

## The passive implicit argument and the impersonal pronoun *man* in German

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### 1 Introduction

In this paper, we propose that the external implicit argument in the Passive is to be represented as the empty version of the impersonal pronoun *man* “one (impersonal).” We analyze the passive implicit argument as an empty category in [Spec,VP] and treat the participle morpheme *en* as an aspectual morpheme that interacts with the tense of the auxiliary to locate in time the event expressed by the verb underlying the participle. We propose an account of the syntax of participle constructions in terms of the Minimalist Program (Chomsky 1992) that derives a Passive sentence and its corresponding Perfect-Active sentence from the same participial clause, with the differences following from the choice of the auxiliary.

The paper is organized in the following way. In the second section, we will discuss some of the properties of *man*. It will be argued that the interpretation and the binding properties of the Passive implicit argument can be given a coherent and satisfactory explanation if we analyze it as the empty version of *man*. In the third section, we give a brief survey of the historic development of use and interpretation of the Perfect-Participle in German. In the fourth section, we will discuss the syntax of participle constructions and outline the conditions under which the empty impersonal pronoun is licensed.

### 2 The Interpretation of *man* and *pass*

To show that the Passive implicit argument (henceforth *pass*) is the empty version of *man*, we will demonstrate that *man* and *pass* behave alike in a number of environments. One observation is that *pass* like *man* can have a variety of interpretations which can be grouped into the generic use ((1) and (2)) and the existential use (3) of *man* and *pass*. In (1-3) below, the sentences in b) show the passives of the active sentences in a); their (synonymous) interpretations are given in c). The examples in (1-3) show that the Passive implicit argument can have the same variety of interpretations that *man* exhibits.

- (1) a. Ohne Wasser kann man nur drei Tage überleben  
       *Without water can one only three days survive*  
       b. Ohne Wasser kann nur drei Tage überlebt werden  
       *Without water can only three days survived become*  
       c. “(All) Humans can live without water for only three days”

- (2) a. In Österreich spricht man Deutsch  
*In Austria speaks one German*  
 b. In Österreich wird Deutsch gesprochen  
*In Austria becomes German spoken*  
 c. "(Most) Austrians speak German"  
 (3) a. Man hat die Bank überfallen  
*One has the bank robbed*  
 b. Die Bank wurde überfallen  
*The bank became robbed*  
 c. "Somebody robbed the bank"

Secondly, *pass* and *man* unlike indefinite NPs, but very much like bare plurals (cf. Carlson 1977), persistently fail to interact with negation, quantified NPs and opacity inducing operators. The most important generalizations can be summarized as follows. In their existential use, *man* can *pass* have only narrow scope with respect to negation (cf. 4) and quantified NPs (cf. 5). That is to say that the sentences in (4) can not mean *a certain individual did not rob the bank* and the sentences in (5) can not mean *a certain individual observed all citizens in the GDR*. This is especially remarkable since *man* in (4a) and (5a) c-commands (at S-Structure) the negation and the quantifier, respectively

- (4) a. Man hat die Bank nicht überfallen  
*One has the bank not robbed*  
 b. Die Bank wurde nicht überfallen  
*The bank became not robbed*  
 c. "Nobody robbed the bank"  
 (5) a. In der DDR hat man jeden Bürger observiert  
*In the GDR has one each citizen observed*  
 b. In der DDR wurde jeder Bürger observiert  
*In the GDR became each citizen observed*  
 c. "In the GDR each citizen was observed by someone or other"

In their generic use, *man* and *pass* have wide scope with respect to negation (cf. 6) and quantified NPs (cf. 7)<sup>1</sup>. In (6a) we use a passive sentence so that the pronominal subject *man* goes back to a theta-object that initially was within the scope

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<sup>1</sup> In the examples below, we chose - for the sake of illustration - a universally quantified NP, since the universal quantifier in object position can more easily than other quantifiers take inverse scope over the subject. It is important for our argument to note that a universally quantified NP and an existentially interpreted indefinite NP can always take scope over each other independently of whether they occupy the subject or the object position, respectively.

of the negation. Nevertheless, the sentence cannot mean *not all Germans are appreciated in Austria*. In the same vein, (6b) cannot mean *not all Austrians appreciate the Germans*<sup>2</sup>. The meanings of the sentences in (7) are straightforward. (7a) can only mean that *Casanovas are such that they court every woman*; in particular, it does not allow for a wide scope reading of *every woman*: *every woman is such that Casanovas usually court them*. In other words, although the two possible readings of (7a) are truth-functionally equivalent, we can tell that (7a) has only a wide scope reading of *man* from the fact that (7a) is a statement that characterizes *Casanovas* and can not be taken to characterize *every woman*. Similar judgments obtain for (7b). (7b) means *when one is in the military (ie.: if one is a recruit) one uses every opportunity to desert*. (7b) is a statement that characterizes *recruits* and does not characterize *opportunities to desert*. In any case, we can enhance the contrast between the two possible readings by interpreting the implicit generic subject in, for instance, (7b) with an expression like *most recruits* (*most recruits use every opportunity to desert*). Then the two readings are also truth-functionally distinct and it is clear that (7b) only has the interpretation where *most recruits* has wide scope over *every opportunity*.

- (6) a. Man wird als Deutscher nicht geschätzt in Österreich  
*One becomes as a German not appreciated in Austria*  
 "All Germans are not appreciated in Austria"
- b. Die Deutschen werden in Österreich nicht geschätzt  
*The Germans become in Austria not appreciated*  
 "Austrians do typically not appreciate the Germans"
- (7) a. Als Casanova umwirbt man jede Frau  
*As Casanova courts one every woman*  
 "A typical Casanova courts every woman"
- b. Beim Militär wird jede Gelegenheit genutzt, um zu desertieren  
*In the military becomes every opportunity used in order to desert*

Finally, *man* and *pass* have always narrow scope with respect to opacity inducing operators. In their existential use, *man* and *pass* thus, behave like bare plurals in intensional contexts: they can only have an opaque reading. That is to say

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<sup>2</sup> For the understanding of examples (6) and (7), it is important to note that *man* and *pass* in their generic use, can combine with certain locative PPs and expressions like *als Deutscher* (*as a German*) to yield a joint interpretation that can be rendered by the corresponding bare plurals:

- i) In Österreich spricht man Deutsch  
*In Austria speaks one German*  
Austrians speak German

that the sentences in (8) can not mean that *someone is such that Hans believes of him that he has robbed the bank*. In their generic use, *man* and *pass* however, differ from bare plurals in their behavior in intensional contexts to the extent that generic bare plurals can also have a transparent reading, as (9a) suggests. Let us assume that John believes that Peter, Joe and Jack are altruistic and that these three guys are the firemen in John's village, then a speaker of the same village (among others who know about these facts) can use (9a) to report John's propositional attitude. At first glance it seems that a similar story could be made up for (9b), interpreting the expression *man in diesem Dorf* (one in this village) as the speaker's description. However, since the *de re* interpretation in (9a) rests on the possibility of focussing *firemen* yielding the reading *those in the village of whom John believes that they are altruistic are firemen*, it is clear that *man* in (9b) cannot have a *de re* interpretation: *man* cannot be stressed and focussed. Furthermore, *man*, being a pronoun, cannot function as a predicate which is required for the relevant interpretation in (9b). Thus, in their generic use too, *man* and *pass* can only have an opaque reading in intensional contexts (9bc).

- (8) a. Hans glaubt, dass man die Bank überfallen hat  
*Hans believes that one the bank robbed has*  
 b. Hans glaubt, dass die Bank überfallen wurde  
*Hans believes that the bank robbed became*
- (9) a. John believes that firemen in this village are altruistic  
 b. Hans glaubt dass man (in diesem Dorf) viel musiziert  
*Hans believes that one (in this village) a lot music-makes*  
 c. Hans glaubt dass in diesem Dorf viel musiziert wird  
*Hans believes that in this village a lot music-made becomes*

So far we have seen that *man* behaves essentially like bare plurals in the environments discussed above. Bare plurals and *man* however, differ radically with personal pronouns. The reference of bare plurals can be taken up by personal pronouns that occur in the same sentence (10a) or in a following sentence (10b)<sup>3</sup>. In the examples below underlined DPs are to be interpreted as coreferent.

- (10) a. May hates raccoons because they stole her sweet corn  
 b. Dogs came into the room. They began to tear apart the couch

The reference of *man* however, cannot be taken up by any personal pronoun, be it singular or plural (cf. 11). (12) shows that the reference of *man* cannot easily be taken up by another instance of *man* if they occur in different sentences (12a) and that

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<sup>3</sup> The examples are taken from (Carlson 1977).

we can have a referential dependency between two instances of *man* only if they occur in a binding configuration (cf. 12bc). In (12b) neither instance of *man* c-commands the other and coreference is excluded. In (12c), the first instance of *man* c-commands the second one and coreference is possible. That in (12c), the first occurrence of *man* really *binds* the second one is shown by the fact that this configuration gives rise to sloppy-identity readings in VP-deletion contexts.

- (11) a.?? Man hat die Bank überfallen, weil er/sie Geld brauchte/n  
*One has the bank robbed, because he/they money needed*  
 b.?? Man hat die Bank überfallen. Sie trugen grüne Jacken/er trug eine grüne Jacke  
*One has the bank robbed. They/he wore green jackets a green jacket*
- (12) a.?? Man hat die Bank überfallen. Man hat eine Frau als Geisel genommen  
*One hat the bank robbed. One has a woman as hostage taken*  
 b.?? Die Frau, der man Blumen schenkte, sagte, dass man die richtige Sorte getroffen habe  
*The woman to whom one flowers gave said that one the right sort chosen has*  
 c. Man hat Otto mitgeteilt, dass man ihn besuchen will  
*One has Otto told that one him visit wants*

Summing up, we can say that the reference of *man* (if there is any) can not be taken up by personal pronouns (11) and *man* itself is unable to pick up the reference to an individual that has been established in the previous context (12ab). *Man* can also not be taken to refer to a kind, to the kind of humans, for instance, since *man* cannot occur as the subject of a kind-level predicate as is shown in (13).

- (13) \* Bald darauf war man ausgestorben  
*Soon thereafter was one extinct*

*Man* is like bare plurals. But it differs from them in one important respect. Let us look at the referential dependency between the bare plural and the pronoun in (10a) again. Here the pronoun *they* neither functions as a bound pronoun nor as an E-type pronoun. It seems that a bare plural other than a referential generic bare plural as in *Dinosaurs are extinct* does two things: it introduces a variable and by denoting a set it introduces a domain that provides the range for the unselective quantifier binding its variable. It is this domain that seems to be picked up by the pronoun in (10a). The shared domain is then independently quantified over by the unselective quantifier selected by the verb in the matrix and in the embedded clause. (14) shows that *man* does not introduce such a domain. In (14a), the object pronoun cannot be referentially dependent on *man* (if *man* is replaced by an expression like *Europeans*, the sentence is okay). That the oddness in (14a) is not due to a morphological mismatch between the plural personal pronoun and *man* (after all *man* is marked [3PS,SG,MASC]) is

shown in (14b). Here *man* is modified by the locative PP *in Österreich* that apparently provides the relevant domain and coreference between *man* and *sie* “them” becomes (marginally) possible. So, for a personal pronoun to be able to pick up a domain, this domain must be *explicitly* specified in the previous context. The contrast between (14a) and (14b) hence suggests that *man* cannot be analyzed as introducing a predicate, the predicate *human(x)*, for instance.

- (14) a. \* Man<sub>i</sub> schätzt die Deutschen<sub>i</sub> nicht, weil sie<sub>j</sub> sie<sub>i</sub> in zwei Weltkriege gestürzt haben  
*One appreciates the Germans not because they them in(to) two World Wars thrown have*
- b. ? In Österreich schätzt man<sub>i</sub> die Deutschen<sub>i</sub> nicht, weil sie<sub>j</sub> sie<sub>i</sub> in zwei Weltkriege gestürzt haben  
*In Austria appreciates one the Germans not because they them in(to) two World Wars thrown have*  
 “(In Austria) one does not like the Germans because they pulled them into two World Wars”

To explain the facts in (11)-(14), we propose that *man* and *pass* are analyzed as variables that are to be bound by an unselective quantifier (cf. Heim 1982, Kratzer 1988). The choice of the unselective quantifier is determined by the verb: an episodic verb licenses the operator of existential closure; a generic verb licenses a generic operator. A bare plural introduces a variable and a domain (a set of individuals), *man* (and *pass*), however, only introduces a bare variable and its minimal semantic content ([+human]) just serves as a restriction on the value-assignment to that variable. It is in accordance with its pronominal nature that the range of the variable is determined pragmatically, that is to say that *man* can pick a domain from the context. The scopal properties of *man* and *pass* can then be accounted for by assuming the following strict hierarchy of operators/quantifiers at LF (cf. Beghelli & Stowell 1994).

- (15) Gen > Universal > ... > Neg > Existential Closure

There is one problem with this analysis. We can not explain why the variable introduced by *man* can not bind the personal pronoun *er* “he” in (16a), since *er* “he” can normally function as a bound pronoun and since we can not resort to any morphological mismatch between *man* and *er* “he”, both being [3PS,SG,MASC] pronouns. We have to assume (or stipulate) that the two variables in (16a) are of a different kind. A possible answer is the following: since *man* has to be assigned a domain, we may assume that the variable introduced by it actually ranges over sets of individuals. Once *man* is assigned a set, the unselective operator quantifies over the individuals of that set. The examples in (16bc) provide some evidence for this assumption. In (16c), we observe a typical bound pronoun interpretation: *for most x, x believes that x skies better than anybody else*. This interpretation is excluded in

(16b)<sup>4</sup>. (16b) can only mean that *Austrians hold the collective belief that the average Austrian skies better than anybody else*. The two occurrences of *man* however, share the same domain. Since *man* cannot pick up any reference we may assume that this domain-sharing is due to binding (cf. 16d). In (16d), the first instance of *man* does not c-command the second one and coreference between them is only possible if the domain is assigned again to the second instance by the locative pronominal *dort* "there".

- (16) a.\* Man<sub>i</sub> hat Otto mitgeteilt dass er<sub>i</sub> ihn besuchen will  
*One has Otto told that he him visit wants*
- b. In Österreich glaubt man<sub>i</sub>, dass man<sub>j</sub> besser schifährt als jeder andere  
*In Austria believes one that one better skies than everybody else*
- c. Oft glaubt man dass man besser schifährt als jeder andere  
*Oft believes one that one better skies than everybody else*
- d. Eine Frau<sub>i</sub>, die man<sub>j</sub> in Österreich gut behandelte, glaubt, dass man<sub>k</sub>,  
 \*(dort) sehr freundlich ist  
*A woman<sub>i</sub>, whom one in Austria well treated believes that one (there) kind is*  
 "A woman who one treated well in Austria believes that one is kind (there)"

Whatever the explanation for the fact in (16a) might be, it provides an important argument for our hypothesis that *pass* is the empty version of *man*. The behavior of *man* with respect to personal pronouns corresponds to and explains the pattern in (17). (17) shows that *pass* taken as an empty pronoun in an A-position triggers Principle C-effects (17a), but fails to corefer with pronouns other than *man* (17b-d).

- (17) a.\* Otto wurde pass<sub>i</sub> mitgeteilt, dass Hans<sub>j</sub> ihn besuchen will  
*Otto became pass told that Hans him visit wants*
- b.?? Otto wurde pass<sub>i</sub> mitgeteilt, dass er<sub>j</sub> ihn besuchen will  
*Otto became pass told that he him visit wants*
- c.?? Otto wurde pass<sub>i</sub> mitgeteilt, dass sie<sub>j</sub> ihn besuchen wollen  
*Otto became pass told that they him visit want*
- d. Otto wurde pass<sub>i</sub> mitgeteilt, dass man<sub>j</sub> ihn besuchen will  
*Otto became pass told that one him visit wants*

If we analyze the Passive implicit argument as the empty version of *man* then its interpretation and its binding properties receive a coherent and satisfactory

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<sup>4</sup> For reasons that we do not understand.

explanation (we will later show that the failure of *pass* to bind anaphors, as opposed to *man* follows from its licensing conditions).

### 3 The History of the Perfect-Participle<sup>5</sup>

The German Perfect-Participle morphology goes back to a Proto-germanic aspectual morpheme that has been used productively to form perfective verbs from imperfective ones up to the period of Middle High German (cf. Gothic *ga* = New High German *ge* in (18)).

(18) Goth.: *slepan* (sleep) -> *ga-slepan* (fall asleep)

Later on *ge* was replaced by other particles. Furthermore it has been used (and it is still used) to form the Perfect-Participle. The Perfect-Participle was initially used only attributively, that is, within a DP. Only transitive verbs and intransitive *perfective* verbs could form a Perfect-Participle. According to (Paul 1920) intransitive *imperfective* verbs could originally not form a Perfect-Participle. (Paul 1920) reports that the Perfect-Participle of transitive verbs had a passive interpretation and the Perfect-Participle of perfective intransitive verbs was active. It signified the state that holds of the object after the completion of the event described by the verb underlying the participle. In temporal terms, it expressed simultaneity of the resulting state with the *reference time* (cf. Reichenbach 1947) of the finite verb of the sentence and initially it did not express that the corresponding event has taken place before (although this was implied at least for non-stative verbs), according to (Paul 1920).

Perfective intransitive verbs in Paul's terminology are called *achievements* in the terminology of (Vendler 1967). Imperfective intransitive verbs in Paul's terminology correspond to *activities* and (intransitive) *statives* in Vendler's terminology. An activity describes an event that does not have an inherent endpoint, that is, an event without a final state. Activities simply describe the process that the subject of the verb entertains. Some examples of verbs which typically belong to this aspectual class are *climb, cry, dance, laugh, run, ... , walk*. An achievement describes an event that results in a final state. Achievements describe the process that the object undergoes in reaching the final state. Some examples of verbs which typically belong to this aspectual class are *arrive, die, grow up, ..., mature*. The class of transitive verbs contains *accomplishments* and (transitive) *statives*. Accomplishments describe the process that the subject entertains and the object undergoes to reach the final state of the object.

We analyze the Perfect-Participle morphology as shifting the reference from the event (the process) to the final state that is the *consequence* of the completion of

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<sup>5</sup> In this brief historical survey, I heavily rely on the classic work on German grammar by Hermann Paul (1878, republished in 1920)



the process expressed by the verb. It is not quite clear to us how the Perfect-participles of transitive stative verbs fit with this interpretation of the semantics of the Perfect-Participle morphology. Note, however, that if *A is in the state of loving B at time t* then *the state of B being loved at time t* is a consequence of the former state.

Whereas the consequential state is properly contained within the interval during which the antecedental state holds with stative verbs, the consequential state follows the interval that the antecedental process took to complete with eventive verbs (achievements and accomplishments). This is important for the temporal interpretation of the attributive Perfect-Participle: the loaded gun is the gun that has been loaded, but the loved child is the child that is being loved.

Since the Perfect-participle morphology had the meaning of shifting the reference from the antecedental state or process to the consequential state, it is clear that it could not apply to verbs that express an activity. Furthermore, since the resulting participle denotes the consequential state that holds of the object of the underlying verb<sup>6</sup>, it is clear that the subject of transitive verbs was suppressed, while no such suppression of an argument was required for intransitive perfective verbs, that is, achievements. Thus, the passive interpretation of the Perfect-Participle of transitive verbs followed from the semantics of the Perfect-participle morphology.

After the loss of the Germanic synthetic Perfect-tenses, a previously introduced periphrastic construction that involved an attributive Perfect-Participle was used more and more as a substitute for the old Perfect-tenses. I could not find any description of its syntax (so far) but a sentence like *I have found the book* originally was expressed in the following way (cf. Kayne 1993):

- (19) Ich habe das Buch als ein gefundenes  
*I have the book as a found (one)*

In this construction, the Participle of transitive verbs presumably had still a passive meaning, in the sense of dropping the subject. In Old High German, the participle in this construction was still inflected and showed agreement in Case, Gender and Number with the object. What is important is the fact that initially only transitive and intransitive perfective verbs could form this kind of Perfect-construction; intransitive imperfective verbs were excluded from it. When this construction was later extended to include also intransitive perfective verbs, the meaning of the Perfect-participle morphology must have altered.

We suggest that in order for the Participle to figure in the formation of a complex tense-category, the meaning of the Participle morphology shifted back from the reference to the consequential state to the reference to the *completed* antecedental process with accomplishments and achievements. This interpretation was then

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6 That the consequential state holds of the object of the verbs follows simply from their semantics.

extended to stative transitives and to activities. Appealing to Reichenbach's tense theory, we assume that it was reinterpreted as meaning  $e < r$  (event-time precedes reference-time). This reinterpretation had probably two major effects. First and most importantly, the Perfect-Participle of transitive verbs lost its passive nature, since it was the sole effect of the semantics of the Participle morphology (the intransitive ones never had any passive meaning). Secondly, the possessive verb *haben* "have" was stripped of its semantics, in the sense that one has found a book does not necessarily mean that one (still) has it. So *haben* "have" lost its possessive meaning and its theta-roles to open the way for the modern Perfect-Active construction, the details of which we will discuss below.

Now the question arises whether the Perfect-participle morphology has retained its meaning in the Participial Passive construction like (20). The answer is no. If we want to give a uniform account of the passive construction in modern German, then we have to take into account also intransitive verbs. In modern German, both perfective and imperfective intransitive verbs can form a Passive (cf. (21), imagine a report about a medieval town infested by plague).

- (20) Das Buch wurde gefunden  
*The book became found*
- (21) Hier wird getanzt und gestorben  
*Here becomes danced and died*

If the Participle morphology had retained its original meaning, the Participle of *die* should have an active interpretation and the Participle of *dance* should not be formable at all. Thus, we assume that there is one participle that, based on the aspectual morpheme with the meaning  $e < r$ , gives rise to both Perfect-Active and Participial Passive sentences. There is also the attributive Perfect-Participle<sup>7</sup> that until now has preserved its original interpretation and distribution (no imperfective intransitive verb may form an attributive Perfect-Participle). This shows again that the reinterpretation of the participle in the periphrastic constructions was the sole consequence of the need for an aspectual morpheme that could interact with tense and

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<sup>7</sup>The attributive Perfect-Participle has probably given rise to the so-called *adjectival passive* (cf (i)), the argument being that intransitive verbs, be they perfective (ii) or imperfective (iii,) can still not form an adjectival passive.

- (i) Das Buch ist gefunden  
*The book is found*
- (ii) \* Hier ist gestorben  
*Here is died*
- (iii) \* Hier ist getanzt  
*Here is danced*

apply to all verbs in a uniform way in order to give rise to a new tense-category. We identify the passive meaning of the sentences in (20) and (21) with the possibility of licensing *pass*, the empty version of the impersonal pronoun *man*.

#### 4 The Syntax of Participle Constructions

Recall that in section 2, we argued that sentences like the ones in (22) are semantically equivalent, that is, synonymous. Syntactically, they only differ in two respects. (22b) licenses an empty *man*, as we have argued, while (22a) does not and (22b) requires a past tense marker on its auxiliary to express a past event, while (22a) relies on the “perfective” interpretation of the participle to express the pastness of the event.

- (22) a. Man hat das Buch gefunden  
           *One has the book found*  
       b. Das Buch wurde pass gefunden  
           *The book became pass found*

In what follows we try to relate these two differences to each other, that is to say, that we propose that both sentences are based on the same participial clause and that their differences follow from the *temporal* properties of the different auxiliaries they employ. We assume that main verbs (and potentially also auxiliaries) have an additional temporal argument. Specifically, we assume - in a Larsonian analysis - the following organisation of the arguments of a transitive verb in German (*Temp* stands for the temporal argument of the verb):

- (23) [<sub>VP1</sub> Subject [<sub>V1-bar</sub> [<sub>VP2</sub> Temp [<sub>V2-bar</sub> Object V2 ]] V1 ]]

We assume that participle constructions are bisentential, consisting of an auxiliary and a participial clause. The participial clause, like any finite clause rooted in a transitive verb, contains an ArgS-head, a Tense-head and an AgrO-head. The auxiliary clause contains an AgrS-head and a Tense-head. This follows from the stipulations given below:

- (24) Every clause contains a (functional) tense head  
 (25) “Projection Principle”: The number of Agr-heads a verb projects equals the number of its non-temporal arguments

The participial clause lacks an abstract Tense predicate, instead of which it contains an aspectual morpheme requiring the assignment of a temporal index (the reference-time) with respect to which the aspectual morpheme locates the event-time of the main verb as prior. The empty impersonal pronoun is licensed as the *Specifier of an X<sup>0</sup>-chain* that lacks a temporal index (26).

- (26) A is the Specifier of the  $X^0$ -chain ( $a_1 \dots a_n$ ) if A is either the Specifier of  $a_1$ , or A is the Specifier of  $a_2$ , ..., or A is the Specifier of  $a_n$ .

The difference between the Perfect-Active and the Participial Passive follows then from the choice of the auxiliary in the following way. *Haben* "have" behaves like a control verb in the temporal domain: it has a temporal argument the temporal index of which (the *reference-time* specified by its tense morpheme) it assigns to the embedded Tense-head licensing the perfective interpretation of the participle and barring an empty impersonal pronoun. *Werden* "become" behaves like a raising verb in the temporal domain: it lacks a temporal argument and thus fails to assign a temporal index to the embedded Tense-head. The perfective interpretation of the participle cannot be licensed and the temporal argument of the participle raises to the auxiliary clause to be licensed by the tense of the auxiliary. The embedded Tense-head, in order to escape a violation of Full Interpretation, licenses the empty impersonal pronoun. Minimality guarantees that the empty pronoun can only be licensed in [Spec, VP] of the participial clause. Thus, the empty impersonal pronoun is incapable of licensing an anaphor by entering into a Spec-head relation with a functional head. We assume that anaphors have to be licensed by movement (adjoining to the local AgrS-head). Thus our analysis gives an original explanation for why the passive implicit argument, though occupying an A-positions, cannot bind anaphors.

We have defined minimality as given in (27) and (28) since, in the case of a transitive verb, we are dealing here with the three arguments (including the the temporal argument) and Chomsky's notion of *equidistance* that underlies his definition only works for maximally two arguments. Nothing really hinges on the particular execution that we give below merely for the sake of completeness (we believe that any minimalist account of the licensing of the arguments of ditransitive verbs will also provide a solution to our analysis of participial clauses).

- (27) Minimality: Do not move across the first potential licenser unless it is to meet the Correspondence Rule
- (28) Correspondence Rule: The hierarchy of those arguments that appear in the Spec-positions of functional heads corresponds to the (thematic) hierarchy of arguments in the VP

Lexical arguments have to move out of the VP into functional positions in order to be licensed. Specifically, we assume that the Specifiers of Agr-heads are potential licensers for nominal arguments and that the Specifier of the Tense-head is a potential licenser for the temporal argument. Lexical arguments have to be licensed by checking off lexical Case. Empty arguments can be licensed by assigning them lexical Case or the (abstract) Case index of a transitive verb in a Spec-head relation. We assume the following conditions on the checking of lexical Case (note that we

make the checking of Accusative Case dependent on the availability of a temporal index):

- (29) An Agr-head checks Nominative iff it immediately dominates a tense morpheme
- (29') An Agr-head checks Nominative iff it is a member of an  $X^0$ -chain containing a tense morpheme)
- (30) An Agr-head checks Accusative iff it both immediately dominates a verb (marked with abstract Case) and is a member of an  $X^0$ -chain containing a Tense-head with a temporal index
- (31) [<sub>AgrS-P</sub> [TP [<sub>AgrO-P</sub> [<sub>VP</sub> ... V ] Agr-O ] ge-en ] Agr S ]

Let us discuss a sample derivation. (31) shows the participial clause that is projected by a transitive verb. Let us first look at the case where the participial clause is embedded under *werden* "become". In this case, the embedded Tense-head is not marked with a temporal index. We observe that the German verb never agrees with the direct object. Thus, we assume that the AgrO-head is empty and that the verb can substitute into this position. By verb-movement, we derive a chain that starts with the lowest verb position and ends in the Tense-head, where the verb adjoins to the aspectual morpheme *ge-en*. Since this  $X^0$ -chain is not marked with a Tense-feature, there are three positions where *pass* can potentially be licensed: the Specifier-positions of TP, AgrO-P or VP1. The Specifiers of TP and AgrO-P are excluded as licensing positions by (28). If the empty category moved into one of these positions, the temporal argument and the object could not be moved into licensing positions without violating (28). Thus, the empty category can only be licensed in [Spec,VP1] where it is fully licensed by being assigned the abstract Case index of the (transitive) verb in a Spec-head relation. Then the temporal argument and the object move into the Specifiers of TP and AgrO-P, respectively, observing the Correspondence Rule. However, they can not be licensed in these positions. The AgrO-head cannot assign Accusative (by (30)) and the Tense-head cannot assign an interval. Eventually, they are licensed in [Spec,AgrP] and [Spec,TP] in the auxiliary clause. To obey minimality, the object has to move through the Specifier of the AgrS-head barring the empty category also from being licensed in this position.

In the case where the participial clause is embedded under the auxiliary *haben* "have", the embedded Tense-head is marked with a temporal index. Thus the empty impersonal pronoun can be licensed. The arguments of the participle observing the Correspondence Rule and minimality move into the respective functional Spec-positions. The temporal argument and the direct object can be licensed in their Spec-positions, since the Tense-head can now assign an interval and the AgrO-head is capable of checking Accusative. Only the subject has to move further on in order to check Nominative in the Spec-position of AgrP in the auxiliary clause.

In the case of the passive sentence, however, there is evidence that the object does not have to move all the way up to the auxiliary clause in order to be licensed. In fact, (32a) suggests that it can check Nominative in the Specifier of AgrO in the participial clause, since in the unmarked case (no focusing, no scrambling) the indirect object always precedes the direct object: fronting the Nominative argument in (32a) has the flavor of scrambling, that is, the effect of defocusing the direct object. We observe that the German participle undergoes verb raising (cf. Evers 1975) and (presumably) adjoins to the auxiliary in the AgrS-head in the matrix clause. Thus, the embedded AgrO-head can, by verb raising, become a member of a chain that contains a tense morpheme (the one of the auxiliary), if we assume that the participle morpheme occurs lower in the tree (below AgrO), possibly heading VP1 (as an aspectual verb) or its own Aspectphrase. If this solution is on the right track, then we have to assume that the definition in (29') is the relevant one for the checking of Nominative Case in German. Furthermore, this solution could provide an explanation for why German allows passives of intransitive verbs (32b): the empty impersonal pronoun could be licensed by being assigned Nominative in the Specifier-position of VP1 or of the Aspectphrase directly dominating VP1.

- (32) a. weil dem Kind das Fahrrad gestohlen wurde  
*because the child.DAT the bicycle.NOM stolen became*  
 b. weil getanzt wird  
*because danced becomes*

That it is the special conditions of Nominative assignment in German that allow for passives of intransitive verbs makes the prediction that the latter are excluded in non-finite contexts. This prediction is borne out, as (33) shows.

- (33) a. dass getanzt wird ist schön  
*that danced becomes is nice*  
 b.\* dass [getanzt zu werden] schön ist  
*that [danced to become] nice is*  
 c. die Hoffnung, dass getanzt wird  
*the hope that danced becomes*  
 d.\* die Hoffnung, getanzt zu werden  
*the hope danced to become*

We have given a uniform account of the Perfect-Active and the Participial Passive construction. We have argued that both constructions are based on a reinterpreted Perfect-participle and that this reinterpretation was the effect of the establishment of a new analytical Perfect-tense. Finally, we sketched a uniform account of passives of both transitive and intransitive verbs that rests on the identification of "passiveness" with the presence and licensing of an empty impersonal pronoun.

## 5 References

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