CHAPTER 9

Complex Predicate Formation via Voice Incorporation*

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1 Introduction

Restructuring or clause union has been a central topic in studies of infinitival constructions and other embedding configurations ever since the seminal works by Rizzi (1976, 1978) and Aissen and Perlmutter (1976, 1983). The phenomenon refers to constructions in which the embedded predicate is transparent for properties which are otherwise clause-bound. An illustration is given in (1) from Spanish. While the complement of a verb like *try* allows clitics associated with an argument of the embedded verb to 'climb' into the matrix clause, such clitic climbing is not possible from the complement of a verb like *insist*.

(1) a. *Luis las   trató de comer*   Spanish
        Luis them tried to eat
        'Luis tried to eat them.' (Aissen and Perlmutter 1983: 363, (12b))

     b. **Luis las   insistió en comer*
        Luis   them insisted on eat
        'Luis insisted on eating them.' (Aissen and Perlmutter 1983: 363, (13a))

To account for transparency effects, it is typically assumed that predicates such as *try*—restructuring predicates—form a tighter connection with the embedded predicate than non-restructuring predicates. The nature of this tight connection, however, is controversial (see Wurmbrand 2001 for detailed reviews of different approaches). In this article, I will concentrate on two types of mono-clausal approaches, namely complex head approaches and VP-complementation approaches. As shown in (2a), in a complex head approach, the matrix and embedded verbs form a base-generated or derived complex head, a type of v-v compound (see, among others, Geach 1970, Steedman 1985, Haider 1986 et. seq., Jacobs 1992, Hinrichs and Nakazawa 1994, Butt 1995, Kiss 1995, Bouma and Noord 1997, Saito and Hoshi 1998, Hoshi 1999, Müller 1999 et seq., Meurers 2000, Saito and Hoshi 2000, Sternefeld 2000, Williams 2003). In a VP-complementation approach, on the other hand, the embedded complement constitutes a phrasal projection, albeit a highly reduced complement, namely a bare VP without any functional domain above it (Wurmbrand 2001 et. seq.).
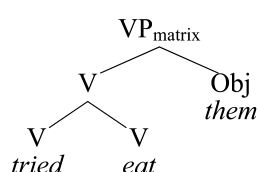
(2) a. Complex head approach   b. VP-complementation approach
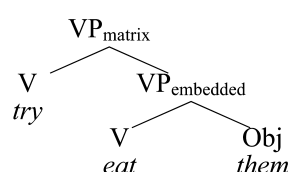
In this article, I show that both approaches have advantages and disadvantages and I provide a new approach to restructuring which combines the insights of a complex head approach with the merits a syntactic VP complementation structure.

A core property of restructuring cross-linguistically is the phenomenon that arguments of the embedded predicate establish an A-dependency (such as Case, agreement, thematic relations) with the matrix predicate. One such dependency is *long object movement* [LOM] (e.g., *long passive*), which I will show is found cross-linguistically. LOM refers to constructions in which the object of the embedded predicate is promoted to the matrix subject in contexts where the matrix predicate is unaccusative, passivized or occurs in the patient voice. Since in LOM constructions, the voice properties of the *matrix* predicate determine the Case and argument structure properties of the *embedded* object, LOM is a showcase of complex predicate formation—the matrix and embedded verbs function as a unit (a complex predicate) regarding voice and

argument structure properties (such as subject-hood, Case etc.). In complex head approaches, the two verbs together select the object and encode active vs. passive properties, whereas in VP-complementation approaches, the matrix *v*P functions as the voice-determining locus for both matrix and embedded VPs.

Comparing LOM in several languages, however, it can be observed that both complex head and VP complementation approaches face the challenge that the embedded predicates appear to be larger than just a V or VP. Specifically, we will see evidence that restructuring complements involve properties of voice, leading to a structure in which the embedded predicates involve a *v* head. Despite the presence of a *v* head, I will argue that complex head and VP complementation approaches are correct in assuming that restructuring complements are syntactically subject-less. To account for these apparent contradictory properties, I propose a general feature system for *v* projections, which, as a consequence, prohibits restructuring *v* heads from combining with a subject directly, by nevertheless carrying regular voice properties as diagnosed by various syntactic, semantic, and morphological properties of restructuring cross-linguistically. Lastly, to derive restructuring, I show that incorporation of the embedded *v* head, rather than the embedded verb itself, provides a new unified approach to complex predicate formation which covers a larger empirical domain than previous accounts and overcomes the problems those accounts face.

In the next section, I lay out some basics of previous analyses and present data that provide challenges for these approaches. In section 3, I present the feature system of *v* I propose, and in section 4, the analysis of restructuring is presented, which covers the argument structure properties of restructuring including the interpretation of the embedded subject, voice and agreement properties of restructuring in several Austronesian languages, event structure and transitivity properties of restructuring constructions, and finally the so-called anti-reconstruction effect, a scope restriction found in restructuring cross-linguistically.

2   Restructuring—Achievements and Challenges

2.1   *Embedded Subjects*
The complex head and VP complementation approaches differ from restructuring approaches involving a bi-clausal structure in two crucial respects: the lack of a functional domain in the embedded clause and the lack of an embedded subject (such as PRO). Evidence for the lack of these properties comes

from LOM, which is found with restructuring cross-linguistically and illustrated for a sample of languages in (3). These constructions have in common that the matrix restructuring predicate, but crucially not the embedded predicate, is passivized (German, Slovenian, Acehnese[1]) or occurs in the patient voice [PV] (Mayrinax Atayal, Takibakha Bunun). As a result, the embedded object becomes the matrix subject. Evidence for subject promotion is the nominative case on the object (German, Slovenian, Mayrinax Atayal, Takibakha Bunun), agreement with the matrix predicate (German, Slovenian), and/or the position of the underlying object (Slovenian, Acehnese, Takibakha Bunun).

(3) a. *dass der Traktor und der Lastwagen   zu reparieren versucht*
        that [the tractor and the truck].NOM to repair   tried
        wurden   German
        were.PASS.PL
        'that they tried to repair the tractor and the truck'

     b. *Čist vse postelje   so   se pa pozabile   pospraviti*
        clear all beds.NOM AUX.PL SE PRT forgot.PASS fix.INF
        'All beds were forgotten to be fixed.' (Marušič 2005: 27, (9a.ii.))

     c. *Aneuk agam nyan geu-ci   (*geu-)peuréksa   lé dokto*   Acehnese
        child male DEM   3.POL-try (*3.POL-)diagnose by doctor
        Lit. 'The child was tried to be diagnosed by the doctor.'
        'The doctor tried to diagnose the child.' (Legate 2012: 501)

     d. *naqaru.un i   t.um.uting   ni   yumin*
        finish.PV   LNK beat.AV.beat GEN Yumin
        ku   bawwak   Mayrinax Atayal
        NOM pig
        Lit. 'The pigs were finished to be beaten by Yumin.'
        'Yumin finished beating/killing the pigs.' (Chen 2010: 5)

     e. *tanam-u =ku   ka bali'ᵢ [kilim   tᵢ]*   Takibakha Bunun
        try-PV   =1SG.OBL ABS Baliᵢ [AV.search tᵢ]
        'I try to look for Bali.' (Shih 2014: 3, (3b))

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1 See Legate (2012) for arguments that (3b) is a passive configuration in which the matrix verb but not the embedded verb realizes the features of the implicit agent (cf. the prefix 3.POL).

To account for the argument structure dependencies found in LOM, bi-clausal approaches need to resort to the assumption that the embedded functional domain is made inactive (to eliminate embedded accusative) and that PRO is circumvented in some way when the embedded object is promoted to the matrix subject. The mono-clausal complex head and VP complementation approaches, on the other hand, derive LOM without any further assumptions. In complex head approaches such as (4) (see also (2a)), the matrix and embedded predicates form a lexical, base-generated or syntactically derived V*-unit, which, for all intents and purposes, behaves like a single verb. The properties of LOM can then be attributed to this merged argument structure.

(4) a. $[_{V^*}$ restructuring V1 + embedded V2]   V*: combined argument
        structure of V1/2
     b. *try* [agent, event (INF)]
     c. *repair* [agent, theme (OBJ)]
     d. *try-repair* [agent, theme (OBJ)]

According to the bare VP complementation approach in (2b)/(5), the embedded restructuring complement [RC] is highly deficient, lacking the projections assigning NOM and ACC Case. The lack of a functional domain in the RC is then responsible for making the embedded object Case-dependent on the functional domain of the matrix predicate.

(5) $[_{vP/TP}$ *v*.ACC/T.NOM $[_{vP1}$ restructuring V1 $[_{vP2\text{-}RC}$ embedded V2]]]

Both restructuring approaches entail that the embedded predicate does not project a syntactic subject. Evidence for this claim comes, among others, from binding. As shown in (6a), in non-restructuring contexts (i.e., full-size complements), embedded anaphors such as inherent reflexives are possible, which is as expected if those complements involve an embedded PRO subject. In the LOM configuration in (6b), on the other hand, anaphors and hence inherent reflexives are impossible. This follows if, as predicted by complex head and VP complementation approaches, a RC does not include a subject which could function as the binder of the embedded reflexive (being passive, the matrix predicate also does not have a subject in an argument position).[2]

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2 See Shimamura and Wurmbrand (2014) for similar data in Japanese.

(6)   a. *Es wurde versucht* [PRO_{IMPL} *$sich_{IMPL}$ den Fisch   mit Streifen*
         it   was   tried   [PRO_{IMPL} $SELF_{IMPL}$ the fish.ACC with stripes
         vorzustellen]
         to-imagine]
         'People tried to imagine what the fish would look like with stripes.'

      b. **weil sich   der Fisch   mit Streifen vorzustellen versucht wurde*
         since SELF the fish.NOM with stripes to-imagine   tried   was
         'since somebody tried to recall the image of the fish'

Complex head and VP complementation approaches are thus very success-
ful in accounting for the existence and properties of LOM in restructuring
contexts. Still, some questions remain. First, although LOM is found in a vari-
ety of (typologically distinct) languages (Acehnese, Chamorro, Czech, Euro-
pean Portuguese, German, Isbukun Bunun, Italian, Japanese, Kannada, Mayri-
nax Atayal, Romanian, Slovenian, Spanish, Takibakha Bunun; see Wurmbrand
2014c for data and references), LOM is not available in all languages, impor-
tantly, not even in all languages showing restructuring properties. For instance,
while German, Dutch, and Polish all allow clitic movement and scrambling
out of RCs, LOM is only possible in German, but not in Polish and most Dutch
dialects.[3] Second, in languages allowing LOM, the availability of LOM is often
subject to idiosyncratic restrictions. To illustrate, consider (7) from Spanish
(and German). As shown in (7a,b), Spanish allows LOM with the matrix verb
finish, but crucially not with the matrix verb *try*. This is particularly puzzling
since clitic climbing is possible from *try*-complements in Spanish, as shown in
(7c). Furthermore, as we have seen above and shown again in (7d), German
readily allows LOM in *try* contexts.

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3   In this paper, I am mainly concerned with the consequences of LOM for complex predicate
    formation, and I set aside other restructuring criteria. As the indicated divergence of LOM and
    clitic climbing/scrambling in (for instance) Dutch and Polish suggests, restructuring is not an
    'all or nothing' property but requires a more nuanced treatment. In Wurmbrand (2014b, To
    appear), I provide such an account, based on the distribution of LOM, clitic climbing, and
    scrambling in 23 languages. I show that despite initial cross-linguistic diversity, certain gen-
    eralizations emerge that allow the separation of language-specific points of variation from
    the contribution of UG that restricts this variation in predictable ways. A crucial observation
    I make there is that the type of restructuring diagnosed by LOM and the type diagnosed by
    clitic climbing/scrambling are triggered by different structural properties which are largely
    independent of each other. For this reason, it is possible to look at LOM restructuring sepa-
    rately.

(7)   a. *Las casas   fueron acabadas de pintar (por los obreros)*
          the houses were   finished   to paint   (by the workers)
           ayer   Spanish
           yesterday
          (Aissen and Perlmutter 1983: 391, (P33b))
          ∎no translation?

      b. **Las paredes fueron tratadas de pintar ayer*
          the walls   were   tried   to paint   yesterday
          'They tried to paint the walls yesterday.' (Aissen and Perlmutter 1983:
          391, (P36b))

      c. *Luis las   trató de comer*
          Luis them tried to eat
          'Luis tried to eat them.' (Aissen and Perlmutter 1983: 363, (12b))

      d. *Die Wände wurden gestern   zu streichen versucht*   German
          the walls   were   yesterday to paint   tried
          Lit. 'The walls were tried to paint yesterday'
          'They tried to paint the walls yesterday.'

The last question arising in particular for the VP complementation approach
concerns the interpretation of the embedded subject. In active restructuring
contexts, the matrix subject acts as the subject of both matrix and embedded
predicates. Similarly, in the LOM cases in (3), the implicit matrix agent must
also be understood as the agent of the embedded predicate. For a VP comple-
mentation approach (where no argument structure unification takes place) a
mechanism is needed that arrives at the correct interpretation. An option that
has been proposed (see in particular Chierchia 1984a, b) is to rely on meaning
postulates such as the one in (8), which lexically associate the matrix agent with
the embedded predicate. Note that Chierchia's approach was aimed at infini-
tival constructions in general and independently of restructuring, that is, also
for languages like English. According to this view, all obligatory control infini-
tives are properties/predicates rather than proposition, and embedded subject-
hood is determined lexically. In order to do the right work for restructuring,
one would therefore need a hybrid view—non-restructuring involves proposi-
tional complements with syntactic control (however that is achieved) whereas
restructuring involves subjectless complements supplemented by meaning
adjustments as in (8). In other words, to account for the difference between (7b)
and (7d), for instance, a meaning postulate would not be sufficient—we would
still need another property, namely a specification of whether the verb *try* can

(German) or cannot (Spanish) combine with a property complement. Given that meaning postulates are also somewhat ad hoc, the question is whether there is a better way to derive the distribution of long passive and the subject interpretation in restructuring contexts.

(8)   a.   *try'* (P) (x) → $\Box_j$ P (x) (Chierchia (1984a: 34))
       b.   whenever x tries to bring about P, then in all the contextually relevant situations (namely those where what x tries actually succeeds) x does P

Given these three issues, complex head and VP-complementation approaches are in need of some refinement. In the next section, we will take two short detours to stem allomorphy in German and restructuring in Austronesian languages, which will provide us with important observations regarding the voice properties of RCs. Base on these findings, I will then propose a new account of restructuring (focusing on LOM) that maintains the strengths of complex head and VP-complementation approaches but also offers an answer to the three questions raised above.

2.2   *Restructuring Involves Voice*

One property that complex head and VP-complementation approaches share is that in restructuring contexts, the embedded predicate does not include a syntactic voice element but corresponds basically to the bare verb (stem).[4] In this section, I will show that this view is problematic in light of German restructuring constructions involving verbs alternating between an inchoative and causative form, and restructuring constructions in Austronesian in general.

2.2.1   Stem Allomorphy in German (Pitteroff 2014)

Although German does not display overt voice marking (beyond periphrastic passive), the presence of *v*/voice projections can nevertheless be diagnosed indirectly. An interesting argument for a richer structure of German RCs (than simple bare VPs) has been made in Pitteroff (2014). German, like many other languages, has verbs that alternate between an inchoative (*the window broke*)

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4   This is not entirely correct for complex head approaches that derive the complex head via syntactic incorporation, in which case, the structure of the embedded predicate could be more complex. However, the richer the syntactic structure is, the more difficult it is then to derive the argument structure merger properties.

and causative interpretation (*he broke the window*). In certain cases, the inchoative–causative alternation is expressed as stem allomorphy in German, as illustrated in (9a-c). A prominent syntactic approach to this alternation is to associate the two interpretations with different *v*P structures. Alexiadou et al. (2006), for instance, argue that the causative version involves a VoiceP (in addition to a causative *v*P, following Pylkkännen 2002; see also Schäfer 2008, Pitteroff and Alexiadou 2012, Pitteroff 2014). In those works, stem allomorphy is then derived as different spell-outs of the verbal roots depending on the syntactic context. In a distributed morphology approach, this could be expressed via vocabulary insertion rules such as the ones in (9d).

(9)		**Inchoative**	**Causative**
a.	sink:	*versinken*	*versenken*
b.	fall/chop (tree):	*fallen*	*fällen*
c.	fall asleep/put to sleep	*einschlafen*	*einschläfern*
d.	√SINK ➡ *versenken*	/__VoiceP	
	√SINK ➡ *versinken*		

This approach has an important consequence for restructuring. Pitteroff (2014, p.c.) observes that in restructuring constructions only the causative versions are possible; the inchoative versions are excluded.

(10) a. *Der Frachter   wurde zu versenken / *versinken   versucht*
the.NOM freighter was   to sink.CAUS / *sink.INCH tried
'People tried to sink the freighter.' (Pitteroff 2014: 235, (31a))

b. *Der Baum   wurde zu fällen / *fallen   begonnen*
the.NOM tree was   to cut   / *cut.down begun
'People began to cut down the tree.' (Pitteroff 2014: 236, (31b))

c. *Der Vulkanier   wurde einzuschläfern / *einzuschlafen versucht*
the.NOM Vulcan was   to.put.to.sleep / *fall.sleep   tried
'People tried to put to sleep the Vulcan.' (Pitteroff 2014: 236, (31c))

The distribution in (10) poses a serious question for both complex head and bare VP complementation approaches to restructuring (note that all the examples above involve LOM). If the causative versions of alternating verbs are

dependent on the syntactic presence of a VoiceP as in (9d), both types of complex predicate approaches are challenged by these examples. Instead what is needed is a more complex structure of RCs—i.e., a structure that involves at least a voice head.[5]

2.2.2 Voice Marking in Austronesian Restructuring

Traditionally, restructuring has been more studied in European languages, however, over the last decades more and more other languages have been investigated as well. Since many works have looked at restructuring in specific languages in isolation, the conclusions reached in those works are often contradictory. For instance, RCs have been analyzed as bare Vs, as VPs, vPs, AspPs, TP, or even CPs. One question arising from this diversity of analyses is whether the choice of structure proposed is simply a theory-internal matter or whether the restructuring phenomena indeed differ significantly across languages. In Wurmbrand (2014b, To appear), I show that approaching the issue comparatively is very fruitful in that it allows us to distinguish between language-specific points of variation and cross-linguistic (possibly universal) properties of restructuring. Concretely, I argue there that rather than a single restructuring 'parameter' there are specific points of variation that conspire to create different degrees of restructuring. While one has to take into consideration general differences between different languages, once language-specific factors are taken care of, a surprisingly uniform picture arises regarding restructuring, in particular constructions with LOM. Restructuring contexts that have been analyzed as involving some form of LOM show a very similar distribution and similar restrictions as LOM in German, Spanish etc. For one, the class of matrix predicates allowing a RC is similar across languages—aspectual verbs and verbs like *try* are common among restructuring predicates cross-linguistically.[6] Furthermore, it has been noted for many languages that LOM is incompatible with embedded tense/mood/aspect marking, which parallels restructuring in German, Spanish, and others, where only semantically tenseless infinitives (infini-

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5 The voice system to be developed in this paper differs in some details from the structure proposed in Alexiadou et al. (2006). Specifically, what I will label v here corresponds better to what Alexiadou et al. (2006), among others, refer to as *Voice*, rather than their causative v. For the current purposes, this difference does not seem to be crucial (but see fn. ■x-ref). In general in this paper, I continue to use the term 'voice' in a descriptive way to refer to any property related to the projections of a split vP.

6 But recall that the class of verbs allowing LOM also shows idiosyncratic language-specific restrictions, which I will come back to in section 4.2.

tives not receiving a future interpretation) allow LOM. Given these and other recurring similarities, it seems that a unified account is justified and, in fact, desirable.

In this section, I will look closer at restructuring in languages of the Austronesian language family. In broadening the empirical domain of restructuring from the well-studied European languages to Austronesian languages, a new domain of investigation opens up which offers a fresh perspective on the structure of RCs and mechanism deriving restructuring, which will ultimately allow us to answer the questions raised in section 2.1.

A property relevant for the distribution of restructuring is the rich *voice* marking of these languages. Interestingly, languages fall into two groups when voice marking in restructuring constructions is considered: languages in which the matrix and embedded voice must match (henceforth voice matching languages), and languages in which the embedded voice is not realized or realized as a default voice (default voice languages). Voice matching is illustrated in (11). In Chamorro and Isbukun Bunun, for instance, both predicates are either active/in the active voice [AV] or passive/in the PV.[7] As shown in (12) for Chamorro, active/passive mismatches lead to ungrammaticality (in the account to be presented, (12a,c) will also be excluded due to lack of ACC for the embedded object).

(11) a. *Ma'a'ñao   i pätgun   ha-taitai*
        NPL.RL.IN.afraid the child 3SG.RL.TR-read
        esti na lepblu   Chamorro
        this LNK book
        'The child is afraid to read this book.' (Chung 2004: 203; (5a))

     b. *Chinägi   dinispensa   si Carmen*
        NPL.RL.IN.PASS.try NPL.RL.IN.PASS.forgive Carmen
        gias Maria   Chamorro
        OBL Maria
        Lit. 'Carmen was tried to be forgiven by Maria.'
        'Maria tried to forgive Carmen.' (Chung 2004: 219; (31a))

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7 Constructions in which the object is promoted to subject or another form of privileged argument are typically not referred to as passive in Austronesian languages but as PV (patient voice). Although I keep the glosses PASS(ive) for Chamorro as used by the author cited, I do not intend to take any particular position on how voice marking in Chamorro is to be treated.

    c. *Miliskin saikin   tu ma-baliv bunbun-cia*   Isbukun Bunun
       AV.want 1SG.NOM TU AV-buy banana-that.OBL
       'I want to buy the bananas.' (Wu 2013: 39; (8))

    d. *Iliskinun-ku   bunbun-a   tu   baliv-un*   Isbukun Bunun
       want.PV-1SG.ACC banana-that.NOM PRT buy-PV
       Lit. 'The bananas are wanted to be bought by me.'
       'I wanted to buy the bananas.' (Wu 2013: 40; (10b))

(12) a. **Tinituhun   ha-lalatdi   si Dolores i famagu'un*
       NPL.RL.IN.PASS.begin 3SG.RL.TR-scold Dolores   the children
       'Dolores began to scold the children' (Chung 2004: 219; (32a))

    b. **Tinituhun   kumati   i pätgun*
       NPL.RL.IN.PASS.begin NPL.RL.IN.cry the child
       'The child began to cry.' (Chung 2004: 219; (32b))

    c. **Ha-hähassu   si Carmen binisita   i biha*
       3SG.RL.TR-think.PROG Carmen   NPL.RL.IN.PASS.visit the old.lady
       'Carmen is thinking of visiting the old lady.' (Chung 2004: 222; (37a))

    d. **Kao ha-ayuda   man-sinedda'   i famagu'un*
       Q   3SG.RL.TR-help PL.RL.IN-PASS.find the children
       ni chi'lu-hu?
       OBL sibling-1SG
       'Did my brother help find the children?' (Chung 2004: 222; (37b))

In contrast, as we have seen in (3), verbs embedded in RCs in German, Slovenian, Acehnese, Mayrinax Atayal, and Takibakha Bunun do not share the voice values of the matrix predicate. In German long passive and Slovenian reflexive (*se*) passive, the embedded verb occurs in the infinitive, an active form. In Mayrinax Atayal and Takibakha Bunun, the embedded verb must occur in the AV, independently of the voice of the matrix predicate (see (13a,b) for Mayrinax Atayal and (14a) for Takibakha Bunun). Embedded PV is excluded, even if the PV matches a PV in the matrix predicate (see (13c,d) and (14b)).

(13) a. *naqaru.un   i   t.um.uting   ni   yumin ku*
    finish.PV   LNK beat.AV.beat GEN Yumin NOM
    bawwak   Mayrinax Atayal
    pig
    Lit. 'The pigs were finished to be beaten by Yumin.'
    'Yumin finished beating/killing the pigs.' (Chen 2010: 5)

    b. *m.naqru   i   t.um.uting   cu   bawwak i   yumin*
       AV.finish LNK beat.AV.beat ACC pig   NOM Yumin
       'Yumin is finishing beating/killing pigs.' (Chen 2010: 7)

    c. **naqaru.un i   tuting.un ni   yumin ku bawwak*
       finish.PV   LNK beat.PV   GEN Yumin NOM pig
       (Chen 2010: 11)

    d. **m.naqru i   tuting.un i   yumin cu bawwak*
       AV.finish LNK beat.PV   NOM Yumin ACC pig
       (Chen 2010: 11)

(14) a. *'asa'-u   =ku   ka   'iskán ma-baliv*   Takibakha Bunun
    want-PV =1SG.OBL ABS fish   AV-buy
    'I want to buy the fish.' (Shih 2014: 12, (23))

    b. **'asa'-u =ku   ka   'iskán bali-vun.*
       want-PV =1SG.OBL ABS fish   buy-PV
       'I want to buy the fish.' (Shih 2014: 12, (23))

Lastly, passive constructions in Acehnese are expressed by means of an affix on the verb realizing the features of the underlying agent (see Legate 2012). Crucially, in the restructuring case in (3b) (repeated as (15)), the features of the underlying agent cannot be realized on the embedded verb but only on the matrix verb. Instead, the embedded verb shows up in the bare form.

(15) *Aneuk agam nyan geu-ci   (*geu-)peuréksa   lé dokto*   Acehnese
    child male DEM   3.POL-try (*3.POL-)diagnose by doctor
    Lit. 'The child was tried to be diagnosed by the doctor.'
    'The doctor tried to diagnose the child.' (Legate 2012: 501)

I propose that the active form in German, the AV in Mayrinax Atayal and Takibakha Bunun, and possibly also the bare form in Acehnese are default voice

realizations.[8] A concrete technical implementation of this idea will be provided in section 4.3. Mayrinax Atayal provides interesting evidence for the claim that the embedded AV is a default voice realization and not a true AV (I summarize one argument here; for details and further arguments, the reader is referred to Chen 2010). In Mayrinax Atayal, like in many other Austronesian languages, A'-extraction of the object is only possible when the verb occurs in the PV. The blocking effect of AV is illustrated in (16a) vs. (16b) for extraction in simple clauses, and (16c) for extraction from an embedded (non-restructuring) clause. In restructuring contexts, on the other hand, AV is possible (in fact necessary) in the embedded predicate as shown in (16d). The fact that AV does not block object extraction in restructuring contexts, whereas it does so in simple clauses and non-restructuring contexts, thus provides evidence for AV not being a true voice.

(16) a. *nanuan ku   tuting.un ni yumin*   Mayrinax Atayal
          what   NOM   beat.PV   GEN Yumin
          'What is Yumin beating/killing?' (Chen 2010: 8)

      b. **nanuan ku   t.um.uting   i yumin*
          what   NOM   beat.AV.beat   NOM Yumin

      c. **nanuan ku   siwal.an ni tali   i   t.um.uting   i yumin*
          what   NOM   allow.LV GEN Tali   COMP   beat.AV.beat   NOM Yumin
          'What did Tali allow Yumin to beat/kill?'

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8 The situation is more complex in Acehnese and I cannot provide a full analysis here. In contrast to the default voice languages discussed in the text, no voice marking of any kind is possible in Acehnese. Since neither voice marking nor the realization of the features of an implicit agent are possible in a RC, a bare VP-complementation approach appears to be the most appropriate from a morphological perspective (see Legate 2012). While such an approach straightforwardly accounts for the bare form of the verb in a RC, a problem may be to derive the subject interpretation (see also the discussion in section 4.2). Furthermore, as shown in Legate (2014), causative elements are possible in Acehnese RCs, which at first sight supports the claim made in this paper that RCs cross-linguistically are *v*Ps. The problem, however, is that the kind of *v* element found in Acehnese RCs is different from the restructuring *v* head I will propose. As Legate (2014) shows, Acehnese provides strong evidence for a split *v*P—a *VoiceP* and a *v*P—since *Voice* elements and causative *v* can co-occur in this language. The element found in Acehnese RCs is the causative element corresponding to *v* (and crucially not the *Voice* elements), whereas the restructuring *v* head required to derive the correct interpretation of RCs would typically be associated with *Voice*. I have to leave this issue unsettled for now.

d. *nanuan ku   naqaru.un i   t.um.uting   ni yumin*
   what   NOM finish.PV   LNK beat.AV.beat GEN Yumin
   'What did Yumin finish beating/killing?'

Although the details and function of Austronesian voice marking are still under debate, a common assumption in many accounts is that voice marking is a reflex of a functional head in the TP/vP domain agreeing with a particular argument (see Pearson 2005, Rackowski 2002, Rackowski and Richards 2005, Aldridge's 2004, 2006, 2007 for different instantiations of this assumption). If this is the case, the question that both complex head approaches and the VP complementation approach are faced with is the question of how voice marking is possible on the embedded verb. Voice matching could perhaps be seen as some form of morphological feature spreading which associates both verbs with the same voice element at PF. However, such a PF voice harmony account could not derive the obligatory AV in Mayrinax Atayal, Takibakha Bunun, and other Formosan languages,[9] since in these languages the matrix and embedded voice do not match. Rather, it seems to be the case that RCs are equipped with embedded voice, but languages differ regarding how the value of the embedded voice is determined.

This is the approach I take in this article. More concretely, I follow a direct syntax-morphology mapping approach in the sense that the morphological presence of an inflectional affix entails the presence of a syntactic head corresponding to that affix (but not vice versa). As discussed in more detail in Wurmbrand (2013b), I assume that Austronesian voice marking is exactly that: agreement of an argument with v. The distribution of voice marking in restructuring contexts in Austronesian then leads to the conclusion that RCs involve a voice head. While this approach provides us with direct evidence for an embedded voice head in RCs in the Austronesian languages, it does, of course, not show that there is also an embedded voice head in RCs in other languages. Although the direct morphological evidence for embedded voice cannot be replicated in languages like German, the same conclusion has been reached regarding the German stem allomorphy facts discussed in the previous section. Furthermore, we have seen in section 2.1 that complex head and bare VP-complementation approaches (i.e., voice-less restructuring approaches) face certain questions. What I will show in the remainder of this article is that the null hypothesis, namely that RCs of the type discussed here involve a voice

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9   TC Chen informs me that Takituduh Bunun, Saaroa, and Kanakanvu also are default voice
    languages.

head in all languages (but see section 4.2 for some refinements), allows us to address and answer these questions, and thereby provide a uniform approach of restructuring cross-linguistically.

3   The Features of Voice

Putting the findings of the previous section together, we appear to have reached a contradictory situation: a RC complement involves a voice head but cannot involve an embedded subject. How can we exclude a subject while simultaneously allowing *v*? To answer this question, a short detour of the feature specification of *v* is necessary. Following a valuation based approach to Agree (Pesetsky and Torrego 2007, among others), I assume that unvalued features are not utilizable by the interfaces, and that elements inserted with unvalued features must enter an Agree relation with an element with corresponding valued features, which results in feature valuation/sharing. In contrast to the standard view of Agree (Chomsky 2000, 2001), I assume a feature valuation system in which unvalued features receive a value from a *c-commanding* element with a corresponding valued feature under Reverse Agree (cf. (17) and (18)).[10]

(17) A feature F: __ on α is valued by a feature F: val on β, iff (Wurmbrand 2014a)
    i.   β c-commands α AND
    ii.   α is *accessible* to β. [*accessible*: not spelled-out]
    iii. α does not value {a feature of β}/{a feature F of β}.

(18)
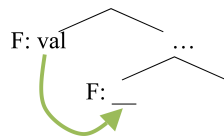
As for *v*, I assume that *v* has two types of features, φ-features and a *v*-feature, which both can be specified (valued) or underspecified (unvalued), yielding

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several different types of *v*.[11] In active contexts, as shown in (19a), the *v*-feature is inserted with an AGENT value (or a different flavor of that value), which translates as an argument introducing head such as Kratzer's (1996) Agent* ($\lambda x e \lambda e s[\text{Agent}(x)(e)]$). Furthermore, *v*: AGENT has the capacity to assign accusative Case. The φ-features of *v* are inserted unvalued.[12] For the φ-features to be valued, *v*' must merge with an NP with valued φ-features. Valuation of *v*'s φ-features by an NP merged with *v*' then translates as *argument-of* relation. Specifically, *v*: AGENT (or *v*: PASS; see below) identifies the φ-features as the AGENT argument.

In non-agentive cases, *v* is inserted with an unvalued *v*-feature. Depending on which head values the *v*-feature, different constructions arise. In case of passive, *v*P merges with the passive auxiliary, which values the *v*-feature of *v* as PASSIVE (see (19b). Following Legate (2010, 2012), I further assume that passive *v* is inserted with lexically valued φ-features, which correspond to the features of an (implicit or oblique) agent. As we have seen in (3b)/(15a), these features are overtly realized in Acehnese. A *v* head valued as PASS translates as a head introducing an existentially closed agent argument which identifies the φ-features on *v* as the implicit AGENT of the event. Since only *v*: AGENT assigns accusative Case, the object must move into the Agree domain of T to receive (NOM) Case.

■ non-matching parenthesis
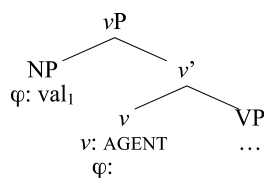
(19) a. Active *v*   b. Passive
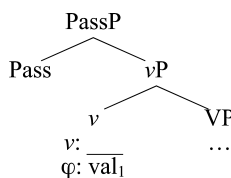
Finally turning to restructuring, I propose that in restructuring contexts, *v* is inserted with unvalued *v* and unvalued φ-features as in (20). I label this *v* head v_R. The lack of an AGENT value accounts for the impossibility of merging an embedded subject with a restructuring *v*. Furthermore, restructuring *v* needs to enter a dependency with matrix *v*, which I suggest is established via *v*

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11   In Wurmbrand and Shimamura (2015), we show that different *v*-combinations yield active, different types of passive, *pro*, inchoative/anti-causative, and restructuring constructions. In the current article, I concentrate on the basic active/passive cases and restructuring.

12   In *pro*-drop languages, the φ-features of *v* are inserted valued (see Alexiadou and Anagnostopoulou 1998).

incorporation. In the next section, I will illustrate the detailed derivations for different restructuring configurations and show how this approach covers the facts discussed so far.

(20)
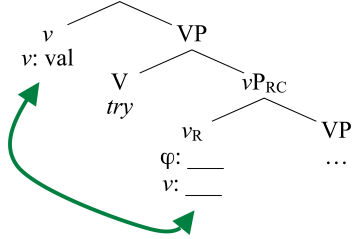
4   Deriving the Properties of Restructuring

4.1   *Subject Interpretation and Agreement*

The basic step-by-step structure of a RC is given in (21). The embedded VP merges with a restructuring v, which is underspecified for both v and φ values. Since a subject can only be introduced by a v head with an AGENT feature, no subject can be merged with a restructuring v, which accounts for the binding properties discussed in section 2.1 and the lack of a subject intervention effect in LOM. Instead the RC is merged directly with the matrix restructuring verb (cf. (21b)). At this point, complex predicate formation takes place, which, in the current approach, involves incorporation of the restructuring v into the matrix verb as in (21c). In contrast to complex head approaches which postulate a type of V-V compound structure for restructuring, I propose a more abstract incorporation mechanism—only v incorporates, leaving the embedded verb within the RC. In section 4.4, I provide evidence supporting this approach, specifically I show that processes such as movement and adjunction can target the embedded VP to the exclusion of the matrix predicate, which is unexpected in a standard complex (V-V) head approach.

(21) a.   b.   c.
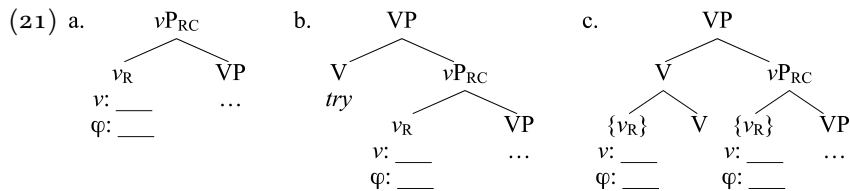
To see the entire derivations, let us start with active matrix restructuring predicates. The further derivation is given in (22). If the matrix predicate is active, matrix v is inserted with an AGENT feature and unvalued φ-features. After v merges with the matrix VP, v values the v-feature of the restructuring v_R as in (22a). Lastly, the matrix subject merges and values the φ-features of both matrix v and v_R. In this derivation, the RC is correctly associated with the matrix subject—due to the two feature valuation relations NP_1 establishes in (22b), NP_1 is interpreted as the agent of both the matrix and the embedded v. The advantage of this analysis is that the embedded predicate is associated with an agent, however, as desired, there is no separate embedded subject in a RC.

(22) a.
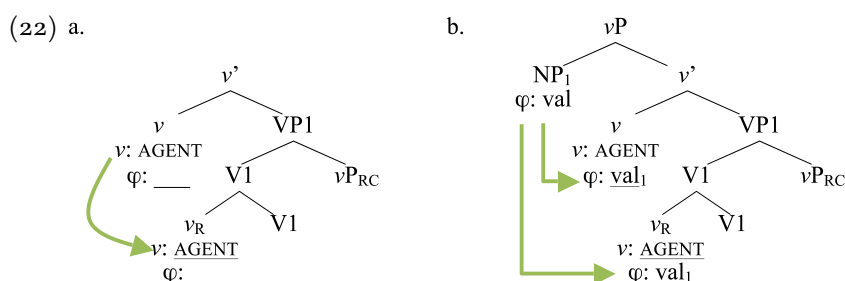
The analysis in (22) also straightforwardly accounts for the agreement properties of restructuring constructions in Chamorro.[13] As noted in Chung (2004), embedded restructuring predicates in Chamorro agree with the matrix subject. This is illustrated in (23) (see also (11a)). Agreement in Chamorro is conditioned by transitivity and mood. In (23a), for instance, in intransitive realis contexts, the (3.)PL marker is *man-* whereas it is *ma-* in transitive realis contexts. Similarly in (23b), 3.SG is realized as *um-* in intransitive realis contexts and as *ha-* in transitive realis contexts. Despite yielding different affixes due to the transi-

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13   The basic restructuring analysis proposed here is similar to the proposal in Chung (2004), but agreement is handled differently. Chung suggests that RCs in Chamorro are vPs, however, in contrast to the account in this paper, in active restructuring contexts, the RC also involves a subject and a v head that is capable of assigning ACC Case. For passive restructuring contexts, the accounts are basically the same. To distinguish between these two approaches in active restructuring contexts is difficult. As we will see in section 4.5, the property that favors the view that RCs are subject-less (and hence Case-less) is scope: quantified elements cannot take scope within the embedded predicate but must obligatorily take matrix scope. The analysis I propose is crucially built on the claim that RCs are not propositional—i.e., they lack a subject (despite having a v head which expresses agentivity). This anti-reconstruction effect is well-motivated for German, Japanese, and Itelmen, but, unfortunately, no scope data are available for Chamorro.

tivity difference between the matrix and embedded predicates, agreement on both predicates in (23) clearly reflects the φ-features of the subject (see section 4.4 for an account and consequences of transitivity mismatches between the two predicates). These agreement facts in Chamorro follow directly from the restructuring configuration in (22), in particular the computation of the φ-values of the matrix and embedded v's: the embedded predicate agrees with the matrix subject exactly because the φ-features of the embedded v are valued by the matrix subject. Agreement can thus be seen as a spell-out of those features on v_R. On the other hand, in bare VP complementation and complex head approaches, agreement on embedded restructuring predicates is not expected and a direct syntax–morphology mapping could not be achieved.

(23) a. *Man-o'sun   ma-dipendi   siha   i famalao'an*
         PL.RL.IN-bored 3PL.RL.TR-depend themselves the women
         gias Juan
         LOC Juan
         'The women are tired of depending on Juan.' (Chung 2004: 205; (8a))

      b. *Um-o'sun   ha-suguni   yu' pära i iskuela i ma'estra*
         NPL.RL.IN-bored 3SG.RL.TR-drive me to the school the teacher
         'The teacher became tired of driving me to school.' (Chung 2004: 203; (5c))

Turning to passive restructuring configurations, if the matrix predicate is passive, v is inserted with valued φ-features (corresponding to the implicit or oblique agent) and an unvalued v-feature. As shown in (24a), after the matrix v merges with VP1, matrix v values the φ-features of the restructuring v_R. The matrix vP is then merged with the passive head in (24b), which values both matrix v and v_R as passive. Since the two v heads share the φ-features, the passive feature correctly associates both predicates with the same (implicit) agent.

(24) a.
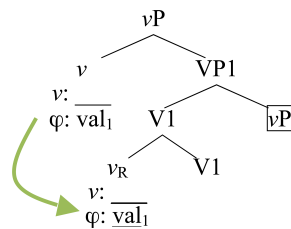
      b.
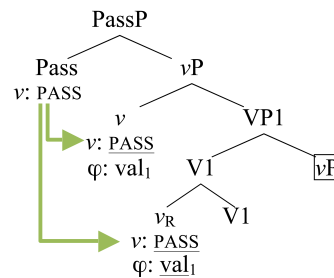
As discussed in Legate (2010, 2014), Chamorro again offers interesting support for this account. There are two passive morphemes in Chamorro: the prefix *ma-* and the infix *-in-* (plus some phonologically triggered variants of these morphemes). The choice between these two affixes depends on the features of the (implicit) agent argument, and crucially not the surface subject. The prefix *ma-* is used when the understood agent is plural, whereas the infix *-in-* is used when the agent is singular (see Chung 1998, 2004). This is shown in (25) (see also (11b)): in (25a), the underlying agent is *the men*, hence *ma-* is used; in (25b), the agent is *Joaquin's mother*, hence *-in-* is used; finally in (25c), the agent is the plural argument *the students* (whereas the surface subject is the singular NP *the teacher*), and the passive morpheme must be the affix specified for plural, i.e., for the features of the implicit/oblique agent. The structure in (24) straightforwardly derives the agent conditioned allomorphy of the passive morpheme, since v is specified for the features of the agent, which are thus visible when vocabulary insertion takes place.[14]

(25)   a. *Pära tafan-**ma**-chägi   **ma**-na'fanätuk   ni   lalahi siha*
           FUT 1PL.IR.IN-PASS-try NPL.RL.IN.PASS-hide OBL men   PL
           Lit. 'We will be tried to be hidden by the men.' 'The men will try to hide us.' (Chung 2004: 204; (6a))

       b. *Hagu pära un-t**in**ituhun   **in**-änña*
           you   FUT 2SG.IR.IN-PASS.begin NPL.RL.IN.PASS-beat
           ni nana-n Joaquin
           OBL mother-LNK Joaquin
           'Joaquin's mother is going to begin to punish you.' (Chung 2004: 219 (31b))
           Lit. 'You will be begun to be punished by Joaquin's mother.'

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14   In the examples in (25), we see that passive verbs can also agree with the promoted surface subject. This agreement is missing in the embedded predicates due to various independent restrictions on subject agreement (S. Chung, p.c.; in (25a), the embedded verb involves a causative, which is already specified for agreement; furthermore, in realis forms, singular agreement can be unpronounced yielding (25b,c); see also Chung 1998). If (surface) subject agreement is also possible in passive RCs, this would mean that the transitivity head (see section 4.4) also has φ-features which are valued by the object on its way to the matrix clause where it is assigned NOM Case by T. Movement is necessary since the object must escape spell-out in the RC, which, I will suggest below, constitutes a spell-out domain.

c. ***Ma-hähassu*** *ni istudianti* ***ma-bisita***
NPL.RL.IN.PASS-think.PROG OBL students NPL.RL.IN.PASS-visit
i ma'estra
the teacher
'The students are thinking of visiting the teacher.' (Chung 2004: 228; (44a))
Lit. 'The teacher is thought to be visited by the students.'

To conclude, the derivations in (22) and (24) derive the thematic properties found in restructuring constructions cross-linguistically: the matrix and embedded predicates are both associated with the same agent, and a RC is hence interpreted agentively (after valuation, the embedded vP_{RC} is agentive, because v is either valued v: AGENT or v: PASS, both of which associate the embedded VP with an (explicit or implicit) agent). Importantly, however, a vP_{RC} does not involve its own subject, but 'shares' the subject with the matrix predicate.[15] The analysis therefore correctly accounts for the apparent paradoxical situation that RCs are agentive but subject-less.

4.2 The Distribution of v_R

As we have seen in the previous section, the restructuring account inolving an underspecified v_R derives the subject interpretation of RCs without the postulation of meaning postulates. The account also provides an answer to the two other issues raised in section 2.1—namely the fact that restructuring/LOM is not available in all languages and the observation that not all restructuring predicates allow LOM. Since v_R is a specific lexical item, it is expected that it is not available in all languages; certain languages have v_R in their lexical inventory, others don't.[16]

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15   This account is designed for subject sharing cases—cases in which the embedded subject is identified with the matrix subject. A somewhat open issue is whether the account needs to be extended to object control cases. In section 4.5, I discuss certain causative constructions in Japanese which appear to show mixed behavior regarding the propositional status of the embedded complement, and I provide a feature sharing account to identify the embedded subject with the matrix causee argument. A similar analysis could be developed for object control cases if needed (it would require a more fine-grained VP structure; e.g., an applicative phrase which can act as the subject/v identifier). It remains to be seen how extensive the class of object control restructuring is, in particular, it needs to first be established whether such cases do indeed require a subject-less embedded complement (the only clear case so far is *manage* in German; thanks to M. Pitteroff and a reviewer for this point).

16   A reviewer points out that the current approach, like an approach involving meaning pos-

Furthermore, I assume that the merge relation in (21b) which combines a matrix verb with a vP_{RC} is subject to regular syntactic selection—certain verbs can select a vP_{RC}, others can't. Assuming that v_R is selected by the matrix V, it is expected that the verbs which do so can vary cross-linguistically. Thus German *versuchen* 'try' would be equipped with the v_R selecting feature/property, whereas Spanish *tratar* would lack it. The variation, however, is not entirely arbitrary. Since selection is a local process, matrix Vs selecting v_R must combine with v_RP directly. Therefore, only matrix verbs that are semantically compatible with a tenseless complement (i.e., a complement that does not require an IP projection such as TP, ModP to derive the correct interpretation) can merge with vP_{RC}. Matrix verbs that require an infinitive with a future orientation, for instance, must merge with a complement encoding such an interpretation, e.g., a TP-complement. Since in this scenario the matrix verb could not locally select v_R, it is predicted—correctly—that restructuring, specifically LOM, is not found in contexts with future infinitives. As mentioned above, the class of matrix predicates allowing a RC with LOM is similar across languages. In the account provided here this follows from the required selectional relation between V and the embedded vP which can only be established in tenseless infinitives. However, since selection also leaves room for language-specific restrictions, the class of matrix predicates compatible with LOM in any given language is typically only a subset of the universally possible LOM allowing predicates.

Before returning to the syntactic details of restructuring configuarions, let me speculate about a question regarding the cross-linguistic distribution of v_R I haven't specifically addressed yet, namely the question of whether RCs are indeed vPs in all languages or whether a bare VP-structure could still be available in certain languages and/or certain constructions as well. One crucial piece of motivation for the (cross-linguistic) presence of a restructuring

tulates, involves supplementing the lexical entry of a verb with an additional specification. This is, of course, correct. The difference between the approaches lies in what is considered to be the default, non-special behavior or meaning. To derive, for instance, why German *try* allows LOM, but Spanish *try* doesn't, German *try* is given a special selectional property in the current account, which allows it to combine with an underspecified complement. The LOM cases are thus assigned a special status and all other verbs combine with a standard propositional complement. In an approach employing meaning postulates, an additional mechanism is needed to distinguish between the verbs/languages allowing LOM and the ones prohibiting it. That is, something independent of the meaning (German and Spanish *try* mean the same) needs to do the work in the syntax to exclude LOM in a large set of infinitival constructions.

v_R has been the interpretation of the RC—the embedded predicate needs to be associated with a subject, and achieving this transparently in the syntax avoids the ad hoc stipulations of meaning postulates. The strongest position would be to assume that there are no meaning postulates, and that thematic relations must always be reflected syntactically, in order to arrive at the correct interpretation. Such a view would then disallow combinations of the form [*try* + VP] as illicit semantic objects, even if selectional properties could be met in such a combination—since the embedded VP is not associated with a subject (it is not connected to a subject introducing v), the correct interpretation could not be generated. Interestingly, this approach does not exclude bare VP-complementation *per se*, it only excludes it for restructuring constructions in which the embedded predicate is semantically associated with an (explicit or implicit) subject. A combination of [V+VP] is predicted to be possible if the embedded predicate lacks the properties associated with *Voice/v*. A candidate for such a structure may be Icelandic *let* passive, which, in contrast to its German analogue (and regular passive), shows no evidence of an implicit argument in the lower predicate—neither *by* phrases nor agentive modifiers are possible.[17] A bare VP complement approach as proposed in Wood (2011) and Wood and Sigurðsson (2014) would thus be justified. Incidentally, Icelandic is not a LOM language, which in the current approach boils down to the lack of v_R in this language. The fact that *let* passive does not involve subject properties in Icelandic, but it does in German, could be seen as further support for the current approach: Icelandic does not have v_R available, hence the only restructuring option is a VP-complement, whereas German is a LOM language, and hence v_R can be used in regular as well as *let* passive restructuring contexts (for further details see also in particular Pitteroff 2014).

4.3   *Phases and the Spell-out of* Voice

In this section, I discuss the morphological voice properties in restructuring constructions and show that the current account, bundled with a particular view on phases, also allows us to derive the difference between voice matching and default voice languages. Before turning to the languages with voice marking, let us look in more detail at the structure of the embedded predicate in restructuring constructions, in particular the phasehood properties of RCs.

I propose that voice incorporation has an important structural reflex: following several recent strands of research (Gallego 2005, 2010, Gallego and

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17   I thank J. Wood, p.c., for bringing these constructions to my attention.

Uriagereka 2006, den Dikken 2007), I assume that head movement of a phase head extends (or slides up) the phase to the projection of the incorporated (or re-projected) head. Since the restructuring vP closes off the extended projection of the embedded verb (merging the matrix verb starts a new lexical verbal domain), a restructuring vP is a (potential) phase.[18] Incorporation of v into v as in (28), however, extends the phasehood to the matrix VP and makes the restructuring vP a spell-out domain [SOD]. As a consequence, the embedded object must move to Spec,VP1 to escape spell-out of the vP$_{RC}$. Recall that only v heads specified with a v: AGENT feature can assign ACC case. Although RCs involve a v head, this head is underspecified at Merge, and still at the stage of the derivation in (26), i.e., when spell-out of the restructuring vP occurs. Since no case is available for the embedded object in situ, movement to the phase edge (Spec,VP) as in (26) must apply for the object to escape spell-out.[19]

(26)

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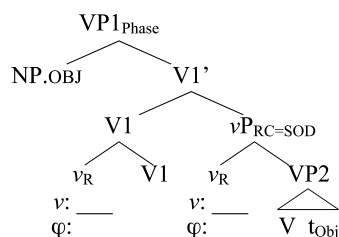
18   It is crucial that restructuring verbs such as *try* are considered as lexical verbs. Extensive motivation for this view comes from systematic differences between functional restructuring (i.e., constructions in which the restructuring verb is part of the clausal spine) and lexical restructuring (see Wurmbrand 2004, Bobaljik and Wurmbrand 2005). Although it is not crucial for this article, I follow a *dynamic phase approach*, according to which the highest projection of a cyclic domain (here the extended domain of v) is a phase (Bobaljik and Wurmbrand 2005, 2013, den Dikken 2007, 2012a, b, Bošković 2014, Wurmbrand 2013a, b).

19   As we will see below, the φ-features of v_R are valued by the matrix subject in a subsequent step of the derivation. One may wonder why the moved object does not/cannot value v's φ-features in (26). Such configurations are possible in principle, however, they necessarily result in a reflexive interpretation (e.g., *Leo shaved*), since, due to such φ-valuation, the object ends up in an argument-of relation with both v and v. For the restructuring cases discussed here, such a derivation would be filtered out at the semantics interface.

Evidence for this obligatory movement of the object is provided by VP fronting as in (27) (the data are from Bobaljik and Wurmbrand 2005: 823 f.). If the embedded object remains in the RC as in (27a), its Case cannot be licensed and the derivation fails.[20] On the other hand, movement of a remnant RC as in (27b) is possible since the object occurs in the matrix clause, where it can receive Case from T.

(27) a. *[*Ein blauer Wagen zu reparieren*]$_{RC}$ *wurde erst gestern*
a.NOM blue car   to repair   was   just yesterday
vergessen.
forgotten
It just happened yesterday that they forgot to repair a blue car.

  b. [*Zu reparieren*]$_{RC}$ *wurde erst gestern   ein blauer Wagen vergessen.*
to repair   was   just yesterday a.NOM blue car   forgotten
It just happened yesterday that they forgot to repair a blue car.

Voice incorporation opens a way to derive the difference between voice matching and default voice languages. When a phase is complete, an operation that takes place within the phase and before actual spell-out is copy choice: in chains consisting of more than one copy of a particular syntactic object, one copy of that object is selected for pronunciation/interpretation, and the other copy is typically deleted. Consider now the configuration in (28) in this respect. At the VP1 phase level, a choice has to be made between the higher copy of v or the lower copy of v. If the higher copy is chosen, the lower copy is deleted and spell-out only affects the embedded VP2. The incorporated v is spelled-out when the next phase is completed, and at that point, the incorporated v will have been valued with the same value as the matrix v (cf. (22) and (24)).[21] Since the two v heads have the same features, voice matching is derived. Suppose now that certain languages also have the option of choosing the lower copy of the incorporated v before PF spell-out of the restructuring vP. At the stage of the derivation when spell-out of vP$_{RC}$ occurs, however, the features of the embedded v have not been determined yet. I propose that in such cases, default values

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20   Movement out of a fronted XP after reconstruction of that XP is excluded due to the freezing effect caused by fronting (see Bobaljik and Wurmbrand 2005 for further details).

21   Since the embedded V and its corresponding voice element are pronounced in different SODs, it is necessary in this approach to allow for morphophonological regrouping when the two SODs are joined together (thanks to J. Wood, p.c., for pointing this out).

are used at PF (but to ensure the correct interpretation, LF must always choose the higher copy of v). For the languages under consideration, the default forms are the AV in Mayrinax Atayal, the infinitive in German, and possibly the bare form in Acehnese.[22]

(28)
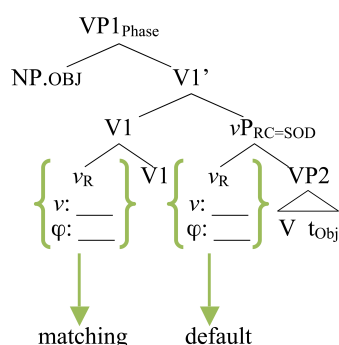
4.4 *The Independence of Restructuring Complements*

Although the v incorporation approach proposed here is similar to the traditional v-v complex head formation approach in that the (implicit or explicit) matrix subject is shared by both predicates, the account is also different in two crucial ways. First, v incorporation only affects the interpretation of the subject—the remaining argument structures remain separate. Second, as

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22 This account of voice incorporation entails that in default voice languages, there should not be v-to-v movement, at least not in RCs. An alternative to the copy choice mechanism suggested in this section would be to relate the difference between voice matching and default voice languages to different phasehood properties of the two language types. In default voice languages, $v\text{P}_{RC}$ is spelled out when VP1 is complete (at the stage depicted in (28)). Since at this point, the embedded v_R has no value, a default value is realized at PF. In voice matching languages, on the other hand, further phase extension applies (recursively to the matrix vP), and $v\text{P}_{RC}$ is hence not spelled-out at the point of the derivation in (28). Recursive phase extension could derive a restructuring configuration in which the embedded V2 and its associated v_R are pronounced in the same SOD (i.e., after the features of v_R have been determined), thus yielding voice matching. In principle, whether a RC is a phase or not should be testable (e.g., via scope or the position of embedded elements entering a dependency with a matrix element), in reality, this is often difficult, however, and I do not have the means to do so for the languages discussed here. Setting these technical details aside, the main idea proposed here can be summarized as follows: default voice arises when the embedded v is spelled-out before the features of v_R are valued, whereas voice matching arises when v is spelled-out together with a valued v_R.

shown in (28), the embedded VP2 remains an independent VP in syntax as well as an independent semantic event. In what follows I show that the properties of restructuring do indeed favor the *v* incorporation approach over a traditional complex V-V approach.

As argued in Wurmbrand (2001, 2007) for German and Bobaljik and Wurmbrand (2007) for Japanese, RCs clearly constitute independent events since they can be modified separately and can also involve a telicity specification different from the matrix predicate. German, like English, has two types of telicity modifiers—*in* adverbials which are only compatible with a telic (bounded) event, and *for* (German *lang*) adverbials which are only compatible with atelic events. Following the common view (see for instance Rothstein 2004), (a)telicity is not a property of verbs but rather a property of larger units—i.e., VPs— since the nature of the object affects the telicity of the VP (e.g., #*The build the dam for a year* vs. *The build dams for a year*). As shown in (29a,b) (examples from Wurmbrand 2007: 277, (45)), restructuring configurations can involve both an *in* and a *for* adverbial at the same time. However, *in two months* can only modify the embedded event, which involves a bounded telic predicate (cf. the definite object) and thus requires an *in*-adverbial, whereas *for a year* can only modify the atelic matrix event. If the object is changed to a plural DP, on the other hand, the embedded event becomes atelic, and a *for* adverbial is possible for both events as in (29c).

(29) a. *Sie   haben den Damm ein Jahr lang in zwei Monaten bauen wollen*
       they   have   the dam   one year long in two months   build want
       'They wanted for a year to build the dam in two months.'

   b. **Sie haben den Damm in zwei Monaten ein Jahr lang   bauen wollen*
       they   have   the dam   in two months   one year long build want
       *'They wanted in two months to build the dam for a year.'

   c. *Sie   haben ein Jahr lang   zwei Monate lang Dämme bauen wollen*
       they   have   one year long two months long   dams   build want
       'For a year, they wanted to build dams for two months'

In a VP-complementation approach, these facts are unsurprising. As sketched in (30a), there are two distinct VPs, hence they can be different in terms of telicity, and either can be modified by its own adverbial. Crucially, the shape of the embedded object only affects the telicity of the embedded event and has no effect on the properties of the matrix event (i.e., the matrix event in (29a,c) is atelic, independently of whether the object is a definite DP or a plural

DP). In a complex v-v approach, on the other hand, it is difficult to see how these examples are derived. The crucial claim of such approaches is that there is only one VP, only one event, and that the arguments are licensed jointly by the complex V head. As shown in (30b), it is not then clear how the VP could be classified in terms of telicity. Is it telic or atelic? How are two event modifiers possible if there is claimed to be only a single event? Why are there restrictions regarding which modifier modifies which part in (29a,c)—i.e., the *for* adverbial the *wanting* and the *in* adverbial the *building*? Given that the object combines with the complex v-v, why does the shape of the object (definite vs. plural) only affect one part of the complex head? These and similar questions arise, and even if a semantic (non-structural) model of modification can be developed to account for the event modification properties in restructuring constructions, it seems clear that the VP-complementation approach has a clear advantage here.

(30) a. *for/*in*-adverbial [$_{\text{Matrix VP = atelic}}$ *want* [$_{\text{RC = telic}}$ *in/*for*-aderbial]]
       b. *for*-adverbial *in*-aderbial [$_{\text{VP = ???}}$ [$_\text{V}$ *want+build*] object]

A further argument against a complex v-v head comes from the syntactic properties of RCs. As shown in (31), LOM in German is compatible with VP-topicalization. Since the embedded verbs (more concretely the embedded VP) can undergo movement by itself, a complex v-v structure is again problematic. Assuming the structure in (28), on the other hand, straightforwardly derives these facts.

(31) [*Zu reparieren*]$_{VP}$ *wurden nur blaue Autos vergessen*
       [to repair   ]$_{VP}$ were   only blue cars   forgotten
       'They only forgot to repair blue cars.' (Wurmbrand 2007: 264)

The last argument for the current approach and against a complex head approach is provided by restructuring in Chamorro. As we have seen in section 4.1, Chamorro RCs display subject agreement, which is sensitive to the transitivity of the predicate. Crucially, in restructuring contexts, the matrix and embedded events register transitivity separately. In (32a) (repeated from (11a)), the matrix agreement comes from the intransitive paradigm, whereas the embedded agreement uses the transitive paradigm. The opposite is the case in (32b): the verb *begin* is transitive in Chamorro (S. Chung, p.c.; when *begin* occurs with an eventive NP as in (32c), a reflexive configuration is used), hence matrix agreement chooses the transitive form, whereas the embedded verb is intransitive and agreement is chosen from the intransitive paradigm.

(32) a. *Ma'a'ñao*   *i pätgun   ha-taitai*
          NPL.RL.IN.afraid the child 3SG.RL.TR-read
          esti na lepblu   Chamorro
          this LNK book
          'The child is afraid to read this book.' (Chung 2004: 203; (5a))

     b. *Ma-tutuhun*   *man-mahalang i famalao'an as Dolores*
          3PL.RL.TR-begin   PL.RL.IN-lonely the women   OBL Dolores
          'The women began to feel lonely for Dolores.' (Chung 2004: 204; (5d))

     c. *Ha-tutuhun*   *gui'   i ichan*
          3SG.RL.TR-begin itself the rain
          'The rain began.' (S. Chung, p.c.)

Under a complex head approach this distribution would again be difficult to
account for. Furthermore, if restructuring were to involve merged argument
structures, it would be mysterious why the two predicates register transitivity
differently. In the v incorporation approach, on the other hand, argument 'shar-
ing' only applies to the subject of the two predicates. The argument structures
of the two predicates are not merged and remain distinct. Thus in (32a), the
embedded predicate is transitive since it is associated with two arguments—v
(or another head of a decomposed VP) selects an object and the restructuring v
head associates the VP with an agent argument. The matrix verb, on the other
hand, selects only one NP-argument, the subject, and hence the matrix predi-
cate qualifies as intransitive. The opposite situation is the case in (32b).

If transitivity is encoded syntactically, these facts motivate a split vP as, for
instance, proposed in Collins (1997, 2005), where transitivity and agentivity
are associated with different projections. RCs project their own transitivity
phrase (which is specified independently of the matrix predicate), however, the
restructuring v head (i.e., the head associated with the agent interpretation and
ACC Case) is underspecified and only receives its values via the dependency
with the matrix v.

4.5   *Anti-Reconstruction*
The last restructuring property I discuss in this article is the so-called anti-
reconstruction effect found cross-linguistically in restructuring contexts.
Bobaljik and Wurmbrand (2005, 2007) show that in German, Japanese, and Itel-
men, quantifiers originating in a lexical RC cannot take scope within the RC
but must obligatorily take scope over the matrix predicate. Some of the rele-
vant examples from the three languages discussed in Bobaljik and Wurmbrand

(2005: 810) are given in (33). The English sentence *He forgot to close all windows* is ambiguous in that it can refer either to a situation in which the subject didn't close any window (all windows have the 'not-closed' property; ∀ » *forget*) or a situation in which the subject closed some but not all windows (what didn't happen: closing of all windows; *forget* » ∀). The restructuring constructions in (33), on the other hand, are unambiguous and only allow the first interpretation, i.e., the scope relation in which the universal QP takes scope over *forget*.

(33) a. *weil   er   alle Fenster   vergessen hat* [t_{OBJ} *zu schließen*]
          since he   all windows (ACC) forgotten has [t_{OBJ} to close]
          'since he forgot to close all the windows'   ∀ » *forget*; *forget » ∀

      b. *t'-əntxa-čeʔn*   [*miɫ okno-ʔn   sop-es*]
          1SG-forget-3PL.OBJ [all   window-PL close-INF]
          'I forgot to close all the windows.' (S6:6–7)   ∀ » *forget*; *forget » ∀

      c. *John-wa   subeto-no ringo-o   tabe-wasure-ta*
          John-TOP all-GEN   apple-ACC eat-forget-PAST
          'John forgot to eat all the apples.'   ∀ » *forget*; *forget » ∀

The anti-reconstruction effect is not restricted to objects (which we have seen are in a Case dependency with matrix v or T), but has also been argued to exist for embedded modifiers as in (34) (see Saito 2000, Saito and Hoshi 1998, 2000, Bobaljik and Wurmbrand 2007, Takahashi 2010, 2011).[23]

(34) a. *Taroo-wa hon-o   Mary-dake-kara kari-wasure-ta*
          Taro-TOP book-ACC Mary-only-from borrow-forget-PAST
          'Taro forgot to borrow books only from Mary.' (Takahashi 2011: 245; (56))
                                                          only » forget; *forget » *only*

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23   Note that the judgment of (34b) is controversial; Saito (2000) only allows the wide-scope reading of *only* (hence showing an anti-reconstruction effect), whereas Takano (2003) finds the example ambiguous. Shimamura and Wurmbrand (2014) suggest that this difference can be explained by the ambivalent status of the potential verb as a lexical verb vs. a functional modal head. As shown in Bobaljik and Wurmbrand (2005), anti-reconstruction effects arise only in lexical restructuring contexts. Thus, if the potential verb is a functional head, no anti-reconstruction effects would be expected (see also Nomura 2005 for the lack of anti-reconstruction with the potential verb). The restructuring analysis in this paper applies only to lexical restructuring (functional restructuring would involve a single lexical predicate and aspectual and/or modal projections above the vP), and I therefore set the Japanese potential construction aside.

   b. *Taroo-wa me-ga   0.001-byoo-dake   ake-rare-ru*
     Taro-TOP eye-NOM 0.001-second-only open-can-PRES
     'Taroo can open his eyes only for 0.001 seconds.'

only » can; %can » only

only » can: He cannot open his eyes for long (e.g., because his eyes are very sensitive to ulatraviolet rays)
can » only: He has a special ability to move his eyelids very quickly

The account proposed in Bobaljik and Wurmbrand (2005) is built on the claim that lexical RCs are *agreement domains*, which, by assumption, can be crossed by movement but not by Agree. Embedded objects thus must move out of a RC to get into the Agree domain of matrix *v* or T. Furthermore, such movement is assumed to not be able to reconstruct since Agree must be visible at LF. The restructuring approach put forward in the current paper allows us to follow a suggestion made in Bobaljik and Wurmbrand (2007) and derive the anti-reconstruction effect without the additional concept of agreement domains and by maintaining the same locality restrictions for Move and Agree. Consider again a basic restructuring configuration in (35) (I ignore intermediate steps of movement required due to the phasehood of VP1).

(35)
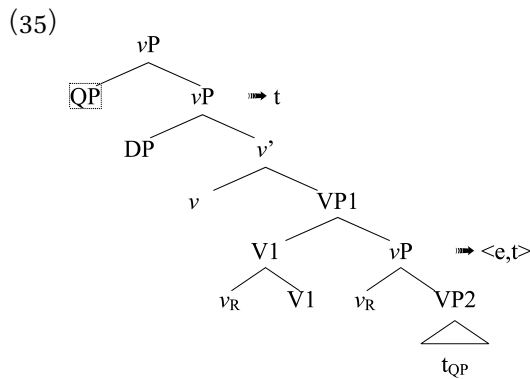
A standard view on quantifier scope (Heim and Kratzer 1998) is that quantifiers must combine with a clause-denoting expression (of type *t*). As shown in (35), although a RC is a *v*P (since it involves a *v* head), it is not a propositional expression, since no subject is merged with the embedded *v'*. The first propositional node is the matrix *v*P. The structure in (35) then leads to a very simple account of the anti-reconstruction effect: QPs within the RC cannot be interpreted internal to the RC since there is no type *t* projection. Movement to the

matrix vP is thus required, which necessarily brings the QP outside the scope of the matrix verb.

The current voice incorporation and feature valuation analysis also overcomes a challenge raised in Takahashi (2010, 2011) for the analysis of anti-reconstruction effects presented above. Takahashi provided binding data which can be taken as evidence for the claim that Japanese RCs involve an embedded subject (i.e., the RC would qualify as a propositional expression), yet the same anti-reconstruction effect is found as in (33) and (34). The relevant data are given in (36) (see Takahashi's works for detailed scope descriptions). In these configurations, the matrix restructuring verb combines with a causative verb, which in turn combines with a RC. Furthermore, the RC contains an *only*-phrase as well as a subject-oriented anaphor (*zibun*). Since *zibun* is subject-oriented, Takahashi assumes that direct binding by the causee argument (which is an internal dative argument) is not possible, but there must be a PRO subject in the RC which is controlled by the causee argument and which binds the anaphor in the interpretations where *zibun* refers to the dative argument. Crucially, in the case of lexical restructuring in (36a), an anti-reconstruction effect arises, independently of whether *zibun* is bound by the matrix subject or the causee argument. Thus if *zibun* binding requires a PRO subject, the embedded RC should qualify as a propositional complement, and quantifiers should not be required to move all the way up to the matrix clause. In short, no anti-reconstruction effect would be expected, contrary to fact.

The example in (36b) involves the potential verb which could be a functional head (see fn.■x-ref), and as expected no anti-reconstruction effect arises. This example is still important, however, since it shows again that in a clear case of restructuring (nominative Case on the object is evidence for restructuring), *zibun* can co-refer with the dative causee argument, which again could be taken as evidence for an embedded subject in the RC.
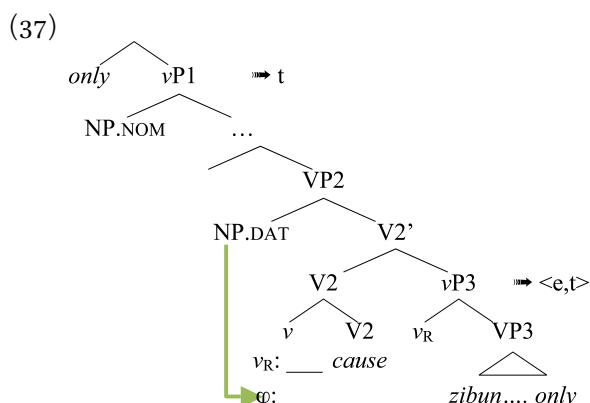
(36) a. *Sensei$_T$-wa   gakusei$_S$-ni   sono-nyuusu-o   zibun$_{T/S}$-no zimoto-dake-e*
   teacher-TOP student-DAT that-news-ACC SELF-GEN   home-only-to
   hookoku-sase-wasure-ta
   report-cause-forget-PAST   *only* » forget; **forget » only*
   'The teacher$_T$ forgot to make the student$_T$ report the news only to his$_{T/S}$ home.' (Takahashi 2011: 249; (61))

b. *Taro_T-ga   Hanako_H-ni   zibun_{T/H}-no migite-dake-ga*
Taro-NOM Hanako-DAT SELF-GEN   right.hand-only-NOM
age-sase-rare-ta
raise-cause-can-PAST   *only » can; can » only*
'Taro_T could make Hanako_H raise only his_T/her_H right hand.' (Takahashi
2010: 330; (21); Takahashi 2011: 23; (17))

These facts are very interesting, however, I believe the conclusion that binding
can only be achieved by a PRO argument in the embedded RC is not necessary.
Let us zoom in on the relevant part of the structure under the account proposed
here. As shown in (37), the *v* head of the lowest predicate is underspecified
and undergoes incorporation into the higher v—the causative verb. In addi-
tion to the RC, the causative verb also combines with an internal argument (the
dative causee NP). At this point in the derivation, the causee NP values the φ-
features of the incorporated *v* head. This Agree relation has an important con-
sequence: it associates the dative causee with the agent of the embedded pred-
icate (exactly parallel to what has been proposed for matrix subjects in simple
restructuring contexts such as (22)). Eventually, the embedded *v* will be valued
as *v*: AGENT, yielding the correct interpretation that the dative arguments in
(36) are also interpreted as the agents of the deepest embedded predicates.[24]

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24 A technical question arising for examples such as (36) is how feature valuation is achieved
    in recursive restructuring configurations. Since the empirical distribution of such configu-
    rations is not entirely clear, I leave a detailed account aside here. I only note that if stacked
    RCS are possible, a form of recursive *v* incorporation as suggested in fn. ■x-ref would need to
    be adopted. While stacked lexical restructuring constructions are possible in Mayrinax
    Atayal (TC Chen, p.c.), they are not very natural, if possible at all in German (note that
    the Japanese examples involve a causative, which could also be treated as a functional
    head). In German, LOM across two RCs is impossible, even for speakers who have no prob-
    lem with LOM otherwise. That is, although both *begin* and *try* allow LOM (i.), and the two
    verbs can (more or less) combine in the non-restructuring variant, (ii.), LOM across both
    verbs is impossible (iii.).

    i.   *Der Wagen   wurde zu reparieren begonnen/versucht*
          The.NOM car was   to repair   began/tried
          'They tried/began to repair the car'

    ii.   *?Es wurde begonnen zu versuchen den Wagen   zu reparierent*
          It   was   begun   to try   the.ACC car to repair
          'They began to try to fix the car.'

    iii. **Der Wagen   wurde zu reparieren zu versuchen begonnen*
          The.NOM car was   to repair   to try   began

(37)

```
        only      vP1        ⟼ t
             NP.NOM     …
                          VP2
                   NP.DAT       V2'
                          V2          vP3      ⟼ <e,t>
                       v     V2    vR    VP3
                      vR: ___ cause
                                         zibun…. only
                      φ: ___
```

Let us now consider how binding works in (36)/(37). In the current account, it seems that direct binding of *zibun* by the dative NP and subject-orientation of *zibun* are not in conflict in the configuration above. Although the causee NP is not a nominative argument and it is also an internal argument of the causative verb, it does clearly qualify as the subject of the embedded predicate as well, since the φ-valuation operation indicated above associates that NP with the agent of the embedded predicate. Thus, if subject-orientation is a matter of semantics, binding by the dative causee will satisfy the constraint.

Binding can also be straighforwardly derived in the configuration in (37) under recent Agree-based approaches to binding. Reuland (2005, 2011), for instance, argues that binding is not established directly between an antecedent and the anaphor but is intermediated by a functional head, which is in an Agree relation with both, the antecedent and the anaphor. The structure above involves exactly such a configuration: the dative NP Agrees with *v* and *v* Agrees with *zibun* (which guarantees subject-orientation). Hence *zibun* is in an indirect dependency with the dative NP, yielding the binding relation. Crucially, under both binding accounts, no embedded PRO subject would be necessary. Thus the claim that RCs are not propositional complements can be maintained even for the challenging cases in (36).[25]

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25   A further positive consequence of the current approach is that subject-orientation does
      not need to be stipulated but falls out from the feature valuation dependency between an
      argument and *v*, which in turn is in an Agree relation with the subject. Furthermore, the
      current account allows us to abandon the ill-defined notion of the EPP assumed in Saito
      (2009) and Takano (2011). In these works, mostly to account for binding, it is postulated
      that 'subject' is defined as the argument that first merges with *v*—the argument that
      satisfies the EPP. Merging *v* with an NP that is scrambled, on the other hand, does not
      create a subject configuration since scrambling is stipulated to not check the EPP. In the

Note finally that this account has no effect on the binding properties of the German examples in (6) (and similar examples in Japanese; see Shimamura and Wurmbrand 2014). In (6b), the embedded v ends up with the φ-features corresponding to the implicit agent of the passive matrix v. However, these features are not sufficient to license an anaphor—implicit passive arguments cannot bind anaphors—thus, a simple Agree relation between v and the anaphor is not sufficient to establish binding. For an anaphor to be licensed it needs to (also) be in a (direct or indirect) relation with an actual antecedent NP. No such NP is available in LOM constructions as in (6), but in the Japanese causative construction, there is: the dative NP which Agrees with the embedded v.

5 Summary

The following table summarizes the properties found in restructuring constructions cross-linguistically and discussed in this article.

Property	V-V	VP only	v incorporation	Explanation
RC involves no (PRO) subject	✓	✓	✓	restructuring v is underspecified; cannot select AGENT
Interpretation of embedded subject	✓	?	✓	matrix & embedded φ-features are co-valued/identical
Subject agreement in RC in Chamorro	?	?	✓	φ-features of embedded v are valued by the matrix subject
RC can involve verbs showing v conditioned stem allomorphy	?	?	✓	v is present in RC
RC involves voice marking in Austronesian languages	?	?	✓	v is present in RC
Voice matching vs. default voice	?	?	✓	RC is spell-out domain; copy choice for incorporated v
RC constitutes separate event	?	✓	✓	argument structures not merged—embedded vP is a separate event

account here, neither such EPP stipulations nor the notion of 'first merged' is necessary: the subject is the element that values the φ-features of v, which is reflected in the argument structure of the construction.

(cont.)

Property	V-V	VP only	v incorporation	Explanation
RC shows independent transitivity marking in Chamorro	?	?	✓	matrix and embedded argument structures are separate
Embedded VP is mobile	?	✓	✓	no v-incorporation, only v incorporation
Anti-reconstruction effect	✓	✓/?	✓	embedded vP is non-propositional
Subject-oriented binding in RC	?	?	✓	matrix binder qualifies as embedded subject

The comparison of the three complex predicate approaches considered (complex head, bare VP complementation, v incorporation) shows that the approach advocated in this paper covers all the phenomena whereas the previous analyses face several challenges.

6   Conclusion

In this article, I proposed a new approach to restructuring which unites complex head approaches with a bare VP complementation approach. With the former, I argued for an incorporation approach. However, in contrast to other complex head approaches, I proposed that only the v head of a restructuring complement undergoes incorporation. With the VP complementation approach, I assumed that a RC contains a syntactically and semantically independent VP. In contrast to the bare VP complementation approach, however, I proposed that restructuring complements also involve a v head. This hybrid account has the advantage that it provides argument structure sharing for only the subject of a restructuring complement (only the vP), whereas the remaining argument structure properties (the embedded big VP properties) remain separate. I have shown that this result is empirically correct and supported by several phenomena from a diverse set of languages. The account proposed achieves a larger empirical coverage than previous accounts and improves in several respects on the theoretical details of the analyses.

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