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2 **The emergence of middle voice structures** 3 4 **with and without agents**

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6 **Abstract:** This article presents evidence that, cross-linguistically or within the
7 same language (family), there appears to be no morphosyntactic properties and/
8 or structures specifically designated for the formation of middle voice construc-
9 tions. What has been labeled a ‘middle voice construction’ is a semantic interpreta-
10 tion that, crucially, is blocked when an event variable is existentially closed
11 by T. This article focuses on two ways of expressing a middle statement; namely
12 (i) middle voice readings that occur with lexical-s passives, and (ii) adjectival
13 middles – in Mainland Scandinavian, showing that properties such as the avail-
14 ability of an agent in middles pattern with whether an event variable is present
15 (in the structure) or not. These are the result of two equally valid and productive
16 grammatical structures: one where an event variable is present, an agent is pro-
17 jected and a modal operator blocks existential closure of the event variable, and
18 another one where the event variable is not present in the structure, and therefore
19 the operator is not necessary – hence impossible.
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21 **Keywords:** middles, agents, event variable, operators, Mainland Scandinavian

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27 **1 Introduction: there is no middle construction**

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29 One potential consequence of the dismissal of phrase structure rules (including
30 X-bar structure, Stowell 1981, Chomsky 1981) and the hypothesis that the proper-
31 ties of syntactic constructions follow derivationally from the properties of the
32 items selected in a numeration is that long-standing notions such as subject,
33 passive voice or middle construction dissolve as potential primitives of analysis.
34 What is more, following this line of thought we have no guarantee that what has
35 been classified as a “passive” or a “middle voice construction” is a homogeneous
36 concept cross-linguistically, or even within the same language and closely related
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languages. For instance, recently Gallego (2013) has argued that the same interpretation and linear sequence can be obtained through two different derivations that minimally differ in the items included in their numeration. Sensitive tests for constituency and movement differentiate between them, but their interpretation is essentially identical.

This possibility is even more acute when we consider notions or constructions that have been defined primarily on the basis of their semantic composition, that is, attending to properties of their interpretation that become obvious at LF. Middle voice constructions constitute such a notion. Following Lekakou (2005) and others, we assume that (1) defines what has been called a middle statement:

- (1) Middles are generic dispositional ascriptions that predicate from a subject a set of properties that are not necessarily instantiated in a particular event.

What a middle voice construction is, then, is a particular interpretation of a (generated) morphosyntactic structure that contains a verb. The problem lies in the fact that this description is extremely vague, given that there are several conceivable ways in which this interpretation might be obtained. The statement in (2) represents our main theoretical claim in this article:

- (2) There is no designated middle structure cross-linguistically, or even inside one language. Middle is an interpretation that can be obtained through different ways and means.

This view of middles has the advantage that it can be the starting point of a theory that explains an otherwise unexpected fact of natural languages: namely, that cross-linguistically no language has ever been discovered (that we know of) that has a special morphology that is only used for middle interpretations. The empirical goal of this paper is, in relation to this point, to address the problem that in some languages middle statements are compatible with syntactically overt agents, while in other languages a middle is incompatible with a syntactic agent. We will argue that this property depends on whether the structure that each language prefers to express a middle contains an event variable or not. Some languages, like Norwegian, use a passive construction for the middle and consequently allow agents; other languages, like Swedish, use an adjectival participle construction for middles, and consequently reject agents.

To take middles as (semantic) interpretations rather than structures has been proposed, although from a slightly different perspective, previously in the litera-

1 ture, most recently in Lekakou (2008).¹ What we would like to highlight here is
 2 that the statement in (2) has obvious consequences for some of the debates that
 3 have been carried on in the literature with respect to the proper definition and
 4 treatment of middle voice constructions from a cross-linguistic perspective. In
 5 this paper we concentrate on one of the debates about middle interpretations that
 6 has received significant coverage: whether or not the thematic role of AGENT is
 7 syntactically projected in a structure interpreted as a middle. Even though there
 8 is strong agreement that middle interpretations conceptually presuppose the ex-
 9 istence of an agent, there is disagreement with respect to whether or not an agent
 10 can be overtly licensed in such structures. As we will see, most theories argue that
 11 agents are suppressed from the syntactic structure of middle voice constructions
 12 altogether (Condoravdi 1989, Fagan 1992, Ackema & Schoorlemmer 1994, 2002,
 13 Cabredo-Hoffher 1997, Steinbach 2002), while others argue that agents are, in
 14 principle, present in the structure but become unavailable as an effect of the
 15 semantic interpretation (Stroik 1992, 1999; Hoekstra & Roberts 1993) and others
 16 argue that middles are present in the syntactic structure in a similar form as they
 17 are preserved inside passives (as Lekakou 2005: §3.5.1, 2008 claims for Greek,
 18 French or Spanish, vs. Germanic languages).

19 In this paper, we adopt a compromised analysis by asserting that agents are
 20 in principle *neither* compatible *nor* incompatible with middle voice semantics.
 21 Whether the agent is syntactically available or not depends on the semantic event
 22 structure upon which the morphosyntactic requirements of a middle voice con-
 23 struction in a given language are dependent. Specifically, we argue that the pres-
 24 ence or absence of an agent is an effect of whether the structure contains an event
 25 variable or not. Our primary empirical claim is summarized in (3) below:

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27 (3) There is a positive correlation between the availability of an agent and the
 28 evidence of the existence of an event variable in the structure.

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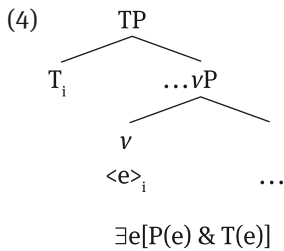
30 Consider what goes wrong – from the perspective of obtaining a middle voice
 31 reading – when a full-fledged verbal structure is projected in a declarative sen-
 32 tence. Assume, as we do in this paper, that an event becomes specific when the

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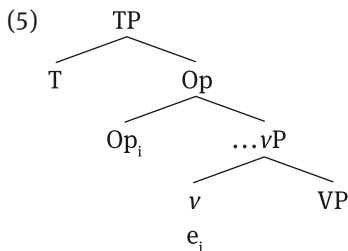
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35 **1** However, in order to derive similar patterns of data to those we will discuss here, Lekakou has
 36 to postulate, rather than derive, a division between unergativity and passivization which re-
 37 quires the assumption that derivations can be both pre-syntactic and syntactic (in accordance
 38 with lexicalist tenets, cf. Halle 1973, Williams 1981, Reinhart & Siloni 2005). In her theory, de-
 39 pending on whether aspect is grammaticalized or not, languages differ with respect to whether
 40 they suppress the agent lexically, giving an unergative verb as a result, or syntactically, getting a
 passive construction.

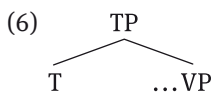
event variable is bound by Tense through existential closure, as in (4). In the normal case, when tense (T) is merged in the structure, it will license and bind this variable (cf. Roeper & Van Hout 1998), situating the event in a particular temporal interval. The interpretative effect associated with it is that the event is instantiated in a particular time, or, in other words, it is stated that the event has taken place. This is clearly the interpretation that we want to avoid in the middle statement. We assume that in such cases the event variable is satisfied and bound by existential binding.



In order to avoid this existential closure, which would trigger a reading where an event is denoted as opposed to a reading where a set of properties is predicated from a subject without any further entailment, two solutions are conceivable in principle. The first one is to introduce an operator between T and *v* that bounds the event variable and, through Vacuous Quantification (Hall Partee, Ter Muellen & Wall 1990, Kratzer 1995), bleeds existential closure by Tense.



However, the same result can be obtained if *vP* is removed from the derivation, because, assuming that the event variable is placed in *v*, in such cases there would be no event variable that could be bound.



1 There are, thus, at least two ways to reach the same result at LF – preventing an
2 event variable from being existentially closed by T. The choice between these
3 two options of arriving at that interpretation would be determined by the items
4 selected in the numeration in each case (v or no v), but also by the availability of
5 an adequate operator in that (variety of a) language that can behave as in (5). We
6 expect, thus, that there would be potentially three kinds of languages with re-
7 spect to these two ways of obtaining a middle interpretation:

- 8 i. The middle interpretation of a passive construction like (5) will be avail-
9 able for languages that have an operator with a by-virtue-of dispositional
10 semantics.
- 11 ii. The middle interpretation of an adjectival participle construction, as in (6)
12 would not be available to a language that, for whatever reason, cannot proj-
13 ect V without v .
- 14 iii. Languages that have an adequate operator and can project V without v : they
15 are predicted to be able to derive middles as in (5) or as in (6).

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17 It would be impossible, within the limits of one paper, to explore all the differ-
18 ent possible syntactic structures that could potentially license a middle read-
19 ing from a cross-linguistic, typologically-diverse perspective. For this reason,
20 we will concentrate on a small subset of cases that we believe demonstrate
21 and clarify the initial plausibility of our claims. By concentrating on two distinct
22 constructions where the linguistic evidence strongly suggests presence vs. ab-
23 sence of syntactic agents, we will be able to explore the other correlative prop-
24 erties of each structure, and see how syntax operates through different paths to
25 reach outputs, which are equivalent from the perspective of a middle voice
26 interpretation.

27 In this paper we argue that in Norwegian there are two distinct constructions
28 that can receive a middle reading, one corresponding to (6) and, crucially, an-
29 other one corresponding to (5). The properties of each one of these constructions
30 are sharply different. One of the differences is that the first, but not the second,
31 allows for an overt expression of the agent. We will show that, in correlation with
32 this, there is evidence that (7a), but not (7b) contains an event variable. Example
33 (7a) is a syntactic passive that receives a middle voice interpretation thanks to the
34 presence of the operator; (7b) is an adjectival construction where the participial
35 form is used because the event layer has been removed, from where a middle in-
36 terpretation emerges.

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- (7) a. *Dette stoffet vaskes lett av alle fordi det har en utforming som avviser skit.*
 this fabric wash-PASS easily of all because it has a composition that rejects dirt
 ‘This fabric is easy to wash by anyone because its chemical composition rejects dirt.’
- b. *Dette stoffet er lett-vaske-t (*av alle)*
 this fabric is easy-wash-ed (by all)
 Intended: ‘This fabric is easy to wash by anyone.’

Although closely related to Norwegian, Swedish, for most speakers, rejects a middle interpretation of (5), and uses the structure in (6), which fails to overtly license agents, just as (7b) in Norwegian.²

- (8) *Den här boken är lätt-läst (*av nunnor)*
 this here book-DEF is easy-read (by nuns)
 Intended: ‘This book is easy to read by nuns.’

In this paper, we provide a detailed analysis as to why Swedish appears to reject the co-occurrence of thematic agents in morphosyntactic structures associated with middle voice semantics, while Norwegian, in certain syntactic constructions, permits them.

² It has to be noted right away that the terms ‘Norwegian’ and ‘Swedish’ are idealizations, as it is always the case when one considers languages that have different varieties. In the Norwegian varieties spoken in areas where bokmål is in contact with *Nynorsk*, such as *Vestlandet*, speakers report a pattern closer to what here we describe as Swedish: the passive construction does not receive easily a middle reading, and a participial construction similar to Swedish is preferred to express a middle statement – with correlative rejection of agents. Conversely, one anonymous reviewer, presumably a native speaker of Swedish, reports that given an appropriate context s/he can accept a middle reading in a passive construction like (i):

- (i) *Den här typen av hus riv-s lätt eftersom det är gjort av papp.*
 this here type of house demolish-PASS easy because it is made of carton
 ‘This type of house demolishes easily because it is made from carton.’

What is crucial for the purposes of this article is that speakers that accept a middle reading in (i) can also express an agent overtly in that construction. Thus, while some Swedish varieties are closer to the more general situation in Norwegian and vice versa, the generalization that we explore in this article is real: the use of the passive morphology for a middle allows an agent, and the use of the participial construction rejects a middle. See Lundquist (in press) for an analysis of the different properties of -s passives in Mainland Scandinavian languages.

1 Our paper adheres to the following structure. In the next section, §2, we intro-
2 duce our main claim with respect to agent availability in structures interpreted
3 as middles semantically: agents are only available when the structure chosen is
4 essentially a verbal passive with a modal operator with a by-virtue-of semantics
5 (Lekakou 2005). If the middle interpretation is obtained by removing verbal struc-
6 ture, agents are (perhaps unsurprisingly) not available. §3 provides further evi-
7 dence for the distinct structure underlying each one of the two structures that
8 arrive to a middle interpretation. §4 shows how our two structures license equally
9 the main properties of middles. §5 takes a more detailed look at the structural
10 properties of adjectival middles and presents some speculations about why
11 Swedish accepts only one of the two construals. §6 sheds some light on the key
12 theoretical puzzle exposed by our analysis; namely, how can middle voice se-
13 mantics be assigned to two (slightly) different derivational structures? §7 con-
14 cludes this paper and presents interesting theoretical concerns and relevant re-
15 search questions resulting from our investigation discussed here.

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18 2 Agents and middles

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20 Obviously, each one of the two structures available for middle voice interpreta-
21 tion in Norwegian, (i.e. both adjectival and the one employing the lexical-*s* pas-
22 sive), comes with further consequences. Assuming, as it is standard, that the
23 event-variable introducing *vP* is the projection where agent arguments are intro-
24 duced (cf. Chomsky 1995, Torrego 1998, Folli & Harley 2007, among others), the
25 two constructions would differ with respect to the availability of agents in middle
26 interpretations. Specifically, a construction like (7a) would be able to introduce
27 agents syntactically, while a construction like (7b) might be able to still presup-
28 pose *conceptually* the existence of an agent, but will not be able to project it in the
29 syntactic structure because *vP* is missing.

30 This question – whether the construction licenses an agent or not – is one of
31 the classic issues in studies focusing on the syntax and semantics of middle state-
32 ments. It is generally agreed that middles are interpreted at a conceptual level
33 involving an agent, and that, for instance, in (10) the statement is interpreted still
34 as describing the propensity of participating in a causative event of reading, as
35 opposed to an anticausative reading like the one that *The window broke* gets.

36

37 (10) *This glass breaks easily.*

38

39 There are other interpretations, though, that emphasize how difficult it is to
40 find consistent agent properties in statements that are interpreted as middles:

Klingvall (2007), in line with Rappaport (1999), treats the English sentences in (11) as middles, independently of whether it is possible to understand a disposition to an internally caused event ('this type of glass breaks easily because its structure is unstable') or to an externally caused event ('this type of glass breaks easily when someone hits it'). Depending on the modifiers that accompany the predicate, the internally-caused reading can be selected (11b), but also the externally-caused one (11c), which is accepted by some speakers in the presence of an instrumental phrase.³ Data like (11b) suggest that the middle interpretation does not even require a conceptual agent.

- (11) a. *This glass breaks easily.*
 b. *This glass breaks when the temperature changes.*
 c. *This glass breaks with a blunt object.*

These problems – as well as the disagreements among a number of studies on this topic – are stronger when the question is directed toward the controversial issue regarding whether or not middle constructions actually project agents in their syntactic structure. A considerable part of the debate on the structure of middles concerns the exact place of projection for the potential agent (i.e., whether the agent is projected or not inside this particular structural position). The variety of analyses proposed disagree with one another in several key aspects, centrally among them whether the agent is suppressed from the verb's argument structure and conceptually inferred (Ackema & Schoorlemmer 1995) or whether it is present somehow in the structure and blocked from appearing overtly instantiated by independent mechanisms (such as the absence of eventivity in the verb's interpretation, Stroik 1999).

Our proposal in this article is that it is impossible to categorically connect agentivity with middle interpretations, because there is no clearly designated 'middle construction.'⁴ As a result of adopting this position, the middle interpre-

³ As an anonymous reviewer points out, the conceptual agent is easily available in (8c), but not entirely impossible in (11b). What is crucial for us is that (11b) can be interpreted as a middle statement even if we do not assume that an agent causes the breaking of the glass.

⁴ The proposal that there is no designated middle voice construction and middle readings emerge from independent syntactic constructions like passives. This position has other consequences that we will not explore in this paper. A significant one – and we are grateful to an anonymous reviewer for directing our attention to this – is that part of the properties of middle readings can emerge in constructions that traditionally have not been analyzed as such. In English, a sentence like (i) has two properties of middle readings: the statement does not denote a specific event, but a disposition to participate in an event – John can be a baby who has not spoken yet, but who we assume to have English as a mother tongue –, and this disposition de-

1 tation can be obtained both with and without the head that defines agents,
 2 which is tied to the presence of an event variable. Even more, one language
 3 might allow two constructions interpreted as middles, one with and another one
 4 without agents, which is the exact situation that appears to play out in modern
 5 Norwegian.

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8 **2.1 Languages with agents overtly projected with middle** 9 **interpretations**

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11 Strong evidence for the syntactic expression of an agent would be the overt pres-
 12 ence of a DP introduced by a preposition, which in other constructions involv-
 13 ing agents such as the passive is responsible for introducing agents, and with a
 14 clear entailment that the description of the properties involves the potential event
 15 being performed by that constituent.

16 In this respect, it seems inescapable that languages could vary with respect
 17 to their licensing of middle voice constructions from a morphosyntactic perspec-
 18 tive. Contrast Spanish (12a) with English (12b). Spanish speakers do not reject
 19 agents with middles, provided they are generic,⁵ but this possibility does not
 20 exist in English.

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27 _____
 28 depends on an internal property of the subject – it speaks the language given his knowledge. Other
 29 properties traditionally associated to middles are not displayed by this sentence, though: the
 30 subject is an agent, and definitely it does not denote a kind. (i) has been described as an ability-
 31 statement, that is, a sentence built with an otherwise eventive verb that is taken to mean ‘to be
 32 able to V’, with stativization of the verb (see Rothmayr 2009 for a proposal about the structure of
 33 this kind of statives).

32 (i) *John speaks English.*

33 Thus, middles are not only parasitic of different syntactic constructions, but arguably what has
 34 been described as a middle reading emerges from the combination of different, in principle
 35 independent, semantic ingredients – dispositionality, by-virtue-of, kind-denotation, non-
 36 agentive subjects, etc.

37 ⁵ More in general, Spanish only allows agents with the passive form of stative verbs to the extent
 38 that they are generic. For the relation between stativity and genericity, see Kratzer (1995) and
 39 Chierchia (1995).

39 (i) *Juan es conocido por {todos / *Pedro}*

40 Juan is known by everybody / Pedro

(12) a. *Este libro se lee con gusto por niños y* 1
 this book SE reads with pleasure by children and 2
 mayores. 3
 grown-ups 4

b. *This book reads with pleasure (*by children and grown-ups)* 5
 6

One interesting difference between English and Spanish is that Spanish uses pas- 7
 sive/non-agentive morphology in the middle statement in (12) (e.g. *se*). English, 8
 which does not use passive/non-agentive morphology to express the middle, 9
 allows for *for*-phrases to license potential agents, but not *by*-phrases.⁶ 10

(13) a. *This treatment of Norwegian middles reads easily for most linguists.* 12

b. *This car sells easily for talented salesmen.* 13

(14) **This car sells easily by talented salesmen.* 14

Some linguists, such as Stroik (1992, 1995, 1999, 2006), argue that the DP present 16
 in the *for*-phrases in (13a) and (13b) are in fact true agents, while others, such 17
 as Hoekstra and Roberts (1993), Lekakou (2005) and Klingvall (2007), maintain 18
 that rather than agent-interpretation, these DPs are better described as EXPERI- 19
 ENCERS. Under this view, the phrase *for talented salesmen* in sentence (13b) does 20
 not state that any talented salesman actually sold the car under discussion. 21
 Rather, what is stated here is that it is the car's general/generic property of being 22
 easily sold that holds for any talented salesman. As clarified by Klingvall 23
 (2007:134), "Agents are disallowed because they presuppose events, and, as 24
 stated, middles do not entail the existence of events. Although Agents are dis- 25
 allowed, Experiencers can be permitted. The Experiencer is the one for whom the 26
 property holds, and moreover corresponds to the *potential* Agent." As a result, 27
 the availability in English of what seems to be a minimal clause predicated from 28
 the agent is dependent on whether the state denoted by it can plausibly be ex- 29
 perience while taking part in the event (data from Lekakou 2005: 96): 30

(15) a. *This bread cuts easily when sober.* 32

b. *This wall paints easily when not half asleep.* 33

(16) #*This bread cuts easily when naked/sad/happy.* 35

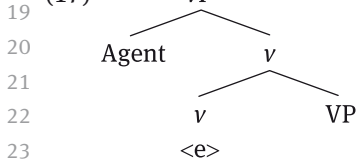
⁶ Stroik (2006, p.c.) suggests that the reason why *for*-PPs can license (potential) agents while 37
 by-PPs cannot in middle voice constructions reduces to the attachment site of these PP. Accord- 38
 ing to Stroik, *for*-PPs attach to VP whereas *by*-PPs attach to vP. The reader is directed to Stroik 39
 (2006) for more details of this analysis. 40

1 In examples (15a) and (15b), the secondary predicates specify when a particular
 2 property can be experienced. The ill-formedness of (16) is due to experiencing
 3 those states being irrelevant to a given/particular experience at the same time the
 4 properties of the grammatical subject. As such, these conditions are closely tied
 5 with the EXPERIENCER, not with the AGENT: “this means, then, that a secondary
 6 predicate does not restrict the disposition itself, although one might get that im-
 7 pression at first glance” (Klingvall 2007: 135).

8 In this paper we adhere to Klingvall’s claim and explore one of its conse-
 9 quences: *agents can only be projected syntactically when an event variable is pres-*
 10 *ent in the structure.* The immediate consequence of this claim is that there should
 11 be a positive correlation between the existence of an event variable and overtly
 12 licensing the expression of an agent. In its simplest technical implementation,
 13 this correlation can be codified if agents – perhaps as opposed to involuntary
 14 causers, Folli & Harley (2007) – are introduced as specifiers of *v*P (Chomsky 1995).
 15 Under this assumption, the functional head that defines the event variable of a
 16 predicate also simultaneously endows it with dynamicity.

17

18 (17)



25 Consequently, when *v*P is present in a structure that is eventually interpreted as a
 26 middle, agents will be available and there will be an event variable; when *v*P is
 27 absent, agents will not be available and there will be no event variable. Moving
 28 forward, throughout the remainder of this paper we will continue to refer to these
 29 units as AGENTS, rather than attempting to disambiguate the differences between
 30 “agents” and “experiencers.” This, of course, is not an attempt to sweep this im-
 31 portant debate under the rug at this time. On the contrary, we infer that the find-
 32 ings of our analysis are a step forward toward solving this puzzle, which we leave
 33 for future research endeavors.

34 As the attentive reader certainly has noted by now, our proposal and its tech-
 35 nical implementation takes side with the proposals that argue that true agents –
 36 perhaps as opposed to causers – are introduced by the same head that contains
 37 an event variable (the strong little *v* head of Chomsky 1995). We therefore part
 38 ways with the line of research started by Kratzer (1996) and continued by many
 39 other authors (see e.g. Pylkkänen 2002, Alexiadou, Anagnostopoulou & Schäfer
 40 (2006), Folli & Harley (2007), among others). However, our approach is not

necessarily incompatible with a split-*v*P view of verbs. First, some approaches, 1
 while accepting that VoiceP is an independent head, still introduce agents in *v* 2
 (Merchant 2013); secondly, it might be that Voice and *v*P can both introduce exter- 3
 nal arguments and assign to them different theta-roles (as Folli & Harley 2007 4
 suggest). Third, even if all external arguments are introduced in VoiceP (contra 5
 the empirical evidence presented in Folli & Harley 2007 or Merchant 2013), this 6
 does not eliminate the possibility that the agentive interpretation requires an 7
 event variable; other interpretations could be available if the event variable is not 8
 present, but not an agent reading. What is crucial for our proposal is that, at a 9
 syntactic level, agents (vs. causers, for instance) cannot be present in structures 10
 without a syntactic event variable. 11

2.2 Agents in Norwegian and Swedish 12

As stated in the introduction of this paper, even within the same language, 13
 middle statements can vary with respect to whether they accept or reject the overt 14
 expression of agents. Our claim is that this depends on whether passive struc- 15
 tures can also be used for a middle statement or not. Thus, a language that allows 16
 middles to carry overt syntactic agents is a language that uses passive construc- 17
 tions as one of the ways to express middles, something that is made possible by 18
 the availability of an operator that prevents an eventive reading. 19

Here we illustrate this point with Norwegian examples. In the following sen- 20
 tence (18a), a middle interpretation is obtained and the agent can be projected 21
 overtly. Notice that, as in the case of Spanish and unlike English, Norwegian uses 22
 passive morphology *-s*, which marks in Norwegian the so-called *s-passive*– in this 23
 structure. The structure of the examples in (18) is, for all intents and purposes, 24
 that of a passive construction. The middle voice interpretation in Norwegian is, 25
 thus, built over a passive construction. 26

(18) a. *Denne typen hus gjen-opp-bygge-s lett av alle.* 27
 Lit. this type house again-up-build-PASS easy of everyone 28
 ‘This kind of house can easily be rebuilt by anyone.’ 29

b. *Denne bandasjen fjerner-s lett fra huden.* 30
 this bandage-DEF removes-PASS easily from skin-DEF. 31
 ‘This bandage is easy to remove from the skin.’ 32

Some Norwegian speakers accept the sentence in (18b) to express the characteris- 33
 tics of a type of bandage that is easy to remove from the skin, and can therefore 34

1 use it in a context where it is clear that the event expressed by the verb has never
 2 taken place: for instance, when that sentence is part of the theoretical description
 3 of a new bandage design that is being submitted to a pharmaceutical company so
 4 that they consider producing it.

5 As an anonymous reviewer points out, the question is how different are the
 6 examples in (18) from passive sentences. Our claim is precisely that (18) are pas-
 7 sive structures. The syntactic structure has all the ingredients of a passive, but, in
 8 addition to it, there is an additional constituent that, as we shall see, gives rise to
 9 a middle interpretation.

10 There are two differences between the structure in the examples in (18) –
 11 passives with a middle reading – and a run-of-the-mill passive, and they are
 12 both semantic in nature. The first difference has to do with whether there is
 13 an instantiation of the event, i.e. whether it is interpreted that the event has
 14 taken place already involving those participants. A sentence like (19) is a pas-
 15 sive without a middle reading because it must be interpreted that at least some
 16 entity belonging to the immigrant class has already been identified with that
 17 database.

18

19 (19) *Innvandringer fra Spania identifiseres ved hjelp av en*
 20 immigrants from Spain identify-PASS with help of a
 21 database.
 22 database
 23 ‘Spanish immigrants are identified through a database.’

24

25 Secondly, example (19), which is a passive without a middle reading, does
 26 not have a by-virtue-of reading; that is, it does not follow from (19) that the iden-
 27 tification through a database is possible thanks to any of the internal properties
 28 of the subject. These two ingredients, namely, dispositional semantics vs. instan-
 29 tiated event and by-virtue-of readings, are made possible, in our analysis, thanks
 30 to an operator that scopes over the passive predicate, as we will see in §4. Even
 31 though both (18) and (19) are syntactically passive, the examples in (18) involve
 32 also presence of that operator.

33 Contrast the kind of passive-middle in (18) with the following sentence,
 34 also a middle statement in Norwegian, but this time, one that does not allow the
 35 projection of the agent because it does not take advantage of a passive syntactic
 36 construction.

37

38 (20) *Denne typen hus er lett-byg-d (*av alle).*
 39 this type house is easy-build-PART (of everyone)
 40 Intended: ‘This type of house can easily be built by anyone’

Although it possesses a lexical verbal passive -s morpheme, Swedish is unable to express the middle statement with this form of the verb. Example (21a) is only interpreted as a habitual statement where the event must have taken place, that is, the bandage must exist and have been habitually removed from the skin for the sentence to be true. In order to express a middle statement a copulative sentence involving a participial adjective with an adverbial modifier and the verb *to be* is used (21b); note that this is the same construction as (20) in Norwegian.

- (21) a. #*Detta förband ta-s bort lätt från huden.*
 this bandage take-PASS away easily from skin-DEF
 ‘This bandage is normally removed easily from the skin’
 b. *Den här bok-en är lätt-läst.*
 this here bok-DEF is easy-read
 ‘This book reads easily’

The sentence (21a) in Swedish is interpreted as a (habitual) passive. As, for example (21b), it is similar to the Norwegian equivalent in that it rejects the overt licensing of agents.

- (22) **Den här bok-en är lätt-läst av alla.*
 this here bok-DEF is easy-read of everyone
 Intended: ‘This book reads easily by everyone’

As we will see in §3, other properties correlate with each one of the two structures. Before moving on, we briefly discuss the acceptability of the middle interpretation with the lexical-s passive in Norwegian.

2.3 Acceptability of the middle reading of a lexical-s passive in Norwegian

The middle interpretation of the verbal structure with the lexical-s passive is not accepted equally by all Norwegian speakers and is not possible with all verbs. We conducted an experiment providing 18 native Norwegian speakers – researchers, lecturers and students – with a set of sentences where the -s form of the verb was used in a middle context to rate from 1 to 5 (with 1 being completely unacceptable; 5 being perfectly acceptable). The context was provided to the informants; they all involved situations where a habitual interpretation of the verb form was impossible, because the event clearly had not ever happened at that point. The con-

1 text was set to cases where the statement had to be interpreted as part of the
 2 project description of the properties of a non-existent entity that someone was
 3 sending a company in order to convince them of producing such a product for the
 4 first time. For instance, we provided them with a context where a researcher is
 5 trying to get funding from a company in order to build a prototype of a house
 6 made of a substance that makes it easy to rebuild in case of an earthquake. The
 7 researcher sends as part of the project description the blueprint of the house and
 8 explains:

9
 10 (23) *Denne typen hus gjenn-opp-bygge-s lett fordi det er*
 11 *this type house again-up-build-PASS easily because it is*
 12 *laget av papp.*
 13 *made of carton*
 14 ‘This type of house is easy to build up again because it is made of carton’
 15

16
 17 15 of our 18 speakers gave very high marks to this sentence in that interpreta-
 18 tion (4 or 5), although some of our informants noted that the sentence is not idi-
 19 omatic in this reading, and that they would prefer to use a *tough*-construction like
 20 (24).

21
 22 (24) *Denne typen hus er lett å gjenn-opp-bygge fordi det*
 23 *this type house is easy to again-up-build because it*
 24 *er laget av papp.*
 25 *is made of carton*
 26 ‘This type of house is easy to rebuild because it is made of carton’
 27

28
 29 The following sentence was ranked as a “5” (highly acceptable) by almost all our
 30 informants in a context where it is part of the description of a non-existing type of
 31 bandage that someone submits to a pharmaceutical company for consideration.
 32 Again, some informants noted that it is not idiomatic in their use of Norwegian,
 33 and that they would prefer a *tough*-construction.

34
 35 (25) *Denne bandasjen fjernes lett fra huden.*
 36 *this bandage-DEF removes-PASS easily from skin-DEF.*
 37 ‘This bandage is easy to remove from the skin’
 38

39 Based on our pilot research findings, the differences between speakers do not
 40 appear to be dialectal. If anything, impressionistically, younger speakers tended

to accept the construction better than older ones,⁷ but the sample of speakers interviewed is admittedly not large enough to allow for any generalization. However, the age difference seems to suggest that Norwegian, which used to be like Swedish in being unable to associate a middle reading to an *s*-passive, is moving towards a situation where this interpretation is allowed.

In light of these initial findings, we propose that there are three factors that are playing a role in the different acceptability of these structures as middle statements for Norwegian speakers. The first one is the independent availability of adjectival structures to express these statements, particularly the adjectival participle and the *tough*-construction. *Tough*-constructions are not homophonous with another kind of statement and transparently and unambiguously ascribe properties to the subject without entailing participation in an actual event.

(26) *Denne boken er lett å lese.* NORWEGIAN
 this book-DEF is easy to read

(27) *Denna bok är lätt att läsa.* SWEDISH
 this book is easy to read

In contrast, the use of *-s* also allows for a habitual passive interpretation. Plausibly, the pragmatic principle that encourages speakers to be as clear as possible in their utterances makes some of them prefer any of the two alternative solutions, if they are independently available given the grammatical properties of the verb. Some of the individual preferences seem to be related to this, with some speakers accepting the use of the vague form better than others.

A second factor that influences the acceptability of these sentences as middle statements has to do with the aspectual modifiers in the utterance. One crucial difference between the participial construction and the verbal one is that in the former there is no event variable. Based on this structural difference, when the verb contains modifiers that quantify or modify this event, the participial structure is impossible (mainly because it lacks the object that the aspectual constituent modifies) and many speakers find the verbal construction more acceptable. This is what happens with the sentence in (20), which contains both a resultative (*opp-*, ‘*up*’) and an iterative (*gjenn-* ‘*again*’). In contrast, when the verb does not contain such modifiers, as in (28), the acceptability was, in general, lower in a

⁷ 8 of the informants were between the ages of 19 and 25; these are the speakers that most systematically accepted the middle reading with the passive. However, another speaker that accepted these interpretations without problems is 63 years old, which suggest that the age data are not systematic either.

1 middle context, although it still received the evaluation mark of “4” (highly ac-
2 ceptable) for many speakers.⁸

3

4 (28) *Denne typen vogn skyve-s lett fordi den nye*
5 *this type trolley push-PASS easily because the new*
6 *modellen har en ny type hjul.*
7 *model has a new type wheel*
8 ‘This type of trolley is easy to push because the new model has a new type of
9 wheel’

10

11 The causativity or inchoativity of the verb also plays a role for some speakers.
12 Although marginally acceptable for a few speakers, example (29) received in gen-
13 eral very low grades in a middle context. In contrast, some speakers that rejected
14 (29) found example (30) acceptable as a middle statement. The difference be-
15 tween the two predicates has to do with external vs. internal causation. A car is
16 driven by an external causer, but it can start its engine based on internal proper-
17 ties of its functioning.

18

19 (29) *Denne bilen kjøre-s lett fordi denne nye modellen*
20 *this car drive-PASS easily because this new model*
21 *har et forbedret kjøresystem.*
22 *has an improved driving-system*

23

24 (30) *Denne bilen starte-s lett fordi denne nye modellen*
25 *this car start-PASS easily because the new model*
26 *har et forbedret system.*
27 *has an improved system*
28 ‘This car is easy to start because the new model has an improved system’

29

30 Almost all of our informants accepted the sentence in (31) and assigned a 5 (per-
31 fectly acceptable) to it, which is necessarily externally caused. One of the differ-
32 ences between (29) and (31) is that the verb is atelic in the first but telic in the

33

34

35 ⁸ In correlation with this, it should be noted that one anonymous reviewer reports that the two
36 native Norwegian speakers s/he consulted accepted (i), which is a version of (23) without aspect-
37 ual modifiers. Thus, aspectual modifiers might force a passive-middle, but the passive-middle is
38 available to at least some Norwegian speakers even when the modifiers are not present.

38

39 (i) *Denne typen hus bygge-s lett av alle.*
40 *this type house build-PASS easy by everyone*
41 ‘This type of house is easy to build for everyone’

former, and it expresses a change of state. Indeed, telic change-of-state or change-
of-location verbs seem to be more acceptable as verbal middle statements than
atelic verbs, for reasons that remain obscure to us.

- (31) *Dette stoffet vaskes lett fordi det har en*
this fabric wash-PASS easily because it has a
utforming som avviser skit.
composition that rejects dirt
'This fabric is easy to wash because its chemical composition rejects dirt.'

Finally, there seem to be preferences for some verbs in these constructions over
others. One of our informants, who belongs to an older generation and rejected
all the proposed examples as non-idiomatic, volunteered one verb with which
he can get the middle interpretation: *få* 'get', which can express a non-causative
event and denotes a telic change.

- (32) *Riggen er liten og veier lite, få-s lett inn i*
rig-DEF is small and weighs little, get-PASS easily in to
f.eks stasjonsvogn.
e.g. station wagon
'The rig is small and has little weight, so it is easy to get inside the station
wagon.'

It seems, therefore, that the -s construction can be used by at least some Nor-
wegian speakers as middle statements in a variety of different environments.
Admittedly, a more detailed analysis of exactly which classes of verbs (generally)
allow and disallow a middle voice reading in connection with the lexical-s pas-
sive morphology, which we leave for future research.

3 A comparison of the grammatical properties of adjectival and verbal middles

In this section we compare the grammatical properties of the verbal middle con-
struction with the passive -s morpheme in Norwegian to those of the participial
construction used in Swedish. We will see that the independent evidence sug-
gests, as we have advanced earlier in this paper, that the verbal middle contains
an event variable which is absent from the participial construction, and that – for
most Norwegian speakers – the verbal construction projects an agent. In other
words, and to be clear: the empirical evidence suggests that Norwegian can use a

1 syntactic structure that, for all intents and purposes, corresponds to a passive.
 2 The passive construction, even in the context of a middle interpretation, is able to
 3 project an agent and contains an event variable. The middle reading, as we will
 4 argue in the next section, is built over this passive construction by introducing an
 5 operator that is responsible for preventing that the event variable is bound by
 6 tense.

7 Consider, for starters, an example such as (33), which can be interpreted as a
 8 middle statement for younger speakers of Norwegian. Here, the middle is marked
 9 through the verbal affix *-s*, which attaches to verbal bases. The question at this
 10 juncture is how many verbal projections are present in the middle reading.

11

12 (33) *Denne typen hus gjenn-opp-bygge-s lett (fordi det er*
 13 *this type house re-up-build-PASS easy because it is*
 14 *laget av papp).*
 15 *made of paper*

16 ‘This type of house is easily rebuildable because it is made of paper.’

17

18 First of all, it seems that the verb to which the *-s* attaches includes the syntactic
 19 projection that introduces the agent, at least for some speakers. Direct evidence
 20 of this comes from the fact that these Norwegian speakers accept an overt prepo-
 21 sitional phrase (34a) interpreted as the agent of the potential event and, crucially,
 22 marked with the same preposition that introduces the agent in other cases (34b).

23

24 (34) a. *Denne typen hus gjenn-opp-bygge-s lett av alle.*
 25 *this type house re-up-build-PASS easy by everybody*
 26 ‘This type of house is easily rebuildable for everyone.’

27 b. *Denne boken ble skrevet av Ibsen.*
 28 *this book was written by Ibsen.*

29

30 Contrast the situation with English (35), where the preposition used in such cases
 31 is one used to mark the beneficiary. This shows that one cannot claim that mid-
 32 dles always contain, or always lack, syntactic agents. Thus, the contrast provides
 33 support for the idea that something structural takes place in Norwegian to allow
 34 the presence of an agent: we claim that it is precisely that Norwegian, but not
 35 English, uses a passive structure.

36

37 (35) *This kind of book reads well for university teachers.*

38

39 What about Swedish? Swedish cannot interpret the verbal passive construction
 40 as a middle and uses an adjectival structure composed of a participle and an

adjective meaning ‘easy’, ‘difficult’, ‘fast’, ‘slow’ or other predicates whose conceptual semantics allows them to be taken as predicates of actions. This modifier is compulsory, and without it the sentence cannot get a middle interpretation.

- (36) a. *Den här boken är lätt-läst.*
 this here book is easy-read
 ‘This book is easy to read.’
- b. *Varm metall är mera lätt-hamrad.*
 warm metal is more easy-hammered
 ‘Warm metal hammers easier.’
- c. *Stora väggar är inte så lätt-målade.*
 big walls are not so easy-painted
 ‘Big walls don’t paint easily.’

As pointed out by Klingvall (2007, §6.1.1; 2011), the Swedish middle employs a passive-like structure where a past participle is present.⁹ We demonstrate here that Swedish exhibits empirical evidence that suggests that this construction contains a very impoverished verbal structure. In fact, we directly follow Klingvall’s (2007, 2012) analysis of Swedish middle voice constructions,

⁹ Klingvall (2007: 128) points to an observation originally put forward by Sundman (1987) that in limited, unproductive environments Swedish exhibits a construction that strongly corresponds to an English-type middle:

- (i) *Den här boken säljer väldigt bra.*
 this here book-DEF sells very well
 ‘This books sells very well.’

Although this construction is fairly unproductive in Swedish, it can be used to create structures related to middles, which Klingvall (2007, Chapter 5) refers to as Instrumental dispositions (from Klingvall 2007: 129):

- (ii) *Den här kvasten borstar bra.*
 this here broom-DEF sweeps well
 ‘This broom sweeps well.’
- (iii) *Den här maskinen syr bra.*
 this here machine-DEF sews well

Note, however, two properties of these constructions, which leave them outside of the scope of this paper. First, crucially for our purposes, it does not contain passive morphology. Secondly, the subject is not a (semantic) object, but a non-animate initiator of the event described. The object is interpreted generically and the subject easily allows a type-reading, properties which suggest presence of a generic operator, but

- ‘This [sewing] machine sews well.’

1 where she asserts that the construction displays the properties of an adjectival
2 participle.

3 Compare the availability of overt agents in Norwegian with the following data
4 that suggest that the adjectival construction cannot project an agent (example
5 35b from Klingvall 2007: 138). Other modifiers are possible, like a beneficiary, but
6 it is not possible to introduce an agent PP marked as such.

7

8 (37) a. *Den här bok-en är lätt-läst (*av nunnor)*

9 this here book-DEF is easy-read (by nuns)

10 b. *Den här uppsats-en är lättläst (*av mig)*

11 this here paper-DEF is easy-read (by me)

12

13

14 3.1 Evidence for presence or absence of an event variable

15

16 In correlation with the availability or lack thereof of an overt agent, we have phe-
17 nomena that diagnose for presence or absence of an event variable.

18 Even though both constructions – the passive and the participial – are mor-
19 phologically built from verbs, the verbal construction in Norwegian displays the
20 expected behavior of the units that contain an event variable, while the participle
21 structure used in Swedish behaves as expected from a unit that does not have it.
22 One first reason that indicates this is that the verbal middle can combine with QPs
23 that quantify over events.

24

25 (38) *Denne typen produkt bruke-s med hell mange ganger*

26 this type product use-PASS with success many times

27 *før det må bli erstattet.*

28 before it must be replaced

29 ‘This kind of product can be used with success many times before it must be
30 replaced.’

31

32 The sentence in (38)¹⁰ is accepted by the Norwegian speakers that allow *s*-middles
33 in the reading where given the properties of this new kind of product – a cleaning
34 flannel that has not been produced yet – it can be used with success a number of

35

36

37 ¹⁰ An informal query done by one anonymous reviewer – whom we thank here – confirms this
38 pattern. Other quantifiers also give acceptable results with the passive-middle in Norwegian:

39 (i) *Denne typen produkt bruke-s med hell {gjentatte ganger / ofte}...*

40 this type product use-pass with success {repeated times / often}

times before it has to be replaced. In this reading, there is clearly a quantifier over the events in which the subject can potentially take part.

Compare this with the participial construction used in Swedish. There is evidence here that the participle does not include in its denotation any event variable and displays the expected behavior of a qualitative adjective, which denotes qualities rather than states. Note first that the participle can combine with degree modifiers unavailable for verbs.

(39) *Den här boken er väldigt lätt-läst.*
 this here book is very easy-read

In contrast, Swedish middles do not appear to license event quantification. In the same intended meaning of (38), the event quantifier *mange ganger* ‘many times’ is not allowed (cf. 40). This is an instance of Vacuous Quantification: the operator does not find an appropriate variable under its scope. Some Swedish speakers can interpret the modifier as degree, meaning ‘extremely’, but none accepts the reading where an event repeats many times (i.e. a repetitive reading).

(40) *Den här sortens produkt är (*mange ganger) lätt-använd.*¹¹
 this here type product is many times easy-used
 Intended ‘This type of product can be used several times.’

One could hypothesize, in contradiction to the analysis we present here, that perhaps what is ungrammatical in (40) is related to the stative or atelic nature of the participial construction. A consideration of other data involving event quantification shows that this cannot be the explanation. Rothstein (1999: 364 et seq.) shows that verbs, even stative verbs, have event variables that can be quantified over, in contrast to adjectives. Remember that states are both atelic and non-dynamic. Consider the minimal pairs in (41) and (42).

(41) a. *The witch made her love the prince every time he drops in to visit.*
 b. **The witch made her fond of the prince every time he drops in to visit.*

(42) a. *The witch made her know Latvian three times.*
 b. *The witch made her clever three times.*

¹¹ Similarly, other quantifiers also give negative results with this construction, as again one anonymous reviewer tested (whom we once again thank for his/her efforts):

(i) **Dette stoffet er lett-vasket {gjentatte ganger / ofte}.*
 this fabric is easy-washed {repeated times / often}

1 In (41), we see a clear contrast between having a stative verb embedded under
 2 *make* and having an adjective: only the first can be used as a variable under the
 3 scope of the temporal quantifier. In (42a), the sentence is ambiguous; the most
 4 salient reading is one in which there has only been one spell making someone
 5 know Latvian one day and forget it after a while, then know it again and forget
 6 it again, then know it again. That is: the adverbial expression can quantify over
 7 the stative verb, which means that it contains a variable. It can also, as expected,
 8 quantify over the verb *make*, meaning that there were three separate spells of
 9 making her know Latvian. However, in (42b) the reading is necessarily that there
 10 are three different spells, each one of them making her clever, and we cannot
 11 interpret that there is only one spell. This is expected if the adjective does not
 12 contain any event variable.

13 What this suggests is that nothing prevents stative verbs from being quanti-
 14 fied over. Note that the predicate *know Latvian* is, presumably, an individual-level
 15 stative predicate (Carlson 1977/1980), and even in that case, quantification is pos-
 16 sible. Given this background, we conclude that the contrast between (38) and (40)
 17 is related to the verb / adjective contrast, and that, even if the participle in (40) is
 18 derived from a verb, it lacks one crucial ingredient of verbal predicates: an event
 19 variable. We will return to this issue later, as this will lead us to a minimal modi-
 20 fication of Klingvall's analysis of adjectival middles.

21 The absence of an event variable in the participial middle in contrast to its
 22 presence in the verbal one is also visible in the co-occurrence with aspectual pre-
 23 fixes and particles. In Norwegian, we have already seen an example where the
 24 verbal middle statement hosted two aspectual markers (43).

25 (43) *gjen-opp-bygge-s*
 26 again-up-build-PASS

27
 28 This was one of the examples that our Norwegian speakers assigned high marks
 29 to, and it contains two different kinds of modifiers that operate over the aspectual
 30 structure of the verb. The prefix *gjen-* 'again' can invoke either a restitutive or a
 31 repetitive meaning. Interestingly, and in contrast with *igjen* 'again', *gjen-* requires
 32 the presence of an event in the structure. *Gjen-* is ungrammatical with stative
 33 verbs such as *elsker* 'to love' in example (44a), even though one could expect a
 34 reading where a state is restituted in such cases – a reading that is available with
 35 *igjen* 'again' (44b) (see von Stechow 1996 for a proposal about *wieder* 'again', the
 36 German equivalent of this adverb).

37
 38 (44) a. **Jeg gjen-elsker det.*
 39 I re-love it.
 40 Intended: 'I love it again'

- b. *Jeg elsker det igjen.* 1
 I love it again 2
 'I love it again' 3

This property is also shared by other repetitive / restitutive prefixes in other languages, cf. English and Spanish *re-*. This suggests that repetitive / restitutive prefixes require an event to be present in the structure, and therefore can be taken as a diagnostic for the presence of an event variable. 4

- (45) a. **I re-love it.* 10
 b. **Me re-gusta.* 11
 me re-likes. 12
 Intended: 'I like it again' 13

The second kind of modifier that operates over aspect does so only over the result state, and measures its extent. The particle *opp-* 'up' provides the event a completeness meaning, i.e. a result attained in its full amount; in (43), it entails that the state of being built has been attained to its maximal degree, or, in other words, that the entity is now completely built. 14

In Swedish, we observe a contrast between these two kinds of aspectual modifiers in the adjectival participle construction with a middle reading interpretation. Example (46) shows that both modifiers are available in a participial construction without a middle interpretation. 15

- (46) *Hundkapps hus åter-upp-byggt efter branden.* 25
 greyhound house re-up-built after fire 26
 'Greyhound house rebuilt after fire' [sverigesradio.se, August 20, 2010] 27

In participles with a middle voice reading, Swedish also accepts modifiers that operate over the extension of the state, such as *bort* 'away' and *upp* 'up'.¹² 28

- (47) a. *lätt-bort-tvätta-d* 32
 easy-away-wip-ed 33
 'easy to wipe away' 34
 b. *lätt-av-tvätta-d* 35
 easy-off-wip-ed 36
 'easy to wipe off' 37

¹² We are grateful to an anonymous reviewer for directing our attention to this contrast. 38

- 1 c. *lätt-upp-bygg-d*
 2 easy-up-built
 3 'easy to build up'

4

5 That is, in Swedish participial middles, modifiers of the state are gram-
 6 matical. The grammaticality of such examples, which contain more than one con-
 7 stituent to the left of the participle, also suggests that there are no (morphologi-
 8 cal) constraints dictating a maximal size to the participle.

9 In contrast, and crucially for our purposes, a repetitive / restitutive prefix like
 10 *åter* 're' is not acceptable in such contexts (contrast with example 44 above).

11

12 (48) **lätt-åter-upp-bygg-d*

13 easy-re-up-built

14 Intended: 'easy to rebuild completely'

15

16

17 Example (49) presents, again, a contrast that shows that *åter-*, acceptable as
 18 modifier of other participles, is impossible when there is a middle interpretation.

19

20

21 (49) a. *Åter-konstruera-d gaskammare i Auschwitz.*

22 re-build-PART gas-chamber in Auschwitz

23 'Rebuilt gas chamber in Auschwitz' [Picassa, July 4, 2010]

24

25 b. **lätt-åter-konstruera-d*

26 easy-re-build-PART

27 Intended: 'easy to rebuild'

28

29 This contrast suggests that a property that *åter-* requires is absent from a par-
 30 ticiple with middle reading. This property, given the other patterns, is presum-
 31 ably the presence of an event variable. Consequently, this suggests, again, that
 32 participles interpreted as middles in Swedish lack an event variable, while they
 33 keep the state interpretation that licenses modifiers like *upp* or *bort*.

34 To summarize, in this section we have motivated two differences between the
 35 Norwegian verbal middle and the Swedish adjectival middle:

36 a. The Norwegian verbal middle shows the behavior expected of a structure that
 37 contains an event variable, but the Swedish middle does not, but displays the
 38 behavior of an adjective.

39 b. For some Norwegian speakers at least, the verbal middle can project an overt
 40 agent marked by a preposition, but this is not accepted by any Swedish
 speaker in the adjectival participial construction.

4 Passives and middle readings

In this section we present our analysis for the Norwegian examples. We argue that the data presented and discussed earlier in this article are explained in a straightforward manner if Norwegian is able to build middle interpretations over the syntactic structure that is originally used as a passive. The difference between a run-of-the-mill passive construction and the middle reading built over the same passive has to do with whether tense binds the event variable or not. In a normal passive construction, there is an entailment that an event takes place at a particular temporal interval because tense binds the event variable; in minimal contrast, the middle reading is obtained when an operator is introduced between the event (placed at v) and tense (place at T), preventing the latter from binding the former. We have provided evidence that the Norwegian verbal middle construction, in contrast to the adjectival middle, contains an event variable, which can be bound by quantifiers (cf. 36); this correlates with the availability of an agent.

We assume that the functional head responsible for introducing the event variable is v (cf. Harley 1995; it has received other labels in the literature; e.g. Proc in Ramchand 2008) and the one responsible for the agent is Voice (Kratzer 1996; Init in Ramchand 2008). Presence of a full verbal structure would introduce an event variable, on the assumption that the verb is eventive.

4.1 Mood prevents T from licensing the verb's event

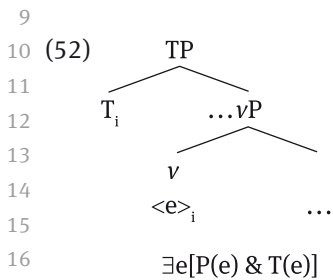
Following commonly held generative assumptions regarding the structure and composition of the verb phrase (Chomsky 1995), we assume that vP is a projection that introduces an event variable and an agent (see also Emonds 2000). This head is above VP, which we assume contains the internal argument in a Larsonian-shell structure (Larson 1988), and can be dominated by Voice and Mood.

(50) [vP [Agent] v < e > [VP V [Internal argument]]]

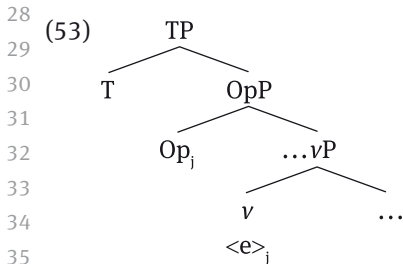
In its current condition, this structure above (47) will not satisfy the requisites of middle voice semantic requirements, because, crucially, in this configuration the agent is hierarchically higher than the internal argument. *Ceteris paribus*, the agent will move to TP and become the subject of the clause. This would block the middle interpretation, which crucially implies ascription of a disposition to a non-active participant in a potential event. Thus, the middle reading will not be possible, if vP introduces an agent, unless passive VoiceP is introduced above vP .

(51) [_{VoiceP} Voice⁰ [_{vP} v^0 < e >]]

1 The presence (or absence) of the event $\langle e \rangle$ contained in v is crucial in our analy-
 2 sis. In the normal case, when tense (T) is merged in the structure, it will place this
 3 variable (cf. Roeper & Van Hout 1998), situating the event in a particular temporal
 4 interval. The interpretative effect associated with it is that the event is instantiat-
 5 ed in a particular time, or, in other words, it is stated that the event has taken
 6 place. This is clearly the interpretation that we want to avoid in the middle state-
 7 ment. We assume that in such cases the event variable is satisfied by existential
 8 binding.



18 This representation in (52) is not the structure of a middle statement. We follow
 19 Lekakou's (2005) proposal that verbal middles involve the presence of an opera-
 20 tor with modal meaning at the verbal level (a *by-virtue-of* operator, OpP). This
 21 operator directly dominates VoiceP. As is presumably the case with any other oper-
 22 ator, it requires a variable to bind, or else a Vacuous Quantification violation
 23 will take place. The modal finds the event variable within its scope domain and
 24 binds it. This has the result of converting the event into a derived stative, since
 25 now the set turns to denote a dispositional ascription of the derived subject
 26 (Lekakou 2005: 90–99).



37 Furthermore, tense cannot place the event directly. Existential binding cannot
 38 take place due to the fact that the *by-virtue-of* operator already binds the event.
 39 What tense places in the temporal axis in this case is the set of properties that the
 40 sum of the operator and the event denote: the meaning is, therefore, the time

period during which the disposition can be ascribed to the subject. Consequently, when the modal is present there is no entailment that the event has taken place.

According to this analysis, the anchoring of the event to the utterance is different in a verbal middle statement and in a non-middle statement. Following Enç's (1987) Anchoring Condition, the event must be related to some salient reference point in the utterance. Ritter & Wiltschko (2005) and Amritavalli & Jayaseelan (2005) propose that, in some cases, this anchoring does not use the time axis, but can be done through person or mood, among other possible options. In the case of a middle statement, the anchoring, we suggest, takes place in the modal domain: the set of accessible worlds, from the world where the utterance is produced, where the subject has the properties ascribed to it.

From this explanation, which explores one consequence of Lekakou's analysis of middles, it follows that if the event variable is present and we want to obtain a middle reading, then the modal must necessarily combine with the verbal projection before Tense does.

Note that the syntactic position of the by-virtue-of operator must be lower than the one occupied by deontics. The reason is that – even though not considered traditionally as a middle – the ingredients of a middle reading can be introduced by modals such as *can* in its deontic interpretation. The following Norwegian example illustrates this:¹³

(54) *Denne typen bandasje kan fjerne-s let fra huden.*
 this type bandage can remove-PASS easy from skin-DEF
 'This type of bandage must be removed gently from the skin.'

It has been argued by several scholars in the literature that deontic modals are merged in a very low position in syntactic structure (Picallo 1990, Brennan 1993, Cinque 1999, Butler 2003). If at least one of them can combine with a verbal predicate in a middle reading, it follows that the by-virtue-of operator should be even

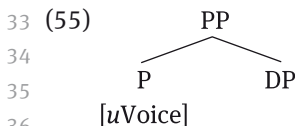
13 As an anonymous reviewer points out, the dispositional semantics is lost with other deontic modals, like *must*. This is entirely true: the previous example contrasts with *This type of bandage must be removed (#easily) from the skin*, where there is no entailment that the obligation emerges from the internal properties of the subject and in fact the presence of a modifier favors an epistemic reading. What this might suggest is precisely that a modal like *must* occupies exactly the same structural position required by the by-virtue-of operator. Thus, when one appears, the other must be necessarily absent. If true, and contrasting this to *can*, it would provide evidence of an approach like Cinque (1999), where the area between T and v is fine-grained and has designated positions for different kinds of modifiers.

1 lower. We suggest, thus, that it immediately dominates the highest verbal projec-
 2 tion. In any instance, for our analysis it is only crucial that the operator is in a
 3 position between *v* and T. That the by-virtue-of operator occupies a position in
 4 this area is also independently motivated by Lekakou's (2005) observation that
 5 the availability of the operator interacts with the aspectual morphology available
 6 in the language; this result follows if the operator is introduced adjacent to the
 7 area where external aspect is defined.

10 4.2 Passive voice

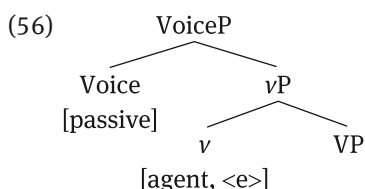
12 The way in which Norwegian and Spanish produce this interpretation is through
 13 passive morphology. This choice follows naturally from the interpretation of a
 14 middle statement. A middle statement predicates from an object a disposition
 15 to participate in an event where an agent might participate. Precisely, the kind
 16 of verbal structure that allows the notional object to turn into a subject and pre-
 17 serves a position for the agent is that of a passive. It is not surprising, therefore,
 18 that passive structures are among those commonly used to build middle interpre-
 19 tations cross-linguistically.

20 The crucial aspect of this example is that the preposition *av* 'of' is also used
 21 to introduce the agent in passive statements. Aside from this context, it can be
 22 used in a variety of meanings, such as possession or origin, but it can only be in-
 23 terpreted as introducing an agent in passives and middles constructions. The fact
 24 that the agent interpretation is only available in passives – and therefore, in those
 25 passives with a modal operator that can be interpreted as middles – deserves
 26 some explanation. We contend that the interpretation is possible in passive sen-
 27 tences because they contain Voice – Schäfer (2008) arrives at the same conclu-
 28 sion discussing different, but related, evidence. More specifically, we will assume
 29 that the agent interpretation of *av* involves checking of a [*u*Voice] feature con-
 30 tained in the prepositional phrase's head. This agentive version of *av* is, there-
 31 fore, only available when the structure contains Voice.

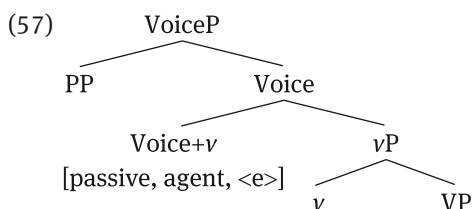


38 Although the technical details of how passive voice is obtained are orthogonal to
 39 our main claim and immediate goals of this paper, we will briefly present, for the
 40 sake of explicitness, how we assume the derivation would work in these cases.

Passive marked voice would select a defective version of v , which is unable to project a specifier, although its capacity of defining a constituent as agent will not be suppressed.



Given that v still must assign a theta role, it will head-move to Voice, where the specifier will be projected.



4.3 The modifier

The final element inside a middle statement is the adverbial modifier. Here we show that its obligatoriness across the constructions we have inspected and analyzed in this article is consistent with claims about its connection to agents made in the literature.

Lekakou (2005: 141–161) convincingly argues that languages can be divided into two classes. The first class, exemplified by French or Spanish, employs passive morphology to codify a middle voice statement. This correlates with the fact that the adverb is not necessary to express a middle statement; it can be absent, and in such cases pragmatics dictates whether the statement is informative enough without that modifier.

- (58) *Le papier se recycle.*
 the paper SE recycles
 ‘The paper is recyclable.’ [Fagan 1992]

The second class of languages consists of those that do not use passive morphology, such as English. These languages must have an adverbial in order to allow

1 for a middle reading. Even with focalization of the verb, the sentence in (59) is
 2 ungrammatical as a middle: it can only be interpreted as a habitual statement
 3 with an implied object.

4

5 (59) #*Bureaucrats BRIBE*.

6 [Lekakou 2005: 148]

7

8 The reason for this correlation is, according to Lekakou's analysis, that in order to
 9 interpret a statement as a middle, an agent distinct from the derived subject must
 10 be interpreted/inferred. The adverb is necessary in order to recover the agent
 11 when it is not activated syntactically: the intended experiencer of the property
 12 denoted by the adverb is identified with the agent. For instance, in a middle voice
 13 statement like *Such books read easily*, the experiencer of the easiness is identified
 14 as the agent of the potential reading event. Languages that use passive morphol-
 15 ogy do not need the adverb because they syntactically activate the agent (in our
 16 proposal, licensed through a Voice projection), but those that do not use passive
 17 morphology suppress the agent from the syntax, making the use of the adverb
 18 necessary to recover it.

19 Norwegian neatly falls in the same class as French and Spanish, as expected
 20 if, as we argue, the agent is projected inside the structure. The adverb is not nec-
 21 essary to obtain the middle reading. An adjunct *av*-phrase is already enough, pro-
 22 vided it is interpreted as generic or arbitrary.

23

24 (60) *Denne typen hus gjen-opp-bygge-s av alle.*

25 this type house again-up-build-PASS of everyone

26 'This type of house is rebuildable by everyone.'

27

28 In (61), the sentence also allows a middle interpretation, along the lines of 'this
 29 kind of fabric is such that it must be washed'.

30

31 (61) *Dette stoffet vaske-s.*

32 this fabric wash-PASS

33 'This fabric must be washed.'

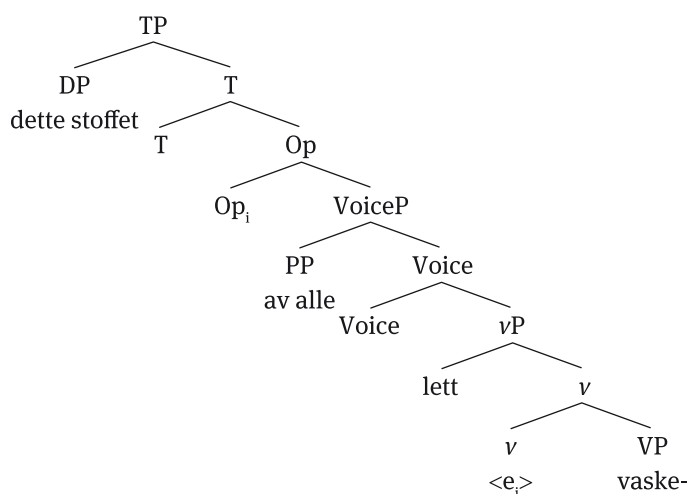
34

35 Lekakou's analysis is consistent with the Norwegian data, and its contrast with
 36 English. Moreover, one straightforward prediction of our analysis, once we adopt
 37 Lekakou's stance on the adverbial modifier, is that if passive morphology, and
 38 therefore Voice, is missing from the structure, the adverbial modifier will become
 39 compulsory. This is precisely what happens in the adjectival middles, which
 40 Swedish must use and Norwegian can optionally choose to use (or not). The

crucial fact here is that the middle interpretation of the participle cannot be obtained unless there is an additional modifier of the participle that can introduce conceptually an experiencer that can be identified with an intended agent (which we discuss in more detail in the next session). In connection with this observation, we have a structure where the verbal projections v and Voice must be absent in order to obtain a middle reading, with the result that the agent is not licensed syntactically. Consequently, the adverb is necessary in order to recover the agent.

The structure in (62) represents the complete structure of a verbal passive with middle interpretation in our proposal.

(62) a.



b. *Dette stoffet vaske-s lett av alle.*
 this fabric wash-PASS easy by everyone

With this in mind, let us now move to the structure of the adjectival construction interpreted as a middle voice construction.

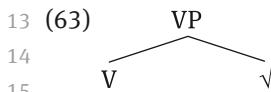
5 Adjectival participles and middle readings

The tests that we presented in §3 show that there is evidence that two components are missing with respect to a more fledged verbal structure in the case of the adjectival middle: there is no event available and there is no agent. What this means in our analysis we put forward here is that both vP and VoiceP are missing. This has severe consequences for the derivation. Given that vP is missing, there is no event variable, and therefore, no danger that T will bind it and trigger a specific reading of the event. Consequently, no modal operator is necessary in the struc-

1 ture. In line with the previous work on middles in Swedish (cf. Josefsson 2005;
 2 Klingvall 2007, 2012), we adopt Klingvall’s proposal that the middle voice con-
 3 struction in Swedish (and its Norwegian participial equivalents – which Klingvall
 4 2012: 2 calls ‘Complex Dispositional Adjectives’) consists of a past participle
 5 right-handed segment and a modifying left-handed segment. The left-handed
 6 segment of this compound unit, as we demonstrate below, is normally a bare
 7 root. Of course, there are subtle, yet distinct differences in the notational system
 8 that we employ compared to Klingvall’s analysis. We discuss these in detail (when
 9 relevant) below.

10 Let us follow the derivation of the adjectival middle structure step by step. A
 11 root is categorized via a lexical verbal projection, V in our representation.

12



16

17 Unlike the verbal structure, now *vP* is not introduced, so no event variable is
 18 present and there is no entailment that an event took place, explaining that this
 19 structure behaves as expected of an adjective, in the sense that it lacks an event
 20 variable and a fully-fledged argument structure. This ultimately explains that
 21 such constructions reject prefixes like *åter-* ‘again’, which require an event, but
 22 allow state-modifying particles like *upp-* ‘up’. If correct, this supports the verb-
 23 decompositional proposals where the lowest verb layer (here VP) denotes a state
 24 (Larson 1988, Ramchand 2008, among many others).

25 Note, however, that we part ways with Klingvall’s analysis in a crucial aspect
 26 In line with Marantz (1997), Klingvall’s uses a light-headed projection *v* in order to
 27 determine the categorical status of the underspecified \checkmark ROOT. Under these as-
 28 sumptions, although the root in question here is initially merged under *v*, it must
 29 undergo head-movement to *a* (for the sake of phi-feature incompatibility).¹⁴ For
 30 our analysis, the presence of a light verb head (*v*) is problematic, for in Klingvall’s
 31 analysis it does not only serve the function of determining the categorical status

32

33

34 **14** Note, however, that in later work (Klingvall 2012: 17, ex. 32), the proposal is revised avoid-
 35 ing the incorporation of the root to *a*. We think this move is also problematic for independent
 36 reasons – as we think any structure containing two independent functional categorizers would
 37 be: without the incorporation, adjectival inflection should emerge between the modifier and the
 38 participle (contra the data); stating this ordering requirement through a morphophonological
 39 rule is unsatisfactory to the extent that then the ordering between a stem and its inflection could
 40 be obtained by two different means (incorporation and morphophonological reordering), against
 parsimony and causing serious trouble for acquisition.

of the underspecified root, but also stands as an event variable that can possibly be bound by T (which is obviously an unwanted situation for middle voice constructions). Therefore, we part ways with Klingvall's analysis with regard to this point and eliminate the presence of the verbal light head in our analysis.

Our proposal is to divide the two roles that *v* plays in Klingvall's analysis into two distinct heads: *V* to categorize the root and *v* to introduce the event variable. There is independent evidence for this separation. The main one has to do with the possible presence of overt verbalizer affixes inside object nominalizations and other structures without event meaning (see also Borer 2012).

- (64) a. *big calc-ifíc-ation-s*
 b. *not-ifíc-ation-s*
 c. *author-iz-ation-s*
 d. *left-headed nomin-al-iz-ation-s*

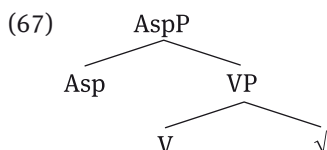
The presence of an overt verbalizer that can be segmented from the base shows that some head has to be present in order to turn the word into a verb at some stage, but the behavior of such nominalizations shows that there is no event variable. As noticed frequently in the literature (e.g. Grimshaw 1990, Alexiadou 2001) such nouns do not license aspectual modifiers.

- (65) **We had in the pocket [two authorizations during two weeks].*

If the categorization role was performed by the same head that introduces the event variable, then we would expect that overt verbalizers disappear in the object reading of the nominalizations, but this is not the case. Similarly, in adjectival middles, overt verbalizers can be present, but there is no event variable.

- (66) *lätt-konstru-era-d*
 easy-build-verb-PART

A second difference between Klingvall's analysis and our own is that we propose that VP is dominated by an (external) aspect projection, which is lexicalized as the participial morphology (in accordance with Schoorlemmer 1995, Embick 2004).



1 Next to the results provided in the cited works, consider the following pieces
 2 of evidence in favor of associating the participle morphology with an aspectual
 3 head vs. the alternative of associating it to an adjectival structure. Consider exam-
 4 ple (68), where the participle is a noun modifier, a context where presumably the
 5 higher verbal projections are necessarily absent:

6
 7 (68) *en konstruera-d miljö*
 8 a build-PART environment
 9 ‘a built environment’
 10

11
 12 The meaning obtained is a resultative: an environment that has been built.
 13 Now, in this context the morphology tells us that we have a participle, and the
 14 semantics tells us that we have an aspectual meaning – a state, and more-
 15 over, a state that is interpreted as following the culmination of an event. In
 16 its verbal use (69), when there is a rich set of functional verbal heads present
 17 in the structure, the same morphology is still associated with an aspectual
 18 meaning.

19
 20 (69) *Jeg har konstruera-d en miljö.*
 21 I have build-PART an environment
 22

23
 24 Thus, with or without higher verbal projections (manifested in 69, among other
 25 things, through the presence of the auxiliary), the participle carries a stative as-
 26 pectual meaning, which, in the right configuration, can be interpreted as a result.
 27 These data suggest that participial morphology is closely related to aspectual in-
 28 formation, while whether the constituent is verbal or adjectival depends on other,
 29 in principle independent, ingredients of the structure (see Bruening in press for a
 30 recent proposal). Compare our proposed structure with Klingvall’s. At this step in
 31 the derivation, Klingvall (2007: 144) analyzes these participles as adjectival com-
 32 pounds whose head is the first (leftmost) constituent. In her proposal, an adjecti-
 33 val head lexicalized as the participial morphology would be merged (70a) with
 34 the structure in (63). The root corresponding to *lätt* merges as an adjunct to the
 35 resulting AP (70b). The ‘verbal’ root would move to V^0 and the resulting set, to A^0 ,
 36 obtaining the right order.

37
 38 (70) a. [_{AP} √ [_{AP} A⁰ [_{VP} V⁰ . . .]]]
 39 b. *lätt-* -t *läs*
 40 easy Part read

Our proposed modification does not affect the spirit of Klingvall's proposal, as far as we understand it.¹⁵ The minimal difference is that the participle morphology is a manifestation of aspect, not of an adjectival head, which implies treating aspect as a cross-categorial property, a decision that we do not take as implausible. This does not prevent an adjectival head to merge over AspP, as Klingvall suggests. The modifier would be introduced in the highest projection, and we do not see any reason to reject her proposal that it is an adjunct. Being a root, Klingvall's approach can explain that agreement is blocked. In (71) we see that neuter gender is marked morphologically in Swedish when the adjective *svår* 'difficult' is introduced in a full-fledged adjectival environment.

(71) *Det här manifestet är {*svår / svår-t}* SWEDISH
 the here manifest is difficult

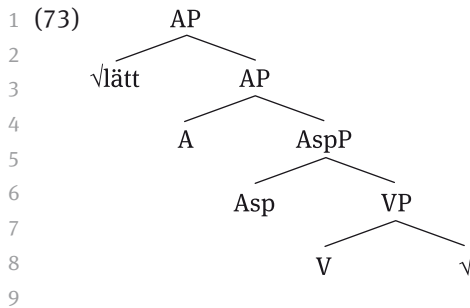
However, in the adjectival middle, this agreement is blocked:

(72) *Det här manifestet är {svår /*svår-t}-läst*
 the here manifest is difficult-read

The absence of agreement can be explained if the adjective does not project any further functional structure, however there is another possibility compatible with Klingvall's analysis (and the aspects of it we adopt) that we would like to shortly present. Assume, for the sake of the argument, that agreement is instantiated in the head of the only projection present here, A. In contrast with standard cases of adjective formation, however, the root is not introduced here as a complement, so it cannot undergo head movement to A⁰. If the lexical items introduced to lexicalize agreement are morphophonologically weak and need to be supported by a root, then in this syntactic configuration they would be unable to materialize phonologically, because the root cannot support them, being in the specifier position.

With this in mind, our proposed structure for adjectival middle voice constructions is the following:

¹⁵ In fact, in Klingvall (2012) a move is adopted that is very similar to our modification: the participial morphology is dissociated from aP.



10 Crucially for our purposes, the structure lacks an event variable. This means
 11 that introducing the modal is not necessary to prevent tense from binding this
 12 variable, which explains why the structure is available in Swedish (and inde-
 13 pendently, in Norwegian).¹⁶

14 One important remaining question at this juncture is the role that the mod-
 15 ifier plays in this structure. As we anticipated in the previous section, assuming
 16 Lekakou's analysis of the modifier as an element necessary to identify an agent,
 17 given the absence of *v* and Voice in this structure, it is expected to be compulsory
 18 to interpret the participle as a middle predicate. This assumption is confirmed:
 19 Removing the modifier forces a resultative passive reading (*This manifest is al-*
 20 *ready read*).¹⁷

21

22 (74) *Det här manifestet är läst.*

23 the here manifest is read

24 'This manifest is read'

25

26 The modifiers are, generally, roots meaning 'easy', 'difficult', 'quick', 'slow'
 27 and others whose conceptual entry is a property of actions and events. This is

28

29

30

31 ¹⁶ An alternative variation of Klingvall's (2012: 17) structure (and ours) would be to propose that
 32 the adjectival nature of the construction is not defined by the presence of an adjectivalizer, but
 33 is obtained by default due to lack of information about events and agents in the structure. In
 34 that case, the modifier could be introduced as an adjunct of AspP. In order to decide between
 35 these two proposals, a thorough study of adjectival participles vs. verbal participles would be
 36 necessary.

37 ¹⁷ Another contrast in Norwegian shows that the role of the modifier is to recover conceptually
 38 the agent: *lett-vasket* ('easy-washed') can have a middle interpretation, but *ny-vasket* ('newly-
 39 washed') does not. This contrast is expected if the role of the modifier is to recover at the concep-
 40 tual level a syntactically-absent agent which experiences the properties denoted by it. An agent
 would experience the easiness of the washing, but not – while being the agent – that it is newly
 washed.

expected if they need to conceptually recover an agent: they allow for the interpretation, at the conceptual level, of an event which has an intended agent identified with the experiencer of the property denoted.

Note that saying that these modifiers allow an agent to be recovered, and are restricted to those that can modify an event, is not the same thing as saying that they require an event in the syntactic structure they are introduced in. There are indeed examples that show that the adjectives do not need an event variable in their syntax, but trigger the interpretation that the modified element is somehow related to an event and there is an intended agent of such event. In the example in (75), they directly modify an object denoting noun, and the interpretation that there is some kind of event associated to this noun, and an agent that experiences the speed, is still triggered.

(75) *fast food*

This is consistent with the revised version of Klingvall's structure that we proposed above. In the adjectival middle construction, structurally, there is no event variable and no projection to license an agent in the syntax. The presence of the manner modifier is crucial to allow the interpretation of the participial adjective as involving some agent (an assumption that Klingvall's proposals also concur with). As in other cases where some syntactic structure is missing (Marantz 1997), the conceptual meaning of the roots involved in the construction can allow – not force – interpretations which are otherwise licensed by the structure. There is no position to introduce the agent in this structure, but this does not mean that an agent cannot be inferred from the conceptual entry that the root has. Speakers know that the action denoted by *läs*- 'read' is one that must be performed by a sentient and volitional individual, and therefore will infer – even in the absence of specific syntactic structure – that such agent exists. The agent will necessarily not refer to a specific individual, because it is left unspecified by the verbal projections; this is a second way in which an agent can become generic in a middle statement.

Given the proposed structure, the reason why both Swedish and Norwegian can express a middle statement with an adjectival participle are clear: for some reason, Swedish cannot license the verb with a middle operator, but if the verbal structure is projected as a participle that lacks *v*, and thus an event variable, the middle operator is not necessary in order to express a disposition not instantiated in any particular situation. Even though Norwegian has an exponent that lexicalizes the middle operator, it can, as well, express a middle statement by suppressing the verbal event variable and the structure that carries it.

6 Deriving the semantic properties of middles from different structures

To wrap up our analysis, we now show that both structures discussed in this paper satisfy the established criteria regarding what general properties have been considered in the literature defining the (morpho)syntactic and semantic properties of middle voice constructions.

Following Lekakou (2005: 90 et seq.) we classify a middle statement as a generic dispositional ascription that predicates a set of properties from the grammatical subject without entailing that they are instantiated in any event. In a statement like *Such books read easily*, the semantic interpretation infers, for a whole class of books, it is true that they have the properties necessary to be read easily, even – and this is crucial – if the reading event has never been instantiated with this particular kind of books. Syntactically, these statements share with passives the property that the grammatical subject is semantically an internal argument, but they contrast with them in that in passives it is entailed that the event takes or has taken place (*Such books were read easily*). Even though they also involve genericity, habitual statements are different from middles in that, again, the existence of events is entailed, i.e. such books are (generally) read easily.

A middle structure denotes a potential situation dependent on the properties of the grammatical subject, i.e. that is, they are by-virtue-of statements. Thus, middles behave like stative predicates, even though they must be built over verbal roots that license an event reading. This property has consequences for temporal marking in some languages. For instance, in Spanish, middles, which are built with the clitic *se* – which like Norwegian *-s* also has a passive use – are different from impersonals or passives. Impersonal constructions and standard passives in Spanish can also be constructed with the same clitic, and importantly, they are restricted to imperfective tenses (present and imperfective past, for instance). As evidenced below in (76), passives and impersonals in Spanish can use the perfect tenses (perfect and indefinite past), but not if the statement has to receive a middle reading (Mendikoetxea 1999).

- (76) a. *Esas camisetas se lava-ba-n bien.* SPANISH
 those shirts SE wash-IMP.PAST-3PL. well
 ‘Those shirts were washed well’ (passive) or
 ‘Those shirts washed well’ (middle)
- b. *Esas camisetas se lava-ron bien.*
 those shirts SE wash-PERF.PAST.3PL. well
 ‘Those shirts were washed well’

Stativity is a necessary consequence of the two structures that we have presented 1
and analyzed here. In the case of the lexical-s passive structure interpreted as 2
middle in Norwegian, stativity is obtained by means of a modal operator. Indeed, 3
as it is well-known, modal auxiliaries can have the consequence of stativizing an 4
eventive predicate (see Smith 1997, Boneh & Doron 2009, Rothmayr 2009 for re- 5
cent overviews). Several tests confirm this point: First, modal auxiliaries reject 6
the progressive periphrasis, which requires eventivity. 7

(77) **Juan está pudiendo escribir inglés.* SPANISH 8
Juan is being-able to write English 9
Intended: ‘Juan is being able to write English’ 10
11

Also, modal auxiliaries reject imperatives, as their stativity makes it impossible 13
for the agent to control an event. 14

(78) **¡Puede escribir inglés!* 15
can.IMP write English 16
Intended: ‘Be able to write English!’ 17
18
19

As for the participial structure, stativity follows from the absence of a vP projec- 20
tion that introduces an event variable. An auxiliary *be* is part of the clausal struc- 21
ture, but this auxiliary lacks any event variable; consequently, stativity is a neces- 22
sary property. 23

Secondly, as noted by Lekakou (2005), the ‘by-virtue-of’ relation codified by 24
middles is restricted to internal arguments. Accordingly, sentences whose gram- 25
matical subject is an AGENT or a CAUSER do not allow for middle interpretations. 26
The sentence in (79a) is interpreted as a habitual, while the sentence in (79b) is a 27
middle statement. In other words, (79a) cannot be interpreted as ‘John has a pre- 28
disposition to plant grass seeds, but has never done so’. 29

(79) a. *John plants grass seeds.* 30
b. *This kind of grass seed plants easily.* 31
32
33

The verbal structure that Norwegian can use with a middle interpretation con- 34
tains passive voice, similar in many respects to morphosyntactic conventions 35
used in Spanish middles (as demonstrated above). The presence of Passive Voice 36
is crucial, because its role is to prevent the projection of the agent as a DP, and 37
therefore, makes it uninterpretable as a grammatical subject. This has as a conse- 38
quence that the internal argument is the only eligible DP, so it becomes the sub- 39
ject of the clause. 40

1 As for the participial construction, in this structure, vP is not projected.
 2 Given that vP is the structure that introduces the agents, there is no agent DP that
 3 c-commands the internal argument. As a result, the internal argument will be-
 4 come the grammatical subject of the clause.

5 Our view that middles are not designated structures has an interesting pre-
 6 diction in this domain. Passive Voice is necessary when vP is projected because
 7 without it the agent would become the subject of the clause. Now, if the verb that
 8 is used in the structure is unaccusative in nature, passive voice will not be neces-
 9 sary to let the internal argument become the subject of the clause. If we assume
 10 that introducing agents is a property of strong v , as it is standard in (most instan-
 11 tiations of) Minimalism, a defective v – such as the one that an unaccusative verb
 12 has – will not introduce an agent, and it will be compatible with a middle reading
 13 without a Voice-projection, provided the operator is also introduced.

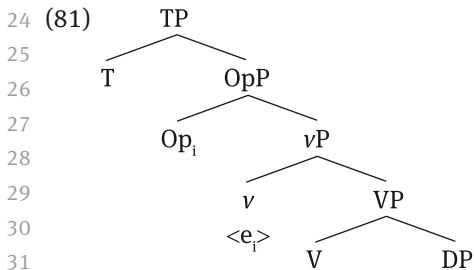
14 This prediction is borne out. Native speakers of Norwegian report that exam-
 15 ple (80) allows for a middle interpretation.

16

17 (80) *Denne boken brenner lett.*
 18 this book burns easily
 19 ‘This book burns easily’
 20

21 In our analysis, these verbs would have an ‘anticausative’ structure, with a defec-
 22 tive v that does not introduce an agent argument.¹⁸

23



33 Let us take a second to consider the consequences of the claims we present in this
 34 section. The mapping of “middle voice semantics” does not obligatorily require
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36

37 **18** Our claim about the structure used frequently for English middles would be the same as for
 38 this Norwegian example: English uses in such cases an anticausative version of the verb, where
 39 v is defective and does not assign an agent role. From here it would follow (a) the unavailability
 40 of by-phrases, as the theta role is not assigned by vP in such cases; (b) the obligatoriness of mod-
 ifiers that help recover the missing argument, necessary for the conceptual interpretation.

the absence or presence of functional heads specifically designated for the licens- 1
 ing of “agents” or the overt presence of an event variable. A Voice-projection must 2
 be present if vP introduces an agent, because otherwise the agent would become 3
 the grammatical subject of the clause, something which is not compatible with a 4
 middle interpretation at LF. The critical component here is the result of the deri- 5
 vational, i.e. the resultant morphosyntactic product from derivational composi- 6
 tion, and its connection with semantic licensing at LF. In particular, the final der- 7
 ivational step in the construction of middle voice statements seems to be utmost 8
 importance: At this point in the derivation it is clear whether or not the grammat- 9
 ical subject possesses (or does not) an agentive theta role and whether or not the 10
 clause should be interpreted as with stative semantics (i.e. lacking an event vari- 11
 able). This, of course, can be obtained in a number of ways, depending on the 12
 theta role structure of the verb, its aspectual information and the availability of a 13
 by-virtue-of operator in that language. Consequently, constructions that we deem 14
 to be ‘middle voice constructions’ are only valid with respect to their semantic 15
 denotation, because, as we have argued here, it is not possible to designate par- 16
 ticular morphosyntactic units as exclusively “middle voice constructions.” 17

7 Conclusion and future directions 18

To summarize the core tenets of our analysis presented here, we argue on both 22
 conceptual and empirical grounds that languages appear to lack designated mor- 23
 phosyntactic structures, which are exclusively reserved for middle voice seman- 24
 tics. Natural languages lack a construction that can be called a ‘middle structure’, 25
 and, instead, other structures are used that – through different means – license a 26
 dispositional reading. In our abbreviated analysis of two typologically similar 27
 languages, namely, Norwegian and Swedish, we took a closer look at adjectival 28
 middles as well as those that can be formed in Norwegian with the lexical-s 29
 passive. 30

Although this brief analysis provides some insight into the behavior of mid- 31
 dle voice constructions in Mainland Scandinavian languages, significant ques- 32
 tions remain, most notably with respect to what the absence of designated mor- 33
 phosyntactic units to license middle voice semantics tells us about the nature 34
 of (morpho)syntactic knowledge and its connection to structural semantics. 35
 What determines whether a language has a by-virtue-of operator, and therefore, 36
 whether a passive construction can receive a middle reading? What other proper- 37
 ties can be derived from this? We have not explored, either, the alternative possi- 38
 bility that middle semantics is never due to a designated operator: in that view, 39
 the middle construction would be deconstructed and its different ingredients – 40

1 genericity, dispositionality, role of the internal properties of a non-agentive
2 subject – would be independent of each other, and obtained through possibly
3 different means. This interesting alternative should be explored in future work.

4 In some respects, this set of questions requires us to develop a working hy-
5 pothesis concerning the relevant atomic units of “language” and how these units
6 are assembled in a meaningful way. Following proposals by Hinzen (2012), Stroik
7 & Putnam (2013) and some versions of Distributed Morphology,¹⁹ a promising
8 avenue of research envisages lexical items to be composed meaning sub-atomic
9 units that are not subjected further to syntactic or semantic decomposition. For
10 the sake of explication, we refer to these units here as EXPONENTS and label their
11 interpretive sub-components as FORMAL FEATURES (to follow more or less stan-
12 dard generative convention terminology). Adopting the relatively uncontroversial
13 axiom that natural human language is combinatorial in nature, the findings
14 presented here suggest that we, as a field, need to revisit how these combina-
15 torial rules work – especially with regard to similar structural and semantic prop-
16 erties where there is considerable overlap. This scenario is apparent and pres-
17 ent in agent-less constructions such as passives, middle voice constructions and
18 anticausatives. In some respects, it is quite challenging to determine exactly
19 where the boundaries between these related structures and meanings should be
20 demarcated.

21 A further consequence of our findings, and in line with the theoretical
22 scenario presented immediately above, is that some meaning properties com-
23 monly assumed to may not exist (solely) at LF. According to the theoretical de-
24 siderata we have sketched out here, the computational system must derive the

25

26

27 **19** The crucial property of these theories is the assumption that the lexicon belongs to the per-
28 formance systems, and that lexical items are associated with structured bundles of features. This
29 allows us to recast the problem of whether an operator is available in terms of whether a lexical
30 item has been built that contains the operator features as part of its endowment. The differences
31 between these theories emerge in some of the details, crucially in (a) whether lexical items can
32 contain uninterpretable features and (b) whether the internal complex structure of a lexical item
33 is accessible or not for the syntactic derivation. While Distributed Morphology assumes that
34 the internal structure of lexical items is directly accessible, Hinzen and Stroik & Putnam inde-
35 pendently propose that after bundling they become atomic units; i.e. they might be complex in
36 terms of their bundling, but they become atoms with respect to their interaction with syntax.
37 Hinzen differs from Stroik & Putnam with respect to the relation between semantics and syntax
38 in so far that Hinzen proposes a system where syntax completely determines semantics, while
39 Stroik & Putnam argue that syntax builds interpretable structures from completely interpretable
40 lexical items. Consequently, Hinzen assumes a system where roots are category-free, while Stroik
& Putnam argue that category features are contained in roots and they are precisely what allows
them to interact with the syntactic derivation.

interpretation of the morphosyntactic directly from the derivational structure. If the ability to introduce quantifiers and determine scope resided outside of the computational system, this would have to be parameterized for individual languages and language families, because, based on the empirical evidence we present here, Swedish would be unable to license this in ways that appear to be accessible to the Norwegian grammar.

Finally, we must consider the theoretical ramifications of why Swedish cannot license a verbal middle construction. As we have suggested in previous work (Fábregas & Putnam 2013), at some point in its linguistic development, Swedish (for whatever reason) failed to lexicalize the combinatorial value of features – both morphosyntactic and semantic in nature – that result in a middle voice semantics combining with an event variable: the by-virtue-of operator that prevents Tense from binding the event variable. Once again, it appears that the most promising line of research stemming from our empirical findings and our conceptual treatment of these interesting data is that explorations into the lexicalization of features to form larger meaningful units will provide insight into the macro- and micro-variation found within and across languages.

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