ON BY-PASSIVE AND WHY UNACCUSATIVES DON’T PASSIVIZE

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1 The Passive Transformation in Aspects

In Aspects (p. 104), Chomsky proposes a passive transformation with the structural description in (1):

(1) NP - Aux - V - … - NP - … - by passive - …

Chomsky takes by passive to be a manner adverb, and its presence in (1) is intended to prevent the passive transformation from applying to verbs that do not take manner adverbs, like weigh in The pumpkin weighed 100 kilos or resemble in He resembles his mother. Since weigh and resemble have non-agentive subjects in such sentences, it is natural to assume that by passive is intended to be an agent-oriented adverb in (1). Since unaccusative verbs like fall etc. do not have agentive subjects either, they too should then not be able to undergo a transformation with the structural description in (1). If the appearance of a dedicated passive auxiliary is also due to the passive transformation, this might account for the ungrammaticality of (2)b in Norwegian:

(2)a Huset ble bygget i 1645 (av en bryggerieier)
the house became built in 1645 (by a brewery owner)
“The house was built in 1645 (by a brewery owner).”
b*Katten ble forsvunnet i forrige uke
the cat became disappeared last week

Of course, one might say that the structure underlying (2)b would fail to meet the structural description in (1) even without by passive, since an unaccusative verb only takes a single NP argument. But if the Aspects account of passives is imported into a framework where the second
NP in (1) must move into an empty subject position, as in Emonds (1976), and the sole argument of an unaccusative verb originates in the VP\(^1\), the passive transformation would have a structural description matching the structure underlying *Katten forsvant* “The cat disappeared” but for the presence of *by passive*.

Equivalently, one might set up things so that passives can only be formed from verbs associated with “little v”, taking this to be the head that introduces agentive external arguments.

In this squib, I will show that that none of this will be quite sufficient to account for the contrast between transitive and unaccusative verbs exemplified in (2), and I will suggest that (2)b can only be excluded if one makes specific assumption about the way lexical roots are associated with syntactic heads.

## 2 Lundquist’s Observation

The crucial observation is due to Björn Lundquist (2008), who first points out that *bli* “become”, which is used as the passive auxiliary in Scandinavian (cf. (3)), also combines with adjectives, as in (3)b:

1. **(2)a**  Huset ble bygget i 1645 (av en bryggerieier)  
   the house became built in 1645 (by a brewery owner)  
   “The house was built in 1645 (by a brewery owner).”

   **(3)a**  Katten er (fortsatt) syk  
   the cat is (still) sick

2. **(3)b**  Katten ble syk i forrige uke  
   the cat became sick last week  
   “The cat got sick last week.”

Then, he notes that although adjectival participles (with the properties of Kratzer’s (2000) “target state participles”) can be formed from unaccusative roots, e.g. *forsvunnet* “disappeared” from *forsvinne* “disappear”, such adjectival participles cannot combine with *bli* “become”:

1. **(4)a**  Katten er (fortsatt) forsvunnet  
   the cat is (still) disappeared

2. **(4)b**  Katten ble forsvunnet i forrige uke  
   the cat became disappeared last week  
   ( = (2)b)

This clearly means that no formulation of the passive transformation would suffice to rule out (2)b, since there is an alternative derivational path to (2)b which must also be closed.

Equally clearly, we cannot prevent *bli* from embedding adjectival passives from unaccusative verbs by making it select for vP, since the adjective in (3)b is certainly not a vP.

\(^1\) Actually, pseudo-passives like (i) suggest that the argument one generally takes to originate as an object may be replaced by an agentive DP under certain circumstances, especially on Collins’s (2005) analysis of *by*-phrases:

1. **(i)**  Penn Station is arrived at by 2000 commuters every morning
Lundquist’s own conjecture is that (4)b somehow is blocked by the existence of (5) with the same meaning as (4)b would have, i.e. transition into a state:

(5) Katten forsvant i forrige uke  
the cat disappeared last week

In the following sections, I’ll sketch a way of implementing this idea.

3 Decomposing the Verb

Ramchand (2008) argues for the following decomposition of verbs:

(6) \[
\begin{array}{c}
{\text{InitP}} \\
{\text{DP} \, 1} \\
{\text{Init}} \\
{\text{ProcP}} \\
{\text{DP} \, 2} \\
{\text{Proc}} \\
{\text{ResP}} \\
{\text{DP} \, 3} \\
{\text{Res}} \\
\end{array}
\]

In (6), the ResP denotes a state holding of the individual(s) denoted by DP$_3$, whereas ProcP denotes a process in which the individual(s) denoted by DP$_2$ (“the undergoer”) participates. DP$_2$ and DP$_3$ may be the same DP, i.e. Spec-ProcP may be created by Internal Merge. Init introduces an “initiator” (DP$_1$), i.e. an individual in a state that triggers the process denoted by ProcP, and we shall take it that DP$_1$ may be the same as DP$_2$. (This will become crucial in section 6.) Thus, Init is a near-equivalent of the head called “little v” (or, perhaps, v*) in other accounts.

The subeventualities denoted by the three different heads are tied together by the “leads-to relation”. For example, the process denoted by Proc leads to the state described by the ResP. In the case where DP$_2$ = DP$_3$, we may say that the process leads the undergoer into a certain state.

From this perspective, we may fit (3)b into (6) by taken bli “become” to lexicalize Proc, since (3)b describes the cat’s transition into a state of illness:

(3)b Katten ble syk i forrige uke  
the cat became sick last week

“The cat got sick last week.”

(7) \[
\begin{array}{c}
{\text{Proc}} \\
{\text{DP katten}} \\
{\text{ble}} \\
{\text{Res}} \\
{\text{DP katten}} \\
{\text{syk}} \\
\end{array}
\]

This resonates with Baker’s (2005) idea that a verb may contain an adjective at the bottom of its internal structure.

Ramchand also argues that a single verb may lexicalize more than one single head in (6), depending on its lexical properties. So if (the root of) forsvinne “disappear” is specified in the lexicon as able to lexicalize both Proc and Res, we get the picture in (8):

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2 According to Ramchand (2008), Init and Res are optional components of the template. That is, a verb may only have Proc in it.

3 For present purposes, we may think of this as an instance of “spanning”: If the lexical entry associates a morpheme (lexical or functional) with sequence of heads S, e.g. <Init, Proc, Res>, that morpheme can lexicalize any sequence S’ of hierarchically adjacent heads (adjacent modulo Specifiers) if and only if S’ matches a subsequence of S. (This is an adaptation of Starke’s (2009) Superset Principle.)
If the lexicalization algorithm prefers to use the root lexicalizing Res to lexicalize higher heads as well, whenever the lexical specification of the root allows this,\(^4\) we can capture the blocking effect assumed in section 2, i.e. (9) is excluded:

\[
(9)^* \quad \text{Proc the cat Proc [Res <the cat> Res]]}
\]

\[
\text{bl}i \quad \text{forsvinne}
\]

(3)b is fine, because syk and other adjectival roots cannot lexicalize heads above Res, but (4)b is blocked by (5), since forsvinne can lexicalize heads above Res.

We still allow for (4)a by assuming that the copula være “be” is not the spell-out of any part of (6), unlike bli “become”.

In the next section, I’ll show how this can be made consistent with the appearance of bli with participles formed from (agentive) transitive verbs.

\section*{4 Lexicalizing the Decomposed Verb}

The problem we need to solve is this: Given that (10) shows that the root of bygge “build” can lexicalize all three heads of (6), as in (11), we might expect (2)a to be blocked for the same reason as (2)b/(4)b:

\[
(10) \quad \text{Bryggerieieren bygget huset i 1645.}
\text{the brewery owner built house-the in 1645}
\]

\[
(11) \quad \text{[Init the brewery owner Init [Proc the house Proc [Res <the house> Res]]]}
\text{bygge}
\]

\[
(2)a \quad \text{Huset ble bygget i 1645 (av en bryggerieier)}
\text{the house became built in 1645 (by a brewery owner)}
\text{“The house was built in 1645 (by a brewery owner).”}
\]

\[
(12)a \quad \text{[Proc the house Proc [Res <the house> Res]]}
\text{bygge}
\]

\(^4\) This should be seen as a consequence of (an adaptation of) a principle that nanosyntacticians variously refer to as “Biggest wins” or “Minimize junk”.

Having *bygge* block *blí* as in (12) in fact gives the right result for adjectival participles of the type called “resultant state participles” by Kratzer (2000), i.e. the adjectival participles involving transition into a state:

(13)a Huset antas bygget i 1645
the house is.assumed built in 1645
“The house is assumed to have been built in 1645.”

(13)b* Huset antas blítt bygget i 1645
the house is.assumed become built in 1645

But (2)a must obviously not be blocked. What I propose, is that verbal passive participles also include Init, and that *blí* “become” lexicalizes Init in (2)b:

(14) [InitP Init [Proc the house Proc [Res <the house> Res ]]]

(The assumption that verbal passive participles contain Init, is based on taking *by*-phrases to link a DP to Init.)

This, of course, also contradicts earlier assumptions, since we have seen that the root of *bygge* must be able to lexicalize Init in addition to Proc and Res in active sentences like (10). To fix this, we’ll have to distinguish between two “flavors” of Init. One, notated as Initₐ, will only appear in active sentences, while the other, Initₚ, only appears in passives. We can then say that the sequence of heads that can be lexicalized by the root of *bygge* and other transitive verbs includes Initₐ, but not Initₚ, e.g. the lexicon associates the root of *bygge* with the sequence < Initₐ, Proc, Res>, and the general lexicalization algorithm will allow it to lexicalize any subsequence of that sequence, but nothing else. This will prevent the root of *bygge* from blocking *blí* in (15):

(15) [InitP Initₚ [Proc the house Proc [Res <the house> Res ]]]

This presupposes that *blí* is associated with the sequence < Initₚ, Proc>. Only in this sense is *blí* a passive auxiliary. Since *blí* can lexicalize any subsequence of < Initₚ, Proc>, it will not only

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5 This begs the question how exactly the difference between Initₐ and Initₚ is to be characterized. This seems equivalent to characterizing the difference between different “flavors” of little v or of Voice. I leave the question open here.
appear in passives, but also in sentences like (3)b, which most likely don’t contain any Init in their structure:\footnote{This is not entirely obvious, however. To the extent that (3)b may be taken to describe an eventuality in which the cat found itself in a state that led to a process of its getting sick, (3)b might well contain Init. But then bli or the adjectival root lexicalizing Res must somehow constrain Init to fill its Spec by movement of the undergoer DP in Spec-ProcP (see the discussion of smelte “melt” in section 6) so that (i) is excluded:}

\begin{quote}
(3)b Katten ble syk i forrige uke
cat-the became sick last week
“The cat got sick last week.”
\end{quote}

As for the structures in which an unaccusative verb like forsvinne lexicalizes Proc and Res, either they cannot also contain Init or they can only contain Init\textsubscript{P} in which case these unaccusative verbs will be treated as a sort of lexicalized passives. Either way, there will not be room for bli. But to the extent that unaccusative verbs don’t come with agentive by-\textit{phrases}, the first of the two options may be preferable.\footnote{If (3)b contains Init\textsubscript{A}, the sequence of heads associated with bli must contain an Init which is unspecified for the properties distinguishing Init\textsubscript{A} from Init\textsubscript{P}. This would not allow bli to occur in active sentences with a verbal root lexicalizing Proc and Res, since the root would block bli at Init\textsubscript{A} anyway.}

\section{5 Participles vs. Non-Participial Forms}

In (5), where the verb root lexicalizes Proc and Res, the verb ends up in a non-participial form:

\begin{quote}
(5) Katten forsvant i forrige uke
the cat disappeared last week
\end{quote}

But in (2)a and (13)a, where the verb root also lexicalizes Proc and Res, the verb must come out as a participle:

\begin{quote}
(2)a Huset ble bygget i 1645 (av en bryggerieier)
the house became built in 1645 (by a brewery owner)
“The house was built in 1645 (by a brewery owner).”

(13)a Huset antas bygget i 1645
the house is assumed built in 1645
“The house is assumed to have been built in 1645.”
\end{quote}

Even forsvinne must surface as a participle when it only lexicalizes Res:

\begin{quote}
(4)a Katten er (fortsatt) forsvunnet
cat-the is (still) disappeared
\end{quote}
In terms of the assumptions I have made along the way, there is a descriptive generalization that can be formulated as in (16):

(16) A verb must be(come) a participle when it fails to lexicalize all the heads in the sequence the lexicon associates its root with.

If the root of *forsvinne* is associated with <Proc, Res>, it will be packed into a participle when it only lexicalizes Res, as in (4)a, but not when it lexicalizes both Proc and Res, as in (5). If transitive roots like the root of *bygge* are associated with <InitA, Proc, Res>, they will surface as participles in passives, where they don’t lexicalize InitA.

However, a formal implementation of (16) would involve taking a stand on a number of issues that I’m not in a position to address here.

6 Anticausatives

The account sketched here has consequences for the analysis of verbs that appear both as unaccusative verbs and as agentive transitive verbs, like *smelte* “melt” in (17) which exemplifies a “causative/anticausative alternation”:

(17)a Vi smelter isen
we melt the ice
b Isen smelter
the ice melts
c Isen ble smeltet
the ice became melted
“The ice was melted.”

As (17)b shows, such verbs occur as participles combining with *bli*. If (16) is a valid generalization, this is inconsistent with a particular way of relating (17)a and (17)b. Saying that a causative/anticausative pair corresponds to a single root which can lexicalize all three heads in (18)a as well as only the two heads in (18)b, is consistent with associating the root of *smelte* with the sequence <InitA, Proc, Res>, since a root is by assumption capable of lexicalizing any subsequence of the sequence it is associated with:

(18)a [InitP vi Init [ProcP isen Proc [ResP <isen> Res ]]] ( = (18)a)

| smelte |

b [ProcP isen Proc [ResP <isen> Res ]] ( = (18)b)

| smelte |
But if (16) is valid, the verb should then be a participle in (17)b where one of the heads in < Init, Proc, Res> is not lexicalized by the root of smelte.

We might try to get around this by marking Init as optional in the sequence of heads associated with smelte, and by modifying (16) so that it applies only when a root fails to lexicalize all non-optional heads in the sequence it is associated with. But then the root should not surface as a participle in (17)c, where the two non-optional heads in < (Init,) Proc, Res> are both lexicalized by smelte:

\[
(19) \ [\text{InitP} \ \text{InitP} \ \text{ProcP} \ \text{ResP} <\text{isen}> \ \text{Res P} ]]
\]

\[
[\text{bli} \ \text{smelte}]
\]

Therefore, if (16) is valid, we must adopt a view of anticausatives similar to the one advocated by Chierchia (2005) and analyze (17)b as in (20), where the event described by (17)b is represented as self-initiated, i.e. the ice is initially in a state (e.g. of having reached a certain temperature) which sets off a process of melting that terminates with the ice being melted:

\[
(20) \ [\text{Init} \ \text{isen} \ \text{InitA} \ [\text{ProcP} <\text{isen}> \ \text{Proc} \ [\text{ResP} <\text{isen}> \ \text{Res P} ]]]
\]

\[
[\text{smelte}]
\]

In (20), all the heads in < InitA, Proc, Res> are lexicalized by the root of smelte, and (16) does not predict that smelte should appear in a participial form.

But in (19), the root doesn’t lexicalize InitA and must therefore show up as a participle.

7 Conclusion

The discussion extending over the preceding sections started out from two observations. The first was that the inclusion of by passive in the structural description of Chomsky’s passive transformation in Aspects could be seen as a way of limiting the passive transformation to agentive verbs, thus excluding unaccusative verbs as well as non-agentive weigh and resemble.

The second observation was the observation that the “passive auxiliary” bli “become” also can embed adjectives, as in (3)b:

\[
(3)a \ \text{Katten} \text{ er} \ (\text{fortsatt}) \ syk \\
\text{the cat} \text{ is} \ (\text{still}) \ \text{sick}
\]

\[
(3)b \ \text{Katten} \text{ ble} \ syk \ i \ \text{forrige} \ uke \\
\text{the cat became} \ \text{sick last week}
\]

“The cat got sick last week.”

Given the fact that some unaccusative verbs can form adjectival participles, as in (4)a, which seems parallel to (3)a, this leads to the expectation that adjectival participles can also be
embedded under *bli* giving rise to sentences like (4)b/(2)b, which would then be entirely parallel to (3)b:

(4)a  Katten er (fortsatt) forsvunnet  
the cat is (still) disappeared  

b*Katten ble forsvunnet i forrige uke  
the cat became disappeared (last week)

Since (3)b clearly isn’t created by anybody’s passive transformation, this means that what we would expect, is that there should be an alternative derivational path leading to exactly the same set of surface strings that would be created, if the passive transformation were allowed to apply to unaccusatives. But as Lundquist has pointed out this path must be closed, since (4)b is in fact ungrammatical. The rest of this squib has been devoted to discussing a particular way of achieving this.

In conclusion, it should be pointed out that the account I have sketched, still retains a residue of *by passive* insofar as the presence of an agent-oriented manner adverb *by passive* in the passive transformation proposed in *Aspects* should be seen as a way of enforcing the presence of a little v introducing agentive external arguments and little v would be equivalent to the head Init appearing in (6). Crucially, the account of (4)b had to be set up so that *bli* can combine with a participle only in structures that contain Init (in its passive guise).

**References**


