relative. When they occur below Tense, they are bound by and hence relativized to the VP-event, which gives them root meaning, whereas when they appear above Tense, they are bound by and hence relativized to the speech event, which gives them epistemic meaning. Hacquard suggests that just as restructuring involves the conversion of an individual argument into a dependent variable as in Grano (2012), so the development of epistemic meaning may involve the conversion of an event argument into a dependent variable. In the earliest stage, the modal is a lexical predicate that introduces its own event and is consequently fixed in modal flavor. Then, the event argument gets converted into a dependent variable. As long as it remains below Tense in the clause, though, it will be relativized to the VP event and consequently have root flavor. But now, no longer being a predicate of events, it is free to merge above Tense, and its dependent event variable will be bound by the speech event, thereby yielding epistemic meaning.

As for the development of *threaten* and *promise*, Traugott identifies three historical stages: In the first stage, they are lexical verbs that name illocutionary acts performed by the entity named by the subject. In the second stage, they take on a non-intentional epistemic meaning along the lines of 'portend', and the subject names the source of the promise or threat. Finally, in the third stage, the verbs take on a raising semantics whereby the subject no longer has to name the source of the promise or the threat. Given the existence of the second stage, Traugott concludes that "any hypothesis that there is a necessary correspondence between semantic epistemicity and syntactic verb raising [...] is too strong" (p. 191). Traugott goes on to suggest that there is a historical cline from being a predicate with full thematic properties, to a raising predicate, and then

to a more fully grammaticalized modal. Although the details of this historical path are not fully predicted by what I propose here, the theory here does predict that a morpheme with an epistemic meaning cannot simultaneously be subject-oriented and have functional status. This is consistent with the observed historical trajectory whereby loss of subject orientation precedes full-fledged grammaticalization.

# 6 Conclusion

This paper began with an old question in the restructuring literature: Why do some predicates restructure and others do not? Wurmbrand's (2001) cross-linguistic empirical work imposes important parameters on the shape that the answer to this question must take, by showing that predicates with certain kinds of meanings are stable in their restructuring status while predicates with other kinds of meanings are unstable. I argued that a useful way of making sense of the stability is via an approach in the spirit of Cinque (2006), where the capacity for restructuring is related to independently verifiable and possibly universal properties of clausal architecture. I also argued that the instability can be studied from the perspective of the Cinque-inspired approach once we admit a diachronic dimension to the analysis, and I offered some preliminary suggestions on how semantic bleaching may modulate the availability of restructuring.

Stepping back, I hope to have made the case here that a comprehensive theory of restructuring must weave together at least five dimensions of analysis: syntax, semantics, their interface, cross-linguistic (non-)variation, and the diachronic concepts of bleaching and grammaticalization. If what I say in this paper is on the right track, then we are well on our way to having a theory that does this.

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