20 Extraction, scrambling, and passive: one or several descriptive devices?

An anonymous reviewer suggested discussing one issue in which transformational theories differ from theories like LFG and HPSG. The reviewer claimed that Transformational Grammars use just one tool for the description of active/passive alternations, scrambling, and extraction, while theories like LFG and HPSG use different techniques for all three phenomena. If this claim were correct and if the analyses made correct predictions, the respective GB/Minimalism theories would be better than their competitors, since the general aim in science is to develop theories that need a minimal set of assumptions. I already commented on the analysis of passive in GB in Section 3.4, but I want to extend this discussion here and include a Minimalist analysis and one from Dependency Grammar.

The task of any passive analysis is to explain the difference in argument realization in examples like (1):

(1) a. She beats him.
    b. He was beaten.

In these examples about chess, the accusative object of *beat* is realized as the nominative in (1b). In addition, it can be observed that the position of the elements is different: while *him* is realized postverbally in object position in (1a), it is realized preverbally in (1b). In GB this is explained by a movement analysis. It is assumed that the object does not get case in passive constructions and hence has to move into the subject position where case is assigned by the finite verb. This analysis is also assumed in Minimalist work as in David Adger's textbook (2003), for instance. Figure 20.1 on the next page shows his analysis of (2):

(2) Jason was killed.

TP stands for Tense Phrase and corresponds to the IP that was discussed in Chapter 3. PassP is a functional head for passives. *v*P is a special category for the analysis of verb phrases that was originally introduced for the analysis of ditransitives (Larson 1988) and VP is the normal VP that consists of verb and object. In Adger's analysis, the verb *kill* moves from the verb position in VP to the head position of *v*, the passive auxiliary *be* moves from the head position of PassP to the head position of the Tense Phrase. Features like Infl are 'checked' in combination with such movements. The exact implementation of these checking and valuing operations does not matter here. What is important is that *Jason* moves from the object position to a position that was formerly known as the

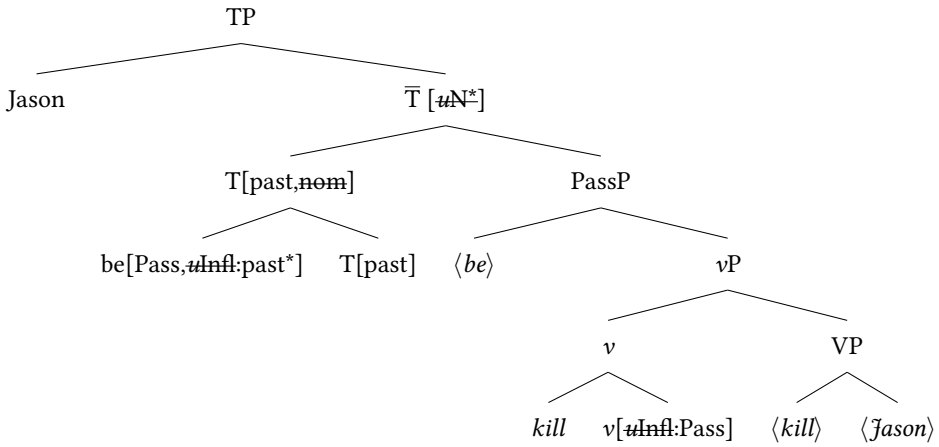

Figure 20.1: Adger's Minimalist movement-based analysis of the passive (p. 231)

specifier position of T (see Footnote 26 on page 162 on the notion of specifier). All these analyses assume that the participle cannot assign accusative to its object and that the object has to move to another position to get case or check features. How the fact that the participle cannot assign case is represented formally was hardly ever made explicit in the GB literature. The following is a list of statements that can be found in the literature:

(3) a. We shall assume that a passivized verb loses the ability to assign structural ACCUSATIVE case to its complement. (Haegeman 1994: 183)

b. das Objekt des Aktivsatzes wird zum Subjekt des Passivsatzes, weil die passivische Verbform keinen Akkusativ-Kasus regieren kann (Akk-Kasus-Absorption) (Lohnstein 2014: 172)

In addition, it is sometimes said that the external theta role is absorbed by the verb morphology (Jaeggli 1986; Haegeman 1994: 183). Now, what would it entail if we made this explicit? There is some lexical item for verbs like *beat*. The active form has the ability to assign accusative to its object, but the passive form does not. Since this is a property that is shared by all transitive verbs (by definition of the term transitive verb), this is some regularity that has to be captured. One way to capture this is the assumption of a special passive morpheme that suppresses the agent and changes something in the case specification of the stem it attaches too. How this works in detail was never made explicit. Let us compare this morpheme-based analysis with lexical rule-based analyses: as was explained in Section 19.5, empty heads can be used instead of lexical rules in those cases in which the phonological form of the input and the output do not differ. So for example, lexical rules that license additional arguments as in resultative constructions, for instance, can be replaced by an empty head. However, as was explained in Section 9.2, lexical rules are also used to model morphology. This is also true for Construction Gram-

mar (see Gert Booij's work on Construction Morphology (2010), which is in many ways similar to Riehemann's work in HPSG (1993; 1998)). In the case of the passive lexical rule, the participle morphology is combined with the stem and the subject is suppressed in the corresponding valence list. This is exactly what is described in the GB/MP literature. The respective lexical rule for the analysis of *ge-lieb-t* 'loved' is depicted in Figure 20.2 to the left. The morpheme-based analysis is shown to the right. To keep things simple, I

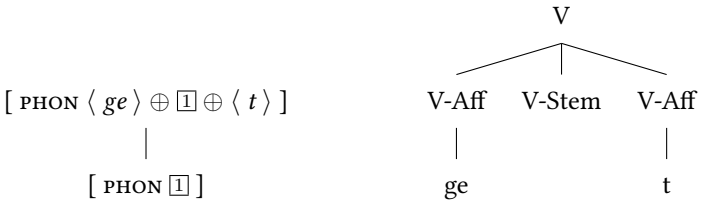

Figure 20.2: Lexical rule-based/constructionist vs. morpheme-based analysis

assume a flat analysis, but those who insist on binary branching structures would have to come up with a way of deciding whether the *ge-* or the *-t* is combined first with the stem and in which way selection and percolation of features takes place. Independent of how morphology is done, the fact that the inflected form (the top node in both figures) has different properties than the verb stem has to be represented somehow. In the morpheme-based world, the morpheme is responsible for suppressing the agent and changing the case assignment properties, in the lexical rule/construction world this is done by the respective lexical rule. There is no difference in terms of needed tools and necessary stipulations.

The situation in Minimalist theories is a little bit different. For instance, (Adger 2003: 229, 231) writes the following:

> Passives are akin to unaccusatives, in that they do not assign accusative case to their object, and they do not appear to have a thematic subject. [...] Moreover, the idea that the function of this auxiliary is to select an unaccusative little *v*P simultaneously explains the lack of accusative case and the lack of a thematic subject. (Adger 2003: 229, 231)

So this is an explicit statement. The relation between a stem and a passive participle form that was assumed in GB analyses is now a verb stem that is combined with two different versions of little *v*. Which *v* is chosen is determined by the governing head, a functional Perf head or a Pass head. This can be depicted as in Figure 20.3 on the next page. When *kill* is used in the perfect or the passive, it is spelled out as *killed*. If it is used in the active with a 3rd person singular subject it is spelled out as *kills*. This can be compared with a lexical analysis, for instance the one assumed in HPSG. The analysis is shown in Figure 20.4 on the following page. The left figure shows a lexical item that is licensed by a lexical rule that is applied to the stem *kill-*. The stem has two elements in its argument structure list and for the active forms the complete argument structure list

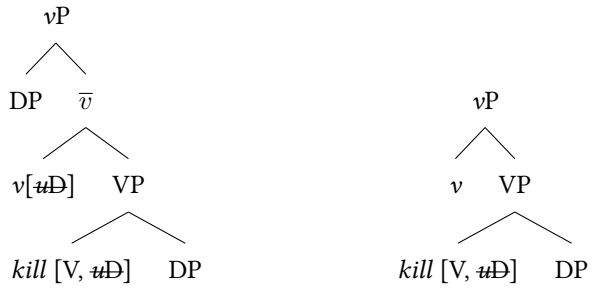

Figure 20.3: Analysis of the passive and the perfect and the passive in a Minimalist theory involving two different versions of little *v*

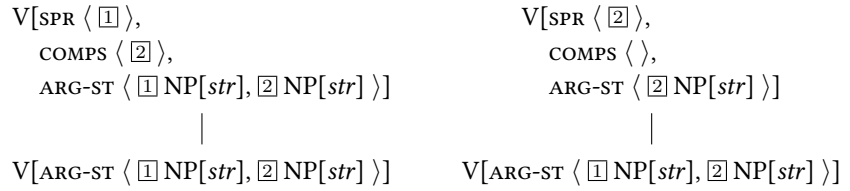

Figure 20.4: Lexical rule-based analysis of the perfect and the passive in HPSG

is shared between the licensed lexical item and the stem. The first element of the ARG-ST list is mapped to SPR and the other elements to COMPS (in English). Passive is depicted in the right figure: the first element of the ARG-ST with structural case is suppressed and since the element that was the second element in the ARG-ST list of the stem (2) is now the first element, this item is mapped to SPR. See Section 9.2 for passive in HPSG and Section 9.6.1 for comments on ARG-ST and the differences between German and English.

The discussion of Figures 20.3 and 20.4 are a further illustration of a point made in Section 19.5: lexical rules can be replaced by empty heads and vice versa. While HPSG says there are stems that are related to inflected forms and corresponding to the inflection the arguments are realized in a certain way, Minimalist theories assume two variants of little *v* that differ in their selection of arguments. Now, the question is: are there empirical differences between the two approaches? I think there are differences if one considers the question of language acquisition. What children can acquire from data is that there are various inflected forms and that they are related somehow. What remains questionable is whether they really would be able to detect empty little *v*s. One could claim of course that children operate with chunks of structures such as the ones in Figure 20.3. But then a verb would be just a chunk consisting of little *v* and V and having some open slots. This would be indistinguishable from what the HPSG analysis assumes.

As far as the "lexical rules as additional tool" aspect is concerned, the discussion is closed, but note that the standard GB/Minimalism analyses differ in another way from

LFG and HPSG analyses, since they assume that passive has something to do with movement, that is, they assume that the same mechanisms are used that are used for nonlocal dependencies.[1] This works for languages like English in which the object has to be realized in postverbal position in the active and in preverbal position in the passive, but it fails for languages like German in which the order of constituents is more free. Lenerz (1977: Section 4.4.3) discussed the examples in (44) on page 113 – which are repeated here as (4) for convenience:

(4) a. weil das Mädchen dem Jungen den Ball schenkt
because the girl the.DAT boy the.ACC Ball gives
'because the girl gives the ball to the boy'

b. weil dem Jungen der Ball geschenkt wurde
because the.DAT boy the.NOM ball given was

c. weil der Ball dem Jungen geschenkt wurde
because the.NOM ball the.DAT boy given was
'because the ball was given to the boy'

While both orders in (4b) and (4c) are possible, the one with dative–nominative order in (4b) is the unmarked one. There is a strong linearization preference in German demanding that animate NPs be serialized before inanimate ones (Hoberg 1981: 46). This linearization rule is unaffected by passivization. Theories that assume that passive is movement either have to assume that the passive of (4a) is (4c) and (4b) is derived from (4c) by a further reordering operation (which would be implausible since usually one assumes that more marked constructions require more transformations), or they would have to come up with other explanations for the fact that the subject of the passive sentence has the same position as the object in active sentences. As was already explained in Section 3.4, one such explanation is to assume an empty expletive subject that is placed in the position where nominative is assigned and to somehow connect this expletive element to the subject in object position. While this somehow works, it should be clear that the price for rescuing a movement-based analysis of passive is rather high: one has to assume an empty expletive element, that is, something that neither has a form nor a meaning. The existence of such an object could not be inferred from the input unless it is assumed that the structures in which it is assumed are given. Thus, a rather rich UG would have to be assumed.

The question one needs to ask here is: why does the movement-based analysis have these problems and why does the valence-based analysis not have them? The cause of the problem is that the analysis of the passive mixes two things: the fact that SVO languages like English encode subjecthood positionally, and the fact that the subject is suppressed in passives. If these two things are separated the problem disappears. The fact

[1] There is another option in Minimalist theories. Since Agree can check features nonlocally, T can assign nominative to an embedded element. So, in principle the object may get nominative in the VP without moving to T. However, Adger (2003: 368) assumes that German has a strong EPP feature on T, so that the underlying object has to move to the specifier of T. This is basically the old GB analysis of passive in German with all its conceptual problems and disadvantages.

that the object of the active sentence in (1a) is realized as the subject in (1b) is explained by the assumption that the first NP on the argument structure list with structural case is realized as subject and mapped to the respective valence feature: SPR in English. Such mappings can be language specific (see Section 9.6.1 and Müller (2016a) where I discuss Icelandic, which is an SVO language with subjects with lexical case).

In what follows, I discuss another set of examples that are sometimes seen as evidence for a movement-based analysis. The examples in (5) are instances of the so-called remote passive (Höhle 1978: 175–176).[2]

(5) a. daß er auch von mir zu überreden versucht wurde[3]
that he.NOM also from me to persuade tried got
'that an attempt to persuade him was also made by me'

b. weil der Wagen oft zu reparieren versucht wurde
because the car.NOM often to repair tried was
'because many attempts were made to repair the car'

What is interesting about these examples is that the subject is the underlying object of a deeply embedded verb. This seems to suggest that the object is extracted out of the verb phrase. So the analysis of (5b) would be (6):

(6) weil [$_{IP}$ der Wagen$_i$ [$_{VP}$ oft [$_{VP}$ [$_{VP}$ [$_{VP}$ $\_i$ zu reparieren] versucht] wurde]
because the car.NOM often to repair tried was

While this is a straight-forward explanation of the fact that (5b) is grammatical, another explanation is possible as well. In the HPSG analysis of German (and Dutch) it is assumed that verbs like those in (5b) form a verbal complex, that is, *zu reparieren versucht wurde* 'to repair tried was' forms one unit. When two or more verbs form a complex, the highest verb attracts the arguments from the verb it embeds (Hinrichs & Nakazawa 1989b, 1994; Bouma & van Noord 1998). A verb like *versuchen* 'to try' selects a subject, an infinitive with *zu* 'to' and all complements that are selected by this infinitive. In the analysis of (7), *versuchen* 'to try' selects for its subject, the object of *reparieren* 'to repair' and for the verb *zu reparieren* 'to repair'.

(7) weil er den Wagen zu reparieren versuchen will
because he.NOM the.ACC car to repair try wants
'because he wants to try to repair the car'

Now if the passive lexical rule applies to *versuch-*, it suppresses the first argument of *versuch-* with structural case, which is the subject of *versuch-*. The next argument of *versuch-* is the object of *zu reparieren*. Since this element is the first NP with structural case, it gets nominative as in (5b). So, this shows that there is an analysis of the remote passive that does not rely on movement. Since movement-based analyses were shown to

[2] See Müller (2002a: Section 3.1.4.1) and Wurmbrand (2003b) for corpus examples.
[3] Oppenrieder (1991: 212).

be problematic and since there are no data that cannot be explained without movement, analyses without movement have to be preferred.

This leaves us with movement-based accounts of local reordering (scrambling). The reviewer suggested that scrambling, passive, and nonlocal extraction may be analyzed with the same mechanism. It was long thought that scope facts made the assumption of movement-based analyses of scrambling necessary, but it was pointed out by Kiss (2001: 146) and Fanselow (2001: Section 2.6) that the reverse is true: movement-based accounts of scrambling make wrong predictions with regard to available quantifier scopings. I discussed the respective examples in Section 3.5 already and will not repeat the discussion here. The conclusion that has to be drawn from this is that passive, scrambling, and long distance extraction are three different phenomena that should be treated differently. The solution for the analysis of the passive that is adopted in HPSG is based on an analysis by Haider (1986a), who worked within the GB framework. The "scrambling-as-base generation" approach to local reordering that was used in HPSG right from the beginning (Gunji 1986) is also adopted by some practitioners of GB/Minimalism, e. g. Fanselow (2001).

Having discussed the analyses in GB/Minimalism, I now turn to Dependency Grammar. Groß & Osborne (2009) suggest that *w*-fronting, topicalization, scrambling, extraposition, splitting, and also the remote passive should be analyzed by what they call *rising*. The concept was already explained in Section 11.5. The Figures 20.5 and 20.6 show examples for the fronting and the scrambling of an object. Groß and Osborne assume

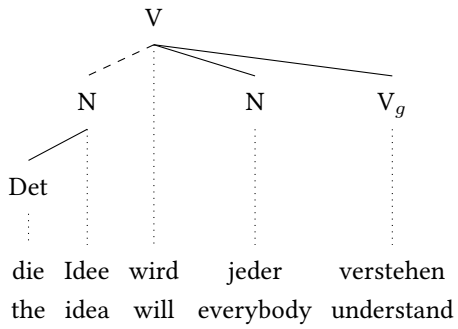

Figure 20.5: Analysis of *Die Idee wird jeder verstehen.* 'Everybody will understand the idea.' involving rising

that the object depends on the main verb in sentences with auxiliary verbs, while the subject depends on the auxiliary. Therefore, the object *die Idee* 'the idea' and the object *sich* 'himself' have to rise to the next higher verb in order to keep the structures projective. Figure 20.7 on the next page shows the analysis of the remote passive. The object of *zu reparieren* 'to repair' rises to the auxiliary *wurde* 'was'.

Groß and Osborne use the same mechanism for all these phenomena, but it should be clear that there have to be differences in the exact implementation. Groß and Osborne

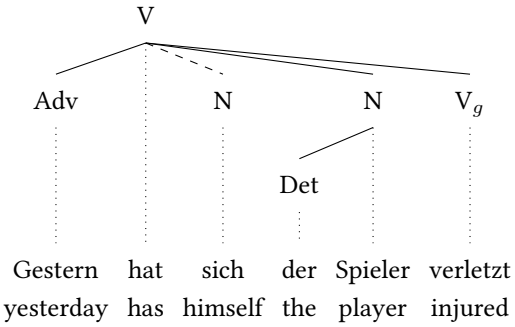

Figure 20.6: Analysis of *Gestern hat sich der Spieler verletzt.* 'Yesterday, the player injured himself.' involving rising of the object of the main verb *verletzt* 'injured'

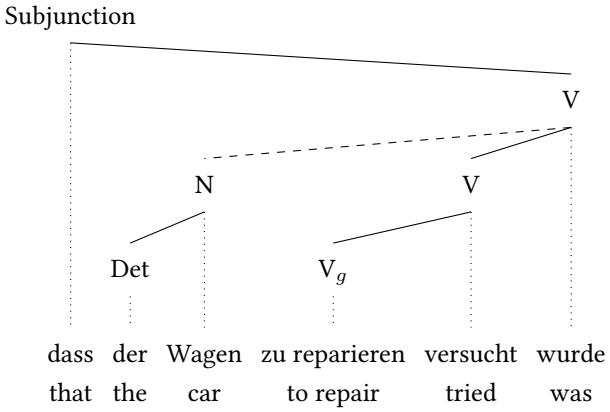

Figure 20.7: Analysis of the remote passive *dass der Wagen zu reparieren versucht wurde* 'that it was tried to repair the car' involving rising

say that English does not have scrambling, while German does. If this is to be captured, there must be a way to distinguish the two phenomena, since if this were not possible, one would predict that English has scrambling as well, since both German and English allow long distance fronting. Groß & Osborne (2009: 58) assume that object nouns that rise must take the nominative. But if the kind of rising that they assume for remote passives is identical to the one that they assume for scrambling, they would predict that *den Wagen* gets nominative in (8) as well:

(8) dass den Wagen niemand repariert hat
that the.ACC car nobody.NOM repaired has
'that nobody repaired the car'

Since *den Wagen* 'the car' and *repariert* 'repaired' are not adjacent, *den Wagen* has to rise to the next higher head in order to allow for a projective realization of elements. So in order to assign case properly, one has to take into account the arguments that are governed by the head to which a certain element rises. Since the auxiliary *hat* 'has' already governs a nominative, the NP *den Wagen* has to be realized in the accusative. An analysis that assumes that both the accusative and nominative depend on *hat* 'has' in (8) is basically the verbal complex analysis assumed in HPSG and some GB variants.

Note, however, that this does not extend to nonlocal dependencies. Case is assigned locally by verbs or verbal complexes, but not to elements that come from far away. The long distance extraction of NPs is more common in southern variants of German and there are only a few verbs that do not take a nominative argument themselves. The examples below involve *dünken* 'to think', which governs an accusative and a sentential object and *scheinen* 'to seem', which governs a dative and a sentential object. If (9a) is analyzed with *den Wagen* rising to *dünkt*, one might expect that *den Wagen* 'the car' gets nominative since there is no other element in the nominative. However, (8b) is entirely out.

(9) a. Den Wagen dünkt mich, dass er repariert.
the.ACC car thinks me.ACC that he.NOM repairs
'I think that he repairs the car'

b. * Der Wagen dünkt mich, dass er repariert.
the.NOM car thinks me.ACC that he.NOM repairs

Similarly there is no agreement between the fronted element and the verb to which it attaches:

(10) a. Mir scheint, dass die Wagen ihm gefallen.
me.DAT.1PL seems.3SG that the cars.3PL him please.3PL
'He seems to me to like the cars.'

b. Die Wagen scheint mir, dass ihm gefallen.
the cars.3PL seem.3SG me.DAT that him please.3PL
'The cars, he seems to me to like.'

c. * Die Wagen scheinen mir, dass ihm gefällt.
the cars.3PL seem.3PL me.DAT that him pleases.3SG

d. * Die Wagen scheinen mir, dass ihm gefallen.
the cars.3PL seem.3PL me.DAT that him please.3PL

This shows that scrambling/remote passive and extraction should not be dealt with by the same mechanism or if they are dealt with by the same mechanism one has to make sure that there are specialized variants of the mechanism that take the differences into account. I think what Groß and Osborne did is simply recode the attachment relations of phrase structure grammars. *die Idee* 'the idea' has some relation to *wird jeder verstehen* 'will everybody understand' in Figure 20.5, as it does in GB, LFG, GPSG, HPSG, and other

similar frameworks. In HPSG, *die Idee* 'the idea' is the filler in a filler-head configuration. The remote passive and local reorderings of arguments of auxiliaries, modal verbs, and other verbs that behave similarly are explained by verbal complex formation where all non-verbal arguments depend on the highest verb (Hinrichs & Nakazawa 1994).

Concluding this chapter, it can be said that local reorderings and long-distance dependencies are two different things that should be described with different tools (or there should be further constraints that differ for the respective phenomena when the same tool is used). Similarly, movement-based analyses of the passive are problematic since passive does not necessarily imply reordering.