

# Prelexical syntax and the Voice hypothesis

*All the world is queer save me and thee,  
and even thou art a little queer.*  
(attributed to Robert Owen 1828)

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This paper relates to two articles by Arnim von Stechow, whom I have always admired for his semantic expertise but with whom at the same time I have always quarrelled in questions on the overall architecture of grammar. I first present an argument showing that morphology restricts adverbial scope differently from syntax. I will then provide a couple of arguments playing with the Voice hypothesis, which claims that *only Voice makes an Agent* (which, after all, is a wonderful metaphor). More specifically, I accept (with one important exception) Arnim von Stechow's highly sophisticated semantic decompositions, but I take issue with his view that the internal structure of words is part of syntax. Moreover, from a cross-linguistic point of view I will come to the conclusion that morphological voice and the introduction of Agent are largely independent of one another.

## 1. Introduction<sup>1</sup>

The advocates of Generative Semantics proposed that words are constituted by syntactic trees made up of VPs (or Ss at that time) and NPs, where the terminal symbols encode partial predicates such as DO, CAUSE, BECOME, and CLOSED, which together determine a verb such as *close*. By successive predicate raising (which is now known as 'head movement'), these predicates are adjoined to each other under one single V node and are then spelled out by an appropriate phonological matrix. This proposal aimed at a specification of interlinguistic differences as to what lexical items are possible. One major motivation was the fact that adverbs often only modify a constituent that is part of a word, as in the following examples taken from McCawley (1971/1973:348).

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<sup>1</sup> I am grateful to Ingrid Kaufmann, Albert Ortmann, and Barbara Stiebels for various comments, especially to Ingrid Kaufmann for the permission to include some of her results on the middle. I also thank Anja Latrouite and Yi-chun Yang for providing me with Tagalog and Chinese examples, as well as the two anonymous reviewers for their helpful remarks.

- (1) a. The door opened, and then I closed it again.  
 b. \*The door opened, and then I kicked it again.
- (2) a. I closed the door temporarily.  
 b. \*I kissed Susan temporarily.

The idea that lexical items should be decomposed into smaller predicates standing in structural relations to each other (rather than listed) has made its way into several approaches to the lexicon, although these decompositions are mostly conceived of as semantic and not syntactic characterizations of words (see Dowty 1979, Bierwisch 1983, Jackendoff 1990, Wunderlich 1997, among others). However, the original proposal has also survived, for instance, in the work of Hale & Keyser (1994), and especially in the work of Arnim von Stechow (henceforth: **AvS**), even though the conception of underlying syntax has changed dramatically since the times of Generative Semantics. AvS (1996) assumes that the Logical Form (LF) of a verb consists of a VP, which is optionally embedded into a Voice Phrase adding an agent or holder (in this respect following Kratzer 1994),<sup>2</sup> which itself is part of higher functional projections such as AspP, AgrOP, and TP (relating to aspect, object agreement, and tense).

Being myself a follower of the lexical decomposition hypothesis coached in a semantic framework, I find many results of AvS's investigations conclusive, but, at the same time, I am astonished at an account in which LF configurations within a word are expressed by syntactic phrases. I am deeply convinced that predicates within a word are clumped together in a different fashion than predicates within a clause, in other words, that morphology and syntax are two independent domains of surface structure. The fact that *close* is a verb which is semantically structured even without possible segmentation into visible morphemes in my view is a morphological rather than a syntactic idiosyncrasy. If a verb with the meaning of *close* can be transparently decomposed into more than one morpheme, I take this as a morphological fact that changes nothing in its status as a verb. If, however, a sentence containing *close* can be paraphrased by means of words meaning 'cause', 'become' and 'closed', I would take this as a syntactic fact of quite a different nature. Words can undergo movement in a sentence, can show agreement with other words, and can have optional scope over argument expressions, whereas morphemes normally cannot be moved in a word, cannot agree with other parts of the word, and cannot have scope over anything else than argument variables. From a formal point of view, *close* is indivisible in both morphology and syntax. My suggestion is that divisibility in the morphology would lead to no effects in the use of this word, whereas divisibility in the syntax would lead to major

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2 It is interesting to note that agentivity of a verb has been represented by means of the predicate DO by the generative semanticists (Ross 1972). Dowty (1979:113) suggests "that both stative and active verbs are constructed from the same homogeneous class of primitive stative predicates, thus the presence of DO is the only thing that distinguishes the meaning of a stative from that of an active verb". In this respect, even the Voice hypothesis is based on an old concept, but it also allows for stative verbs to be represented by a value of Voice (namely, Holder).

effects.<sup>3</sup>

In this paper, I will briefly discuss two of AvS's central assumptions. First, I consider directional phrases that are inside or outside of the lexical meaning of a verb; both are visible for *again*, but only the internal variant is visible for *re-*, the bound variant of *again*. Second, I will discuss various types of voice, some of which hardly go together with the Voice hypothesis. I combine these two topics because it is precisely them that form the explanative framework in AvS's work on adverbial readings. My aim is to raise questions rather than to offer solutions. Throughout the paper, I will use abbreviated semantic representations; although both AvS and myself use situation (or event) variables in the representation of verbs, I mostly neglect them in order to concentrate on the major points.

## 2. Morphology and syntax differ in scope.

### 2.1 The structural context for adverbial ambiguities

In their paper on *fast* 'almost' and the visibility parameter of adverbs (1999:31,32), Irene Rapp & Arnim von Stechow illustrate that verbs of motion may take a directional phrase either syntactically, as in (3), or lexically, as in (4):

- (3) a. Sie rannte zum Haus.  
'She ran to the house'  
b. Sie stieg auf den Hügel.  
'She climbed onto the hill'
- (4) Sie bestieg den Hügel.  
'She climbed the hill'

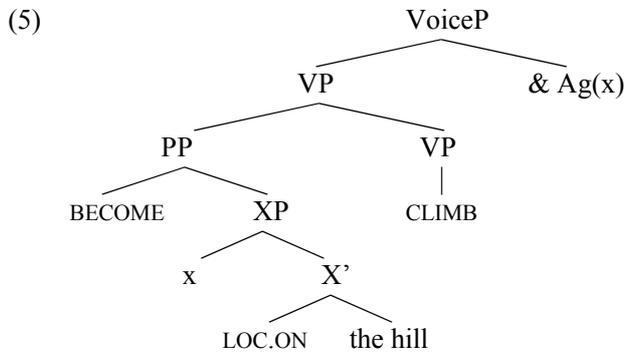
According to Rapp & AvS, there is no difference in representation. Both (3b) and (4) are represented by the same structure, rendered in (5).

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3 If *close* is decomposed in syntax, I cannot see what prevents us from paraphrasing (i) by (ii):

- (i) John closed the door again.  
(ii) John did something which made the door to become closed again.

We are then confronted with the problem that (ii) is logically weaker than (i): (ii), but not (i), can be true in a situation where John removes a chair and then, after a while, the door gets shut by a sudden blast of wind. While *close* refers to a single coherent situation, the paraphrase may be about two situations. This difference could be implemented in a syntactic framework only if it is marked already whether the predicates are morphologically merged or not, for instance, by the absence or presence of an operator that binds a situation variable.



From a representation such as (5), one cannot see whether the PP is syntactically added, as in (3), or lexically integrated, as in (4). If an adverb such as *wieder* ‘again’ is added syntactically, no difference arises; both sentences in (6) allow a restitutive or repetitive reading: either she was first on the hill, climbed down and then returned to the hill (restitutive), or she climbed on the hill a second time (repetitive). The latter reading correlates with stress on the adverb.

- (6) a. Sie stieg wieder auf den Hügel.  
 she climbed again on the hill  
 b. Sie bestieg wieder den Hügel.  
 she climbed again the hill

However, as we will see in section 2.3, these two variants of the verb behave differently with respect to bound adverbs such as *re-* in English.

AvS (1996), as well as Rapp & AvS (1999), explain the two readings of *wieder* ‘again’ by the assumption that *wieder* either adjoins to the XP, which gives the restitutive reading (‘be again in that state’), or to the VoiceP (or even higher in the tree), which gives the repetitive reading (‘perform the same action’). Precisely this possibility to explain the semantic ambiguity in terms of structure was the driving force behind AvS’s approach.<sup>4</sup>

## 2.2 Sortal conditions for adverbial ambiguities

Given the structure in (5), one would expect even four readings to be possible, as can be seen from the abbreviated representation in (7):

- (7) **wieder** [Ag(x) & **wieder** [CLIMBING(e) & **wieder** [BEC **wieder** [LOC.ON(x,y)]]]]

If *wieder* is adjoined to the VP, no interpretation is available because the repetition of a

4 AvS’s approach is attacked by Jäger & Blutner (1999); these authors assume that *wieder* ‘again’ is lexically ambiguous with respect to the presupposition that is made. As AvS (2000) points out, the account by Jäger & Blutner is not unproblematic either.

climbing event with no Agent is impossible – this fact makes it doubtful whether the separation of Voice from the VP is reasonable (see also section 3). If, however, *wieder* adjoins to the PP, a reading saying that a pure transition event is repeated should be possible, although it is hard to grasp. Let us assume that the constituent to which *wieder* adjoins must meet the sortal requirements of the adverb, otherwise the reading is ruled out semantically; *wieder* seems to be compatible with any kind of state or event, but it is not implausible that pure transitions are excluded. Other adverbs have different sortal conditions: *kurz* ‘shortly’ restricts a state or an atelic process/activity, hence (8a) has only one reading, which is the most internal one (**kurz** [LOC.ON(x,y)]), whereas *fast* ‘almost’ presupposes a scale which can be realized by different kinds of entities. In (8b), the scale is contributed by stages of becoming, and the most internal reading obtains (**fast** [LOC.ON(x,y)]). By contrast, in the counterfactual sentence (8c) the subjunctive contributes another scale (e.g., circumstances under which she would or would not climb the hill): here, the most external reading (which is still in the scope of the subjunctive) is preferred, but the internal reading is possible, too.

- (8) a. Sie stieg kurz auf den Hügel.  
       ‘She climbed for a short time on the hill’  
 b. Sie stieg fast auf den Hügel.  
       ‘She climbed almost on the hill’  
 c. Sie wäre fast auf den Hügel gestiegen.  
       ‘She almost climbed on the hill’

AvS is well aware of the semantic conditions originating from the meaning of adverbs. If there were only these readings that ‘look into’ a lexical item, he probably would not have carried out his huge work specifying the structural prerequisites for interpretation. Rather, he was also convinced that these different readings have positional effects in the sentential surface. I am, however, sceptical in this respect because intonational patterns are possible that do not correlate with a different linear order of syntactic constituents (see footnote 6 below). Positional effects of semantic factors should, in principle, be visible in other languages, too, but very little is known in this respect from a cross-linguistic perspective. Given the flexibility of semantic coercion in other fields (Pustejovsky 1995: 115ff.), one could as well claim that nothing follows from the study of adverb-verb readings for the internal syntactic structure of lexical items. Note that it is the semantic type of *begin*, *want* or *believe* (together with additional *qualia* considerations for the respective objects) that forces us to complete the sentences in (9) stereotypically. One does not need to assume a syntactic ellipsis.

- (9) a. She began a book.           [‘She began reading/writing a book’]  
       b. She wanted a beer.       [‘She wanted to drink a beer’]  
       c. She believed the author. [‘She believed what the author wrote’]

**begin** is a function that requires an event of some sort rather than a physical object; the reading of (9a) adapts to this condition by type coercion; similar things hold for (9b,c). One could similarly argue that **fast** is a function that requires a scale of some sort, and

the readings of (8b,c) adapt to this condition. Thus, the interpretations of the sentences in (8) could be constructed on the basis of semantic knowledge, without any regard to an internal syntax of the verb. Of course, one knows that the semantic representation of *besteigen* ‘climb’ involves some complexity in terms of semantic types. I assume that this semantic complexity is relevant for the way in which the arguments are realized by agreement and case,<sup>5</sup> but not necessarily for their position in the clause (Wunderlich 1997). Arguments are obligatory complements of the verb, whereas adjuncts are optional. If the position of adverbs refers to the internal structure of verbs, than the way in which the arguments are realized should do as well. In this respect, AvS’s work is more ambitious than mine. However, in his work the realization of arguments does not seem to depend on the internal syntax of verbs.

### 2.3 Morphological and syntactic adjuncts have different scope.

While a syntactic adverb can have access to the whole clause (although this is restricted by position or stress), a bound morpheme can only have access to the stem to which it attaches. Although the syntactic adverb *again* and the prefix *re-* have the same meaning, one expects that the latter interacts with the verb’s meaning more restrictively. This is indeed the case. As shown by Wechsler (1989), the English equivalents of the sentences given in (6) above lead to different grammaticality judgments if *again* is replaced by *re-*:

- (10) a. \*She re climbed on the hill.  
       \*She reran to the station.  
       b. She re climbed the hill.  
       She re entered the station.

A syntactic PP cannot be in the scope of *re-*, whereas a lexical ‘PP’ can, a fact that is not captured by the tree structure (5). If one assumes that *re-* is restricted to result verbs, and furthermore assumes the lexical representations in (11), it is clear that the a-variant of *climb* must reject *re-* prefixation, even though it is subcategorized for a directional PP to appear in syntax, whereas the b-variant of *climb* admits *re-* because it is characterized as a result verb lexically. As indicated in (12), word-internal *re-* (**again**)

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5 The fact that in examples such as the following the substance being drunk cannot be expressed in syntax (at least not by an argument expression with morphological case) can be explained by the Restriction on Structural Arguments (RSA), which is defined for a lexical SF representation in Wunderlich (1997a,b). It is unclear how syntax can explain this ‘loss’ of internal arguments.

- (i) Er trank den Kühlschrank (\*von Wein) leer.  
       ‘He drank the fridge empty’ (of wine)  
       y is nonstructural in {DRINK(x,y) & BECOME EMPTY(z)} according to RSA.  
 (ii) Er trank sich den Frust ( ? mit Bier) weg.  
       he drank himself the frustration (with beer) away  
 (iii) Er betrank seinen Sieg (mit Champagner).  
       he be-drank his victory (with champagne)

allows either wide or narrow scope.

- (11) a. *steigen/climb*:  $\lambda P \lambda x \{\text{CLIMB}(x) \ \& \ P(x)\}$   
           +dir  
       b. *besteigen/climb*:  $\lambda y \lambda x \{\text{CLIMB}(x) \ \& \ \text{BECOME LOC.ON}(x,y)\}$
- (12) *reclimb*:  $\lambda y \lambda x \text{ again} \{\text{CLIMB}(x) \ \& \ \text{BECOME again} [\text{LOC.ON}(x,y)]\}$

In either case, *re-* must be in the scope of any operator that binds the variable *y* relating to the direct object. This is not necessarily the case with syntactic adverbs. Compare the following sentences:

- (13) a. Arnim again climbed a hill.  
       b. Arnim reclimbed a hill.

(13a) can have the reading that at the second event Arnim climbed another hill than at the first event, which is shown in (14a), whereas (13b) cannot have this reading; in this case there is only one hill which is climbed twice (or climbed down and up), although not necessarily by Arnim, see (14b). That is, the existential operator associated with *a hill* cannot be in the scope of *re-* in (13b). One therefore has to conclude that the syntactic adverb interacts with the internal structure of *climb* differently from the prefix *-* another aspect which is not expressed by the tree in (5).<sup>6</sup>

- (14) a. **again** [ $\exists y (\text{HILL}(y) \ \& \ \text{CLIMB}(\text{arnim},y))$ ]  
       b.  $\lambda x \exists y (\text{HILL}(y) \ \& \ \text{again} [\text{CLIMB}(x,y)])$  (arnim)

That a PP can be in the scope of *again* but not in the scope of *re-* was demonstrated by Wechsler with the following pair of examples:

- (15) a. John reswam the English Channel with flippers. (this time with flippers)  
       b. John swam the English Channel with flippers again. (both times with flippers)

If *again* in (15b) is moved right in front of the verb, it is still possible to get the reading that John swam the English Channel both times with flippers, whereas exactly this reading is excluded in (15a). Wechsler also contributed evidence that the bound affixes in Greek and Chichewa behave exactly like English *re-*. Consider his examples from Chichewa (Wechsler 1989:429):

- (16) a. Mu-lembe=nso chimangirizo [ndi nthenga]<sub>pp</sub>.  
           you-write=again essay with feather  
           ‘You write the essay again, with a quill (this time)’

6 Note that (13b) allows for both a repetitive and a restitutive reading, with the presupposition that it was this particular hill that was occupied before. Thus, the scope paradox observed by Jäger & Blutner (1999) cannot arise. (In contrast to *A Delaware settled in New Jersey again*, which is Jäger & Blutner’s counterexample to AvS’s theory, the sentence *A Delaware resettled in New Jersey* cannot mean that the Delaware tribe originally comes from New Jersey and some recent member of the tribe moved to the home of his ancestors.) Nevertheless, *re-* would have to be lexically ambiguous in the same way as *again* in Jäger & Blutner’s account.





### 3. Voice and the introduction of Agent

In this section, I discuss to what extent the various appearances of voice interact with the introduction of Agent (or other thematic argument roles). In the first two subsections I consider problems that immediately arise from AvS's work, and in the further subsections I bring additional voices to ear from a cross-linguistic perspective. Since many voices do not automatically form a chorus, one hopes that something like the Voice hypothesis can harmonize the noise coming about.

#### 3.1 Lexical selection by Voice

AvS states (1996:108):

- (20) a. Unaccusative verbs do not project Voice (they are voiceless).  
 b. Unaccusative verbs have the semantic structure BECOME + stative.

This does not exclude that unaccusative verbs can add Voice. More precisely, there are three classes of verbs that have to be distinguished.

- (21) a. (Ag(x) &) BEC P(y) *schmelzen* 'melt' P=LIQUID, *brechen* 'break' P=BROKEN  
 b. Ag(x) & BEC P(y) *schließen* 'close' P=CLOSED, *fällen* 'fell' P=DOWN  
 c. BEC P(y) *ankommen* 'arrive' P=LOC.HERE, *fallen* 'fall' P=DOWN

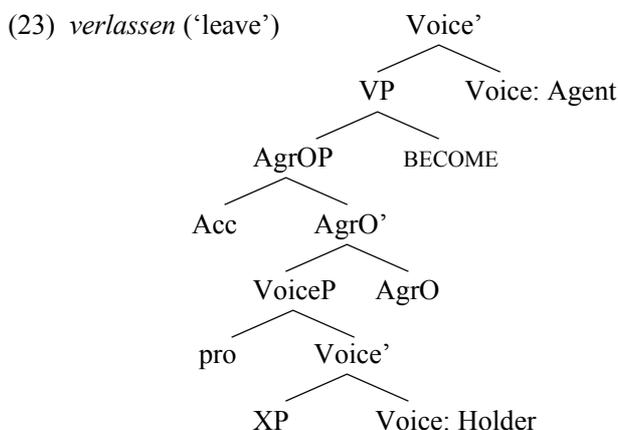
(21a) is the class of alternation verbs, which optionally allow for Voice, (21b) is the class of inherently causative verbs, which require Voice, and (21c) is the class of proper unaccusative verbs, which forbid Voice. If Voice is part of the lexical entry of verbs, it would be easy to make the distinction between (21a,b,c); but then Voice would be superfluous. If Voice is a functional category that selects lexical items, one needs to know in advance whether the item to be selected permits Ag(x) or not. In other words, the lexicon already makes the distinction whether Voice is possible or not; it would do so most effectively if Ag(x) already is part of the lexical entry.

### 3.2 Iteration of Voice

Considering result verbs such as *verlassen* ‘leave’, AvS (1996: 109-112) observes that the ambiguity between restitutive and repetitive readings of *wieder* ‘again’ is preserved if the adverb precedes the accusative object, in contrast to result verbs such as *öffnen* ‘open’, where, according to AvS’s judgments, only the repetitive reading obtains:<sup>7</sup>

- (22) a. Als Anna wieder das Haus verließ, war es dunkel. (restitutive/repetitive)  
 when Anna again the house left, it was dark  
 b. Als Anna wieder die Tür öffnete, war es dunkel. (only repetitive)  
 when Anna again the door opened, it was dark

Verbs such as *öffnen* ‘open’ are called ‘object result verbs’ because only the object participates in the result state, whereas verbs such as *verlassen* ‘leave’ are called ‘subject-object result verbs’ (in Rapp and AvS 1999:180) because both subject and object participate in the result state. To account for this difference, AvS assumes that AgrOP dominates the BECOME-VP in the object result verbs, whereas AgrOP is dominated by the BECOME-VP in the subject-object result verbs. This allows a restitutive reading, even if *wieder* precedes the accusative NP. Moreover, AvS assumes two subsequent Voices for the latter class of verbs, an inner Voice (=Holder(pro)), stating that the subject participates in the result state as a holder, and an outer Voice (=Ag(x)), stating that the subject behaves as an agent. This is shown in (23) (AvS 1996:111):



The semantic representation is given in (24a), which can, however, be abbreviated as in (24b), if one allows more than one occurrence of the subject argument variable:

<sup>7</sup> According to my informants, the restitutive reading is merely the preferred one in (22a), while the repetitive reading is preferred in (22b), which may, but need not, have a structural explanation. All of my informants judge a restitutive reading of (22b) to be possible, too, at least if the verb bears a LH accent, just as (22a) does per default; this is even clearer with *wieder die Tür ZUmachte* ‘again the door closed’. If these intonational judgments can be more generally confirmed, the positional effects of *wieder* might be seen in a different light.



- (26) a. k=u                      kan -ik                      ‘he is learning it’  
 INCOMPL=3.ERG learn -IMPF  
 ACTIVE:  $\lambda y \lambda x \{Ag(x) \& BEC KNOW(y)\}$
- b. k=u                      ká?an -al                      ‘it is being learned’  
 INCOMPL=3.ERG learn.PASS -IMPF  
 PASS:  $\lambda y \{Ag(pro) \& BEC KNOW(y)\}$
- c. k=u                      ká?an -s -ik                      ‘he is teaching it’  
 INCOMPL=3.ERG learn.PASS -CAUS -IMPF  
 PASS-CAUS:  $\lambda y \lambda u \{Ag(u) \& Ag(pro) \& BEC KNOW(y)\}$
- d. k=u                      ká?an -s -á?al                      ‘it is being taught’  
 INCOMPL=3.ERG learn.PASS -CAUS -PASS.IMPF  
 PASS-CAUS-PASS:  $\lambda y \{Ag(pro_2) \& Ag(pro_1) \& BEC KNOW(y)\}$

If Passive follows Causative (see (26d)), together they introduce only one instance of *Ag(pro)*. Since there is no indication that CAUS-PASS is fused into one morpheme, here Passive must set an agent that already is present to *pro*. How can this be ensured?

### 3.4 Passive and Antipassive

The ingenious part of the Voice hypothesis is that Passive does not only demote an agent (by setting it to *pro*), but demotes what it introduces; this correctly predicts that Passive only applies to agentive verbs. Many languages also exhibit an operation which is termed Antipassive: it demotes the lowest or the affected object in the context of an agent. As it stands, the Voice hypothesis would have to claim that first an invisible Active operates, and then Antipassive, as in (27a). This combination would yield a representation such as that in (27b):

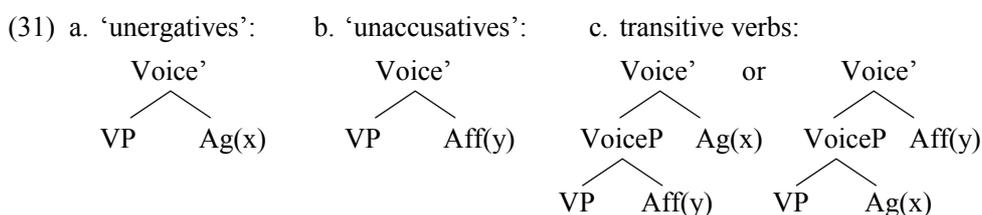
- (27) a. Antipassive:    Voice  
                               Aff(*pro*<sub>case</sub>)
- b.  $\{[Ag(x) \& VERB(e)] \& Aff(pro)\}$

One problem is to determine which case is absorbed by Antipassive. Since most languages with a morphological Antipassive exhibit ergative structure, one could establish the following rule: Passive absorbs accusative, whereas Antipassive absorbs ergative. (This is equivalent to saying that Passive and Antipassive are alternative operations for intransitivizing transitive verbs.)

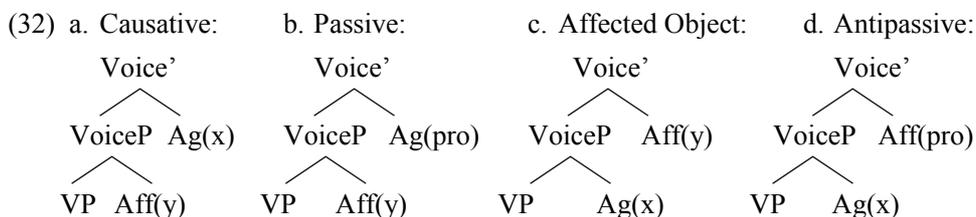
Yucatec Maya is a language that exhibits both Passive and Antipassive, but has only one marked case, which, according to Krämer & Wunderlich (1999), is the ergative. One might think that both operations absorb ergative, which, however, is not quite true. Yucatec has a split-aspect system in intransitive verbs: imperfect correlates with ergative, and perfect with nominative, regardless of whether these aspects are inherent or marked. Passive yields inherently perfective verbs (and it is only in this sense that it



Causative, and ‘unergatives’ may undergo Affected Object)<sup>9</sup>, and it can undergo Passive or Antipassive only if it is transitive. Following the Voice hypothesis, all Yucatec verbs would have to be zero-valent underlyingly, but with a different potential to undergo the above-mentioned operations: Some verbs are lexically intransitive, and others are lexically transitive. In order to distinguish between lexical and morphologically derived meaning, some of these operations have to operate in the lexicon (without any morphological reflection), and some in the morphological-syntactic part of the language. The three major classes of lexical verbs, then, have the structures shown in (31).<sup>10</sup>



Passive only demotes an agent in the context of an affected object, and Antipassive only demotes an affected object in the context of an agent. It is irrelevant whether the required argument is introduced lexically (by an invisible operation) or morphologically (by a visible operation). The Voice hypothesis, as it stands, is confronted with the problem of generating the required number of arguments to be present: all demoting voice operations must be preceded by a complementary argument-adding voice operation, and vice versa.<sup>11</sup>



9 Here I disregard the positionals, which have a special morphology; see Krämer & Wunderlich (1999: 449ff).

10 Since *hek?* ‘break’ can undergo Passive and Antipassive (see (28)), it may have started off from either (31a) or (31b), and results in one of the structures in (31c).

11 Jelinek (1998), in her analysis of the Uto-Aztecan language Yaqui, assumes that Voice only introduces the highest argument, while another functional category, namely Tran (below of Voice), introduces internal arguments; the underlying verb is considered to be zero-valent, and Tran can be iterative. If a transitive verb is causativized, there are two occurrences of Tran (where the second, the higher Tran, introduces the original Agent), followed by the causativizing Voice. The same structure arises with the applicative introducing a Beneficiary argument; here, however, the Beneficiary is introduced by the second Tran, and the original Agent is introduced by Voice. In this account it is stipulated whether the particular morphology on the verb is associated with Voice or with Trans. Yaqui is a language that has Passive but lacks Antipassive; therefore the problem of demoting an internal argument does not arise.

The actual situation is even more intricate. As already shown, both Causative and Affected Object can be followed by Passive, where an agent is already present. Moreover, Antipassive alternates with noun incorporation, which can be followed by Affected Object, as shown in (33) (Krämer & Wunderlich 1999:467).

- (33) taan=u                      kon -lol    -t    -ik    -etʃ  
 INCOMPL=3.ERG    sell -flower -AO -IMPF    -2.NOM  
 ‘He’s selling you flowers.’ (lit. ‘he’s flower-selling you’)

These facts suggest that the voice system is not fully symmetric: Affected objects behave differently from agents; it is generally assumed that a noun can be incorporated only as the lowest argument of the verb (Stiebels 1998). It is therefore doubtful whether a structure in which an affected object c-commands an agent is possible at all. Let us assume that the only legitimate structure is that in (34), and the operations either add or demote one of the arguments.

- (34)
- ```

      Voice'
     /    \
  Ag(x)  VoiceP
         /  \
        VP  Aff(y)
  
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It is questionable whether such a structure is compatible with the Voice hypothesis because now not all of the operations considered so far are licensed in the syntax. In any case, (34) is compatible with the semantic representations given earlier (26-30).

Yucatec also exhibits a third voice, the Middle, marked by vowel lengthening combined with high tone, as illustrated in (35) (Bricker & Yah 1981:xi).

- (35) k=u                      h́eekʔ    -el  
 INCOMPL=3.ERG    break.MID -IMPF  
 ‘it is breaking?': λy BEC BROKEN(y)

The Middle results in an unaccusative verb. However, contrary to what is predicted by the Voice hypothesis, *h́eekʔ* is not a voiceless instance of the verb *hekʔ* (see (28)), rather it is morphologically marked. How can the application of Middle yield something that looks like the underlying representation for both Active and Passive? I will return to this problem in section 3.6.

### 3.5 Tagalog Voice

Tagalog exhibits several voice operations on the verb, each reflecting the role of the nominative argument: Active Voice (AV), Objective Voice (OV), Dative/Locative Voice (DV), Instrumental Voice (IV), and Benefactive Voice (BV). This voice system is illustrated in the following examples, taken from Foley & Van Valin (1984:135). (Note that some prefixes of the verb surface as infixes.)

- (36) a. B-um-ili            ang=lalake   ng=isda   sa=tindahan.  
           PERF.AV-buy    NOM=man    GEN=fish    DAT=store  
           ‘The man bought fish at the store’
- b. B-in-ili            ng=lalake    ang=isda    sa=tindahan.  
           PERF.OV-buy    GEN=man    NOM=fish    DAT=store  
           ‘The man bought the fish at the store’
- c. B-in-ilh-an        ng=lalake    ng=isda    ang=tindahan.  
           PERF-buy-DV    GEN=man    GEN=fish    NOM=store  
           ‘The man bought fish at the store’
- d. Ip-in-am-bili      ng=lalake    ng=isda    ang=pera.  
           IV-PERF-buy    GEN=man    GEN=fish    NOM=money  
           ‘The man bought fish with the money’
- c. I-b-in-ili         ng=lalake    ng=isda    ang=bata.  
           BV-PERF-buy    GEN=man    GEN=fish    NOM=child  
           ‘The man bought fish for the child’

IV and BV may be thought of as operations that introduce an instrument or a beneficiary, respectively (see (36d,e)), and it is also conceivable that DV introduces a goal (recipient, or location), which is otherwise realized by dative. But there is no evidence that an agent or affected object (=theme) is introduced or demoted by any of the voices. Regardless of the alternation in voice, these core arguments of the verb are realized either by nominative or by the so-called genitive. Although OV is the preferred voice for definite objects (see (36b)) and often less marked morphologically than the other voices, the agent is marked by genitive, which is a structural rather than an oblique case. Therefore, the agent is not pro, and OV cannot be identified with Passive. Moreover, the same set of case markers appear with AV and OV, that is, no case absorption can be observed. These case markers also appear in event nominalizations marked with *pag-* rather than with a voice marker, see (37) from Schachter & Otnes (1972: 163). Thus, the Voice hypothesis does not seem to have much to say about Tagalog.

- (37) Masyadong    mabilis    ang=pag-tugtug    ng=lalake    ng=piyesa.  
       too        fast        NOM=NOML-play    GEN=man    GEN=piece  
       ‘The man’s playing of the piece is too fast’

That genitive must be a structural case in Tagalog has been shown by several tests (Schachter 1976, Kroeger 1993). Consider the most common type of control constructions in Tagalog, where both the controller and the controllee must be Agent. As the data in (38) (taken from Kroeger 1993:39) show, an alternation in the voice category and the case marking in the dependent verb does not affect the control relation; the gap in the dependent clause can be either understood as nominative, as in (38a), or as genitive, as in (38b).

- (38) a. B-in-alak niya=ng mag-bigay ng=pera sa=Nanay.  
 PERF.OV-plan 3sg.GEN=COMP AV-give GEN=money DAT=mother  
 ‘He planned to give money to Mother’
- b. B-in-alak niya=ng i-bigay sa=Nanay ang=pera.  
 PERF.OV-plan 3sg.GEN=COMP IV-give DAT=mother NOM=money  
 ‘He planned to give the money to Mother’

The control relation is also independent of the Voice realization in the matrix verb; the controller can be nominative, as in (39a,b), or genitive, as in (39c,d) (Dell 1981:17).

- (39) a. Um-iwas ako=ng t-um-ingin kay=Lorna  
 PERF.AV-avoid 1sg.NOM=COMP AV-look.at DAT=Lorna
- b. Um-iwas ako=ng tingn-an si=Lorna  
 PERF.AV-avoid 1sg.NOM=COMP look.at-DV NOM=Lorna
- c. In-iwas-an ko=ng t-um-ingin kay=Lorna  
 PERF-avoid-DV 1sg.GEN=COMP AV-look.at DAT=Lorna
- d. In-iwas-an ko=ng tingn-an si=Lorna  
 PERF-avoid-DV 1sg.GEN=COMP look.at-DV NOM=Lorna  
 ‘I avoided looking at Lorna’

The fact that both controller and controllee can be genitive shows that genitive cannot be an oblique case. There is no evidence that the agent in the dependent verb is introduced by a voice operation.

Another set of data illustrates that the Tagalog voice system and the introduction of arguments are independent of each other; consider the following imperatives (from Schachter 1976:506).

- (40) a. Mag-bigay ka sa=kaniya ng-kape.  
 AV-give 2sg.NOM DAT=3sg GEN=coffee  
 ‘Give him some coffee’
- b. Bigy-an mo siya ng-kape.  
 give-DV 2sg.GEN 3sg.NOM GEN=coffee  
 ‘Give him some coffee’
- c. I-bigay mo sa=kaniya ang-kape.  
 IV-give 2sg.GEN DAT=3sg NOM=coffee  
 ‘Give him the coffee’

Although the addressee of an imperative must be an agent for semantic reasons, (40a) is not the preferred choice. Preferably, either the recipient or the theme is selected as nominative (40b,c), while the agent is realized by genitive. DV or IV on the verb neither introduce nor demote the agent, and there is no morphological evidence that AV operates before DV or IV in order to introduce the agent. Therefore, the most natural assumption is that all three voices shown in (40) operate alternatively on the Semantic Form of the given verb.

Tagalog verbs show many idiosyncrasies: for instance, the voice that advances an argument to nominative is often lexicalized; for some reason, the voice that advances the affected object=theme of *bigay* ‘give’ is IV rather than OV. For a principled description of the Tagalog data in (40), let us assume that (42a) represents the verb *bigay* ‘give’. The structural positions of the theta-roles are annotated by the features [+hr] for ‘there is a higher role’, and [+lr] for ‘there is a lower role’ (see Joppen and Wunderlich 1995, Wunderlich 1997). In the usual accusative or ergative systems, accusative is specified by the feature [+hr], ergative by [+lr], and dative by [+hr,+lr], and they can link only to theta-roles with compatible values. Correspondingly, the highest argument (the agent) is [-hr] (so it cannot be realized by accusative or dative), and the lowest argument (the theme) is [-lr] (so it cannot be realized by ergative or dative).

Let us further assume that the Tagalog voice system is neutral with respect to accusative and ergative, but rather uses the feature [+hs] for ‘there is a more salient role’. The most salient argument of a clause ([-hs]) must be definite and functions as the syntactic subject (according to the tests given by Kroeger 1993: it is subject to relativization, raising, and conjunction reduction, and can control a secondary predicate); only this argument can become the referential argument of a nominalization, which is often only indicated by intonational means, see the examples in (41).

- (41) a. mag-sà-sákaw      b. màg-sa-sákaw      c. hugás-an      d. hugas-án  
       AV-fut-farm      AV-fut-farm      wash-DV      wash-DV  
       ‘x will farm’      ‘farmer’      ‘wash at x’      ‘sink<sub>N</sub>’

The voices, then, determine the most salient argument by assigning the feature [-hs] to the designated argument role, and [+hs] to all others. If Tagalog dative is specified as [+hr,+lr] (like in other systems), genitive as [+hs] (‘non-salient for reference’), and nominative is left unspecified,<sup>12</sup> the case distribution shown in (42b-d) arises. This distribution also holds for causativized transitive verbs and is therefore the default pattern for ditransitive verbs. In such a mixed system, dative remains the most specific case responsible for the medial argument (more specific than genitive). Since only one argument can be the most salient one, it is obvious that only one nominative is allowed in a clause. The genitive, by contrast, is compatible with more than one argument.

- (42) a.      λz      λy      λx      {Ag(x) & BEC POSS(z)(y)}  
           +hr      +hr      -hr  
           -lr      +lr      +lr  
       b. AV +hs      +hs      -hs  
           gen      dat      nom  
       c. DV +hs      -hs      +hs  
           gen      nom      gen

12 Latrouite (2000) argues that genitive is the default case, while nominative is marked for [+salient]. However, this proposal is problematic for topic structures: a topicalized argument is always nominative, even if the position it is related to is not; hence, there can be more than one nominative in a sentence based on one verbal clause.

|       |     |     |     |
|-------|-----|-----|-----|
| d. IV | -hs | +hs | +hs |
|       | nom | dat | gen |

Although many details of the Tagalog phenomena are still very little understood, a first inspection of its voice system reveals that it seems to be at odds with the Voice hypothesis; in particular, none of the various voices sets the agent to *pro*.<sup>13</sup> Since we are dealing with a language in which the categorial distinction verb vs. noun is problematic, and Active Voice is not the preferred choice at all, an alternative hypothesis claiming that voice renders an argument the most salient for reference is not implausible. If one implements this idea into a syntactic framework, the Tagalog voices rather function analogously to AgrS in that they assign nominative to the selected argument. However, the selection function itself probably cannot be determined syntactically.

### 3.6 Middle Voice

A further problem for the Voice hypothesis arises from the fact that although the middle presupposes an agent, the latter can never be expressed. It is a well-known fact that the agent even cannot be referred to implicitly in the middle construction, in contrast to the passive. Consider the minimal pair involving purpose clauses in (43).

- (43) a. A fork was broken in order to impress the audience.  
 b. A fork broke (\*in order to impress the audience).

For English, one could simply state that unaccusative *break* forms a lexical pair with the causative verb; the ungrammaticality of the purpose clause in (43b) then follows from the assumption that unaccusatives are voiceless. However, in many languages similar instances are marked morphologically.

- (44) a. German                    Das Fenster öffnet sich.  
                                       the window opens REFL  
 b. Spanish                    La cuerda se rompe.  
                                       the rope REFL splits  
 c. Fula                         Yolnde ma66-ake.  
                                       door    close-MID.COMPL  
 d. Classical Greek        Dú-omai.  
                                       sink-1sg.MID  
                                       ‘I am sinking down’

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13 Sells (1998) argues that the Philippine voices assign a null pronominal to a particular argument. This null pronominal is the real subject. Within the clause, the nominative NP is coindexed with the pronominal subject, and behaves itself as an A-bar-category. In this account, each type of voice sets one particular argument to *pro*, which seems to be in accordance with the Voice hypothesis. However, differently from the Voice hypothesis, the respective argument is designated for its syntactic function rather than demoted from syntactic function.

Apart from this so-called decausative reading, the Middle usually allows for other readings, too, depending on the meaning of the verb. Those readings are illustrated by the following examples from Classical Greek and Fula (adapted from Kaufmann 2000).<sup>14</sup>

- |                                   |         |                                                                     |
|-----------------------------------|---------|---------------------------------------------------------------------|
| (45) a. direct reflexive reading: | ClGreek | Loú-omai.<br>wash-1sg.MID<br>'I wash myself'                        |
| b. indirect reflexive reading:    | ClGreek | Haír-omai móiran.<br>take-1g.MID part<br>'I take a part for myself' |
| c. causative reflexive reading:   | ClGreek | Didásk-omai.<br>teach-1sg.MID<br>'I let myself be taught'           |
| d. modal reading:                 | Fula    | Nde-loot-oto.<br>SBJ.CL9-wash-MID.INCOMPL<br>'It is washable'       |

All these readings require the presence of an agent in the semantics. According to Kaufmann (2000), the common core of all the readings of the Middle is a marked control condition for the event. Both in Active and in Passive voice, the agent is assumed to control the event, that is, it is the only one who is able to instantiate or to finish the event. In the Middle, this default control condition is specified differently so that the agent (the default controller for the event) is excluded. Kaufmann's analysis is in the spirit of the Voice hypothesis insofar as the middle introduces a highest argument, which, however, is not the agent. In the following, I will slightly modify Kaufmann's analysis. Let us assume that the Middle introduces  $\text{Contr}(u)$  (for 'u is the controller'), thereby demoting Agent, with the option for different instantiations for u, all of which are in the complement set of Agent.<sup>15</sup>

- (46) Middle:  $\text{Contr}(u)$  &  $\text{Ag}(\text{pro})$   
 u is identical with one of the internal arguments of the verb,  
 or u is generically bound,  
 or u is empty, that is, bound by  $\neg\exists$ .

The different readings of the middle, then, arise by the different instantiations for u, and by a choice of binding pro (either to u, or existentially).<sup>16</sup> In the following, the

14 All these readings are possible for Spanish *se* and the Fula middle. For some reasons, Classical Greek seems to lack the modal reading, but adds some further readings. Some of the readings in (45) are also possible in German and Russian inherent reflexives, as well as in Icelandic.

15 If one is willing to enlarge the ontology of objects, the second option could assume gen, and the third option could assume  $\emptyset$  as values for u. No other instantiations are in the relevant complement set for the agent: objects that are not participants of the event are irrelevant, and both the existential and the general quantifier would include the agent.

16 The default reading is that pro is bound to u. This is not hard to explain: Even if the agent is

readings illustrated in (44) and (45) are briefly discussed.

(47) a. direct reflexive reading:

$\{\text{Contr}(u) \ \& \ \text{Ag}(\text{pro}) \ \& \ \text{BEC CLEAN}(y)\}$  with  $u=y$ .

The event is controlled by the affected person. (In a washing event the person who undergoes washing may control the event).

By default, pro is identified with u.

$\rightarrow \lambda y \{\text{Contr}(y) \ \& \ \text{Ag}(y) \ \& \ \text{BEC CLEAN}(y)\}$

b. indirect reflexive reading:

$\{\text{Contr}(u) \ \& \ \text{Ag}(\text{pro}) \ \& \ \text{BEC POSS}(z,y)\}$  with  $u=z$ .

The event is controlled by the Recipient/Beneficiary. (In a transfer event the person who profits from the transfer may control the event).

By default, pro is identified with u.

$\rightarrow \lambda y \lambda z \{\text{Contr}(z) \ \& \ \text{Ag}(z) \ \& \ \text{BEC POSS}(z,y)\}$

c. causative reflexive reading:

$\{\text{Contr}(u) \ \& \ \text{Ag}(\text{pro}) \ \& \ \text{BEC KNOW}(z,y)\}$  with  $u=z$ .

The event is controlled by the affected person, the recipient or beneficiary. This can be done by influencing another person, who functions as the agent.

Therefore, in this reading pro is existentially bound.

$\rightarrow \lambda y \lambda z \exists x \{\text{Contr}(u) \ \& \ \text{Ag}(x) \ \& \ \text{BEC KNOW}(z,y)\}$  with  $u=z$ .

d. modal reading:

$\{\text{Contr}(u) \ \& \ \text{Ag}(\text{pro}) \ \& \ \text{BEC EATEN}(y)\}$  with u generically bound.

If the controller of an event is bound generically, the event itself is bound generically, and a modal meaning arises.

By default, pro is identified with u. (pro cannot be existentially bound because then the agent would be the controller, contrary to what the middle requires.)

$\rightarrow \lambda y \text{GEN } u \{\text{Contr}(u) \ \& \ \text{Ag}(u) \ \& \ \text{BEC EATEN}(y)\}$

e. decausative reading:

$\{\text{Contr}(u) \ \& \ \text{Ag}(\text{pro}) \ \& \ \text{BEC CLOSED}(y)\}$  with u bound by  $\neg\exists$ .

By default, pro is identified with u. (pro cannot be existentially bound because then the agent would be the controller, contrary to what the middle requires.)

As a result, it turns out that a part of the semantic representation becomes irrelevant; strictly speaking, however, it is not deleted.

$\rightarrow \lambda y \neg\exists u \{\text{Contr}(u) \ \& \ \text{Ag}(u) \ \& \ \text{BEC CLOSED}(y)\} = \lambda y \{\text{BEC CLOSED}(y)\}$

This treatment of the middle is compatible with the Voice hypothesis if the controller

---

identical with the person who controls the event, it is not the agent who controls the event, but another participant of the event. (A reflexive action may be controlled from the point of view of the acting person or from that of the affected person.) If pro is existentially bound, an agent other than the controller is presumed; nevertheless this agent cannot be expressed in syntax (by an oblique agent phrase), probably because it is no longer the highest argument.

of an event is introduced as a more general notion than simply ‘Agent’. The multiplicity of readings obtains because the controller has to be taken from a set of instantiations next to the agent.

### 3.7 Chinese Cause Voice

Another voice that operates after Agent is established is illustrated by the following examples from Chinese. (Note, though, that there is no morphological indication of this voice.)

- (48) a. *nei-ben shu kan-hua-le Lisi-de yanjing.*  
 that-CL book read-blur-ASP Lisi-POSS eye  
 ‘By reading that book Lisi’s eyes got blurred’  
 lit.: That book read by someone made Lisi’s eyes blurred  
 (by inference: Lisi read the book)
- b. *zhe-ge yao chi-huai-le ta-de-wei.*  
 this-CL medicine eat-get.ruined-ASP he-POSS-stomach  
 ‘By taking this medicine his stomach got ruined’  
 lit.: This medicine eaten by someone ruined his stomach.
- c. *nei-ping jiu he-zui-le Zhangsan.*  
 that-CL wine drink-get.drunk-ASP Zhangsan  
 ‘By drinking this bottle wine Zhangsan got drunk’  
 lit.: That bottle wine drunk by someone made Zhangsan drunk.
- d. *neichang qiu lei-de dajia mei weikou chi-fan.*  
 that ballgame get.tired-DE everyone not appetite eat  
 ‘That ballgame made everyone so tired that they had no appetite to eat’

Chinese allows for resultative constructions (V-V compounds or *de*-constructions) to express as the subject of the construction a participant which is not the agent. In a spirit similar to the Middle just discussed, one can assume, following Kaufmann & Wunderlich (1998), that a Cause can be specified by Cause Voice, thereby setting the agent to *pro*.<sup>17</sup>

- (49) Cause Voice: Cause(*u*) & Ag(*pro*)  
*u* is identical with one of the internal arguments of the verb.

The first three examples of (48), then, can be represented as follows:

- (50) a. {Cause(*u*) & READ(*pro*,*y*) & BECOME BLURRED(*z*)} with *u*=*y*  
 → λ*z* λ*y* ∃*x* {Cause(*y*) & READ(*x*,*y*) & BECOME BLURRED(*z*)}
- b. {Cause(*u*) & EAT(*pro*,*y*) & BECOME RUINED(*z*)} with *u*=*y*  
 → λ*z* λ*y* ∃*x* {Cause(*y*) & EAT(*x*,*y*) & BECOME RUINED(*z*)}

17 For obvious reasons, the default interpretation for *pro* must be existential binding then. However, it is possible to identify *pro* with another internal participant.

- c. {Cause(u) & DRINK(pro,y) & BECOME DRUNK(z)} with u=y & z=pro  
 → λz λy {Cause(y) & DRINK(z,y) & BECOME DRUNK(z)}

That the construction illustrated in (48) is different from Passive is shown by the fact that it can itself be passivized.<sup>18</sup> The Passive of (48a,b) is given by (51a,b); *bei* is a preposition that introduces the demoted subject.

- (51) a. Lisi-de    yanjing bei nei-ben    shu    kan-hua-le.  
 Lisi-POSS eye    BEI that-CL book    read-blur-ASP  
 ‘Lisi’s eyes got blurred by (his) reading that book’  
 b. ta-de-wei            bei zhe-ge    yao            chi-huai-le  
 he-POSS-stomach BEI this-CL medicine eat-get.ruined-ASP  
 ‘His stomach got ruined by (his) taking this medicine’

Since the Cause construction is morphologically unmarked, we would expect it to be restricted, and indeed it is only possible with resultatives. This construction corresponds to the Voice hypothesis insofar as a further thematic role is added to the verb in the highest position. Both the Middle and the Cause construction add an entity (or a more general instantiation function) that puts the agent out of action, but from different perspectives: the former focuses on the control of an event, while the latter focuses on a causal relation which is uncontrolled. It is needless to say that the Chinese Cause construction still has to be investigated in more detail.

*Du hörst den Ruf?*  
*Wir sind am Ziel.*  
 (Richard Wagner)

#### 4. Concluding remarks

Though I am convinced that words can be decomposed, I do not believe that they can be decomposed in the syntax. Several differences between *again* and *re-* show that these adverbial elements operate quite differently: *again* can, but need not, have scope over PPs and all the argument expressions, while *re-* never has scope over PPs, nor strong resultatives, nor any operators associated with the argument expressions. It is questionable whether these differences can be captured within a syntactic representation which is blind against the morphology-syntax distinction.

The Voice hypothesis strengthens the decomposition-in-syntax account by claiming that the functional category Voice interacts with word meaning in that it adds an agent in the syntax (even if it is demoted). This hypothesis correctly predicts that only ‘agentive’ verbs can be passivized. However, during my cross-linguistic expedition I have found many more voices than at first hearing may be thought of. Even if the Voice account were formulated in terms of morphology, it could only be a first attempt, since

<sup>18</sup> However, (48c) cannot be passivized, probably because here the result object (‘z’) is conceptually identified with the agent of the verb.

too many voices come to ear which are unexpected from this scenario. Nevertheless, one aspect of the Voice hypothesis has been confirmed: nearly all of these voices presuppose the existence of an agent. Some voices (such as Antipassive) render internal arguments less salient than the agent, while other voices (such as those in Tagalog) render internal arguments more salient than the agent. Particularly interesting are the Middle and the Chinese Cause voice: they add an argument role which puts the agent out of action but cannot be instantiated independently from the participants of the event. Here again, as in the Passive and the Tagalog voices, an internal argument may become more salient than the agent. It is, however, clear that in order to synchronize the several voices reflected in natural languages much future work has to be done.

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