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Middles and Nonmovement

Peter Ackema
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Analyses for English and Dutch middles have been proposed where the verb's internal θ -role is assigned to the object, which moves to subject position, and where the subject θ -role is also assigned to a syntactic element (analogous to analyses of passive). We argue that no NP-movement takes place in middles and that the middle verb's grammatical subject (the logical object) is its external argument. We discuss the invalidity of arguments for the syntactic presence of the logical subject and two arguments against NP-movement in middles. These concern the correctness of the observation that in a middle only an argument of the corresponding transitive can occur as the grammatical subject and evidence that middle verbs in Dutch are unergatives.

Keywords: external argument, middles, NP-movement, passive, unergative

When compared to an ordinary transitive sentence like (1), the middle construction in English and Dutch on an observational level shares two basic characteristics with the passive: the subject argument of the transitive does not appear overtly in an argument position in a middle or passive, and the object argument of the transitive now appears as the grammatical subject. Examples are given in (2) (passive) and (3) (middle).

- (1) Harry paints these walls.
- (2) These walls are painted.
- (3) Walls paint easily.

Given this similarity, it is not surprising that analyses for English and Dutch middles have recently been proposed that are very similar to the more or less standard Government-Binding Theory analysis of passives, in particular those in Hoekstra and Roberts 1993 (henceforth H&R) and Stroik 1992. According to these analyses, the verb's subject θ -role is assigned in syntax in middles as well as passives, although not to a lexical NP in subject position, but either to *pro* in VP-internal subject position (H&R) or to *PRO* adjoined to VP (Stroik). The internal θ -role is regularly assigned to the object, which is consequently moved to the derived subject position by Move α . The S-Structure repre-

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sentations assigned to a middle like (3) by H&R and by Stroik are then as in (4) and (5), respectively.

(4) [_{IP} walls_i [_{I'} I [_{VP} pro [_{V'} paint t_i easily]]]]

(5) [_{IP} walls_i [_{I'} I [_{VP}[_{VP}[_{V'} paint t_i easily]] PRO]]]

In this article we will argue that, despite appearances, the analogous changes in grammatical relations in middle formation (MF) and passive formation should not be derived in the same fashion. Without further discussion we will assume an analysis for passives involving the syntactic presence of the logical subject and movement of the object (for discussion, see Jaeggli 1986, Baker, Johnson, and Roberts 1989), but we will argue that no NP-movement takes place in middles. The middle verb's grammatical subject (the logical object) is its external argument and is generated in the D-Structure subject position (which we assume to be VP-internal). The S-Structure representation we propose for (3) then is as in (6).

(6) [_{IP} walls_i [_{I'} I [_{VP} t_i [_{V'} paint easily]]]]

In this article we will deal with some arguments raised in the literature to support (4)/(5) (as opposed to (6)). In section 1 we will make the case that the arguments that have been adduced in favor of the syntactic presence of the middle verb's logical subject in English and Dutch do not go through.¹ In sections 2 and 3 we will argue against the occurrence of NP-movement in English and Dutch middles. Specifically, in section 2 we will discuss traditional arguments to this effect, concerning the fact that in the derivation of a middle it is only an argument of the corresponding transitive that can occur as its grammatical subject. In section 3 we will discuss evidence concerning the behavior of middle verbs with respect to some unaccusativity diagnostics in Dutch. The discussion

¹ We will mainly be concerned with factual evidence for (4)–(6) here, but (4) and (5) both raise some conceptual problems as well, having to do with the licensing of pro/PRO. For instance, (5) conflicts with the PRO Theorem, despite Stroik's (1992) claim to the contrary. There are two potential governors for PRO in (5), I and V. Stroik defines government as in Chomsky 1986; that is, α governs β iff α m-commands β and there is no barrier for β that excludes α . Now, according to Stroik, V cannot govern PRO in (5) because V does not m-command PRO in VP-adjunct position. The maximal projection VP dominates V, but not PRO, because not every segment of VP dominates PRO. Hence, V cannot govern PRO because VP does not dominate PRO. On the other hand, Stroik argues, I cannot govern PRO because the non-L-marked VP is a barrier between I and PRO. However, precisely because VP does not dominate PRO, thus preventing government by V, it cannot be a barrier for PRO. Chomsky's (1986:14) definition of barrierhood, cited by Stroik in his footnote 9, is as in (i).

- (i) γ is a barrier for β iff (a) or (b):
 a. γ immediately dominates δ , δ a blocking category (BC) for β
 b. γ is a BC for β , γ is not IP
 where γ is a BC for β iff γ is not L-marked and γ dominates β

The relevant part here is the last: "and γ dominates β ." Because VP does not dominate PRO under a definition of domination based on inclusion, VP cannot be a BC for the VP adjunct PRO and consequently cannot be a barrier either. Thus, either dominance is defined in terms of nonexclusion, in which case VP dominates PRO in (5) so that V can govern PRO, or dominance is defined in terms of inclusion, in which case VP does not dominate PRO in (5) so that I can govern PRO. Either way, the structure violates the PRO Theorem.

will lead to the conclusion that middles should be derived at some presyntactic level.² However, in this article we will not fully work out our own proposal along these lines; for details, we refer the reader to Ackema and Schoorlemmer 1994.³

1 The Syntactic Presence of the Logical Subject Argument

As noted in the introduction, middles and passives share the property that the logical subject is not the grammatical subject. Here, however, the similarity ends. It is well known that in passives the logical subject, though apparently not a syntactic argument, is syntactically much more “active” than it is in middles (see Keyser and Roeper 1984: 407, Roberts 1985:363, also Manzini 1983, Roeper 1987). For instance, it can license agentive adverbs, *by*-phrases, and purpose clauses, all of which are impossible in middles; see (7)–(8).

- (7) a. The wall was painted on purpose.
 b. The wall was painted by Harry.
 c. The wall was painted to protect it against the rain.
- (8) a. *Walls paint easily on purpose.
 b. *Walls paint easily by Harry.
 c. *Walls paint best to protect them against the rain.

In order to explain the passive facts, it is assumed in many analyses of the passive that the verb’s subject θ -role is assigned in syntax, for instance to the participial morphology (Jaeggli 1986:592, Baker, Johnson, and Roberts 1989:220). The most straightforward account for the syntactic inertia of the logical subject in middles then seems to be the assumption that syntactic projection of this argument does not take place there, as op-

² A movement analysis could of course be correct for middles in some languages; our claim is only that English and Dutch are not among them. (The Italian middle might differ from the English one precisely in this respect; see Cinque 1988:564—but see Di Sciullo 1990 for a different view.) Arguments for movement in English middles have of course been given before, notably by Keyser and Roeper (1984). However, Fagan (1988) shows that most of the characteristics of middles that Keyser and Roeper cite as evidence for a movement analysis follow straightforwardly from their noneventive nature.

³ A brief summary of that article follows here. We adopt a model of grammar in which the semantic arguments of a predicate are projected to syntax from a level of Conceptual Structure (CS) (basically following Jackendoff (1990)). Crucially, such projection is optional in principle. Following Fagan (1988, 1992), we argue that the logical subject argument of a middle is semantically present (at CS), but is not syntactically projected, which is allowed because it is a semantically arb(bitrary) argument. We show that the logical subject must be an Actor in Jackendoff’s (1990) sense in order for this to be possible. We propose a principle that says that a verb can never lose its capacity to assign an external θ -role, as a result of which the logical object argument of the middle verb becomes its syntactic external argument. Combining this principle with ideas about argument projection according to which projection to syntax takes place in accordance with a thematic hierarchy (see Grimshaw 1990), this means that when a verb’s usual subject argument is not projected to syntax, as in a middle, the hierarchically next highest argument in its CS will project as an external argument; there is no externalization of a designated argument (like Theme). This view on the derivation of middles allows for explanations of the Affectedness Constraint on MF, including some exceptions to it. It also accounts for the existence of both impersonal and adjunct middles in Dutch and explains the fact that not all adjuncts can appear as subject in adjunct middles, whereas impersonal middles seem fully productive.

posed to what happens in (4) and (5). H&R assume that all semantic arguments of a verb are obligatorily projected in syntax, but they do not give any empirical evidence for the syntactic presence of *pro*, the bearer of the verb's subject θ -role in their analysis. On the contrary, they introduce a special licensing mechanism for this *pro* in English and then state that *pro* that is only licensed by this type of licensing is not syntactically active (H&R 1993:190–192). In other words, they introduce a syntactic element that does not syntactically manifest itself. We will not try to disprove this part of H&R's theory. Stroik, however, does give several pieces of evidence to show the syntactic presence of PRO. These will be discussed in the remainder of this section. We will conclude that no compelling evidence is provided for the presence of PRO.⁴

1.1 Binding

Stroik's (1992) central argument for (5) is based on anaphor binding. Stroik notes that the (grammatical) subjects of middles can contain anaphoric expressions. He gives examples like the following (his (6a–b) and (11)):⁵

- (9) a. Books about oneself never read poorly.
 b. Letters to oneself compose quickly.
 c. The poets admired one another so much that even each other's worst work actually seemed to read well.
 d. Those women were amazed, but each other's books seemed to them to read surprisingly well.

Stroik argues that these anaphors need to be bound in accordance with Condition A of the binding theory. However, no proper antecedent is available at S-Structure (the possibility that an arbitrary PRO in the specifier position of the subject NPs functions as an antecedent is ruled out by Stroik (1992:130–131) on the basis of arguments with which we concur). Following Belletti and Rizzi (1988:314), Stroik assumes that Condition A is an "anywhere" condition, one that may be satisfied at any level of representation. This means that the anaphoric expressions in (9), lacking an S-Structure antecedent, can be

⁴ Arguments similar to the ones we provide in sections 1.1 and 1.2 have been put forward in Zribi-Hertz 1993, which appeared while this article was under review.

⁵ Stroik also cites the following (his (6c) and (9b)):

- (i) a. Arguments with oneself generally end abruptly.
 b. The candidates disagree so much that today's negotiations with each other will surely end abruptly.

These are not middles, however. The verb *end* here is the inchoative variant, as in (ii).

- (ii) The negotiations ended yesterday at 5 P.M.

Inchoatives, but not middles, allow an event reading with specific time reference (Keyser and Roeper 1984:384). These examples cannot be middles, because *abruptly* does not combine with middles, as shown in (iii).

- (iii) a. *Bureaucrats bribe abruptly.
 b. *This wall paints abruptly.

Since inchoatives do not have the semantically implicit argument that middles have (see Keyser and Roeper 1984:384, H&R 1993:186), the fact that (ia–b) allow the same reflexives/reciprocals as the middle examples in (9) is in itself an argument against Stroik's approach.

licensed if they have a D-Structure antecedent. Since the sentences are grammatical, apparently the assumption must be made that there is an argument c-commanding the NPs containing the anaphors at D-Structure. In the D-Structure representation (5), which Stroik argues for, this is the case: the logical object is a D-Structure object and the logical subject is structurally represented as PRO, c-commanding the object. Of course, if the logical object were a D-Structure subject, as in nonmovement analyses like (6), binding would be impossible.

This problem for nonmovement analyses is only an apparent one, however. This is because the anaphors in (9) are in fact all logophors (or “exempt anaphors” in the terminology of Pollard and Sag 1992), which do not need a syntactic antecedent, as we will now show.

Reinhart and Reuland (1993) and Pollard and Sag (1992) argue that the conditions governing syntactic binding apply only to elements that are arguments of the same predicate, so-called coarguments of a predicate. Restricting our attention to the binding condition relevant here, Condition A, Reinhart and Reuland (henceforth R&R) argue that it should read as in (10) (1993:671, (12’)).

(10) *Condition A*

A reflexive-marked predicate is reflexive.

The terms *reflexive marking* and *reflexive predicate* are defined as follows (R&R’s (11’)):

- (11) a. A predicate is *reflexive* iff two of its arguments are coindexed.
 b. A predicate (formed of P) is *reflexive-marked* iff either P is lexically reflexive or one of P’s arguments is a SELF anaphor.

An anaphor is a SELF anaphor if it is a complex expression (such as Dutch *zichzelf*, which contrasts with simplex *zich*). R&R do not discuss the distribution of reciprocals, as in Stroik’s examples (9c–d), but they assume that it is essentially similar to that of SELF anaphors (apart from some additional constraints on reciprocals discussed by Heim, Lasnik, and May (1991)). Crucially, reciprocals can be used logophorically, just like SELF anaphors (see Pollard and Sag 1992, (7a,e,i,j)).

Condition A, in combination with the definitions in (11), entails that if one of the arguments of a predicate is an anaphor,⁶ then that argument must be coindexed with another argument of the same predicate; in other words, it must be bound. However, if the anaphor is not an argument, Condition A has nothing to say about it. In that case, it falls outside the scope of syntactic binding theory. (The same conclusion is reached by Pollard and Sag (1992:271): “[W]e conclude that nonsubject coargument anaphors are the only anaphors that should be constrained by [Condition] A.”) This means that anaphors that do not themselves constitute arguments, but that for instance are embedded in an argument, need not be syntactically bound; these are what R&R call logophors. Consider for example (12a) and (12b) (R&R’s (26b) and (26a)).

⁶ Where *predicate* must be understood as ‘syntactic predicate’ in R&R’s (1993:678) sense.

- (12) a. *Max boasted that the queen invited himself for a drink.
 b. Max boasted that the queen invited Lucie and himself for a drink.

In (12a) the anaphor is an argument of *invite*. Being a SELF anaphor, it reflexive-marks this predicate (see (11b)). According to Condition A in (10), this predicate must then be reflexive, so *himself* should be coindexed with its coargument *the queen* (see (11a)). Such coindexation is impossible, since it would lead to a clash in gender features; therefore, the sentence is ruled out. In (12b), on the other hand, *himself* is not an argument of *invite*—it is embedded in an argument of this predicate, *Lucie and himself*, which is not itself a complex anaphor. It follows that in this case the predicate is not reflexive-marked and consequently Condition A does not require the anaphor to be syntactically bound (Condition A has nothing to say about this sentence), as indeed it is not in (12b).

Now, all of Stroik's examples involve anaphors inside NPs (see (9)). Following Ross (1970) and Jackendoff (1972), R&R note that such anaphors—like the one in (12b)—show logophoric behavior, as predicted by their theory. The following examples show that anaphors inside NPs need not be syntactically bound (in (13a–b) there is no antecedent at all; in (13c–d) the intended antecedent does not c-command the anaphor):

- (13) a. Physicists like yourself are a godsend. (R&R's (23a), from Ross 1970)
 b. Persons like myself should not aspire. (Uriah Heep)
 c. The picture of himself that John saw in the post office was ugly. (R&R's (46a), from Jackendoff 1972)
 d. Her pleasant smile gives most pictures of herself an air of confidence. (R&R's (46b))

Also, compare (9) and (14).

- (14) a. Books about oneself can bring much grief.
 b. Letters to oneself usually stink.
 c. The candidates disagree so much that pictures of each other make them angry.
 d. The poets admire one another so much that even each other's pictures give them joy.

All of these cases involve ordinary (in)transitive verbs with underived subjects and no implicit arguments; nevertheless, the same NPs containing the same anaphoric expressions can occur in subject position in this environment just as well as in (9). No covert D-Structure binder being present in (14), this shows that as expected, these cases involve logophors rather than bound anaphors. It follows that the examples in (9) cannot serve as an argument for the presence of a syntactic binder of the anaphor and consequently cannot serve as an argument for the presence of PRO in middles.

1.2 Experiencer PPs

Many middles can contain a *for*-PP with an Experiencer argument, as in (15) (Stroik's (12)).

- (15) a. That book read quickly for Mary.
 b. No Latin text translates easily for Bill.

The argument in this PP seems identical to the logical subject argument of the middle verb. In different ways, both Stroik and H&R take this to be evidence for the syntactic presence of the middle verb's logical subject argument.

H&R (1993:192–194) argue that, apart from formal licensing (see above), *pro* needs content licensing. This is achieved by θ -identifying *pro* with the Experiencer θ -role, which H&R assume to be assigned by the adverb (*easily*, etc.). This means that the presence in a middle of an adverbial that can take an Experiencer argument is crucial for H&R's analysis. However, middles are also acceptable when they contain (for example) negation, modals, or focus intonation, none of which have an Experiencer argument (see Hale and Keyser 1986:14, Roberts 1985:422, Fagan 1988:200–201).⁷ Thus, whereas the middle in (16a) can be paraphrased as (16b), comparable paraphrases are impossible for the middles in (17a), as (17b) shows.

- (16) a. This wall paints easily for Harry.
 b. It is easy for Harry to paint this wall.
 (17) a. This wall won't paint./This wall PAINTS . . . (phew!).
 b. *It is not for Harry that this wall paints./*It IS for Harry that this wall paints.

Stroik (1992:132, fn. 5) rejects an analysis according to which these *for*-PPs express an argument of the adverbial. He assumes the NP in the *for*-PP to be the overt counterpart of his PRO argument. If this assumption is correct, the phenomenon constitutes direct evidence for his analysis.

The problem with this assumption is that it is both too weak and too strong. It is too weak in that identical *for*-phrases occur in nonmiddle sentences without any implicit argument, as (18) shows.

- (18) a. That book is too thick for Mary.
 b. As far as translation is concerned, no Latin text poses a problem for Bill.

Just as in (15), in (18) the arguments in the *for*-phrases are necessarily construed as the reader and the translator, respectively. Yet the examples in (18) are not middles. The possibility of a *for*-phrase in the sentences in (15) therefore appears to be independent of the presence of the middle context.

Stroik's assumption that the *for*-phrase is the overt realization of the syntactically present logical subject argument of the middle verb is also too strong. As his analysis holds that this argument is syntactically present in every middle and that the PP is nothing more than an overt manifestation of this argument, we would expect such a PP to be

⁷ If θ -identification is taken to be as defined in Higginbotham 1985, as H&R claim they do, then θ -identification between *pro* and a θ -role is impossible in any event because *pro* is not a θ -role. *Pro* is (supposed to be) assigned a θ -role, which is therefore saturated by assignment and not by identification. If the middle verb's external θ -role were identified with another θ -role, this would mean that it was saturated in this way and therefore could not be assigned (either to *pro* or to anything else) (see Higginbotham 1985:564). This would be compatible with (6), rather than with (4)–(5).

possible in every middle sentence. This, however, is not the case ((19b) is based on example (17) in Fagan 1992:247).⁸

- (19) a. These books don't sell (*for the average shopkeeper).
 b. (on shoe chest:) Stows on floor or shelf (*for tidy people).

What enables an Experiencer *for*-phrase to occur in a middle is not entirely clear to us; as mentioned in footnote 8, there seems to be considerable variation in judgments. What is clear, however, is that this phenomenon does not depend on a middle verb's purported ability to project its logical subject argument in syntax: nonmiddle sentences without an implicit argument sometimes allow identical Experiencer *for*-PPs, whereas middles with an implicit argument sometimes do not allow them.

1.3 Control

According to Stroik, the syntactic presence of PRO in a middle functioning as the implicit argument is corroborated by the fact that it is able to control the subject PRO of an embedded infinitival, as in (20) (Stroik's (18)).⁹

- (20) a. Most physics books read poorly PRO_k [even after PRO_k reading them several times].
 b. Potatoes usually peel easily PRO_k [after PRO_k boiling them].
 c. Bureaucrats bribe best PRO_k [after PRO_k doing them a favor or two].

Now, as is well known, PRO can be syntactically controlled but need not be (see Williams 1980). This is noted by Stroik himself concerning the PRO argument that he assumes to be present in middles (see (5)). PRO "can also receive pragmatic control (being assigned a contextually determined interpretation)" (Stroik 1992:133, fn. 8). This is of course also true for the PRO subject in the adjunct clauses in (20). The question then is whether the embedded PRO needs to be obligatorily controlled syntactically; only when obligatory control is involved must a controlling argument in the matrix clause be assumed to be present. We believe, however, that the embedded PRO in the adjunct clause can be controlled by an implicit argument that is not syntactically present.

According to Stroik (pp. 133–134), the fact that PRO in the adjunct clause is controlled by the logical subject argument of the matrix middle sentence in (20) means that this argument must be syntactically present as PRO and cannot be an implicit argument. However, the assumption that semantically implicit arguments that are not structurally represented in syntax do not control is incorrect. In fact, in one of the more fully articulated analyses of control, developed in Koster 1987, it is extensively argued that they can.

⁸ One anonymous reviewer in fact finds all middles with a *for*-phrase odd, and another reports judgments from several speakers who do not like them very much.

⁹ Stroik indicates the main clause PRO in each sentence as *EC*, and then argues that *EC* must be taken to be PRO.

Koster (1987:109–119) analyzes the traditional distinction between obligatory control and optional control in some detail. He argues for a distinction between what he calls “anaphoric control” and “nonanaphoric control” (also see Bresnan 1982, Bouchard 1984). The former can be completely subsumed under binding theory; it requires a syntactically present, c-commanding argument controlling PRO. Nonanaphoric control, however, does not. In this case PRO can also be controlled by an argument of the matrix predicate containing the control complement, but, crucially, it does not matter whether this argument is syntactically present (in which case c-command is also irrelevant, in contrast with anaphoric control) or is a semantically implicit argument. (This is important, since in nonmovement analyses for middles like those in Fagan 1988 or Ackema and Schoorlemmer 1994 the middle’s logical subject is precisely such an implicit argument that is semantically present but not projected in syntax; see fn. 3.) Koster argues that PRO is syntactically controlled only in argumental infinitival complements resisting a (*for*-)complementizer. Adjunct clauses like those in (20) must involve nonanaphoric control.

A good example of nonanaphoric control is dative control, as discussed by Rizzi (1986) and Roeper (1987). They note that a dative controller can be freely omitted in English, in contrast to a direct object controller (Bach 1979); see (21a) (Rizzi’s (104a)). The same is true for Dutch, as shown in (21b).

- (21) a. John shouted/said/gave the order (to Bill) to leave.
 b. Dat geeft (ons) te denken.
 that gives (us) to think
 ‘That is enough to make us think.’

If the indirect object of verbs like *shout* is left implicit, it can nevertheless function as a controller. Crucially, as shown by Rizzi (1986:550–551), there are reasons to believe that implicit dative arguments of this kind are not structurally represented in syntax as PRO or *pro*. Rizzi shows that empty dative objects in English systematically differ from empty direct objects in Italian (which he analyzes as syntactic *pro*) in being unable to function as binders. He concludes from this that “the understood dative . . . does not correspond to a structurally represented position” (1986:551). Here, then, is an example of a controller that is not syntactically present. Of course, the same may be true of the implicit logical subject in a middle.

Similarly, consider the following pair from Koster 1987 (his (21)):

- (22) a. We found plans to kill the Ayatollah.
 b. We have plans to kill the Ayatollah.

Koster remarks, “[I]n both cases the controller is an implicit argument of *plans* (someone’s plans, our plans), the nature of which is again determined pragmatically” (p. 116). Again, in (22) there seems to be no reason to believe that this implicit argument is syntactically present as PRO. Control remains possible if the subject position within the NP *plans* is filled and therefore cannot contain PRO (see Williams 1985).

- (23) a. We found last year's plans to kill the Ayatollah.
 b. We have this year's plans to kill the Ayatollah all worked out.

Whatever the correct analysis for nonsyntactic control turns out to be, the examples show that there is a (pragmatic) effect that a nonsyntactically controlled PRO can still be construed as identical to some argument of the matrix predicate, independently of whether the matrix predicate is a middle verb or not.

Just as in (21) and (22), in (20) the embedded PRO is pragmatically controlled by an implicit argument of the matrix predicate; this has nothing to do with the middle status of the matrix, nor does it show the presence of a PRO argument in the matrix. Compare (20) with the following examples:

- (24) a. Most physics books are difficult even after reading them several times.
 b. Potatoes are tastier after boiling them.
 c. Bureaucrats usually are more cooperative after doing them a favor or two.

In (24) the same pragmatic effect is present as in (20). The implicit Experiencer arguments of the matrix predicates in (24) are construed as identical to the reader of the books, the boiler of the potatoes, and the doer of the favors, respectively.¹⁰ Yet the matrix predicates in (24) are of course not middles, and it would seem ad hoc to say that a syntactically present PRO argument was present in the matrix in (24).

We conclude that the sentences in (20) show the same effects as other sentences containing PROs that are controlled by a semantically implicit argument whose content is pragmatically determined. The middle nature of the matrix in (20) is irrelevant in this respect, and no PRO needs to be present in the matrix to explain the interpretation of these sentences.

Summarizing this section, we have made the case that Stroik's arguments for the syntactic presence of the logical subject argument in middles all face essentially the same difficulty: the presence of the anaphoric expressions in (9) is not related to the middle character of the sentences and can be independently explained by the theory of anaphoric expressions; the presence of the *for*-phrases in (15) is not (directly) related to the middle character of the sentences and should be independently explained by a 'theory of *for*-phrases'; and, finally, the presence of PRO in the adjunct clauses in (20) controlled by an implicit argument of the matrix predicate is not related to the middle character of the sentences and can be independently explained by control theory.

We conclude that there are no reasons to believe that the logical subject is syntactically present in a middle. We will now argue that in a middle the logical object is in fact the D-Structure subject.

¹⁰ We think the effect is not that strong in either (20b) or (24b). For instance, it seems to us that (20b) has a meaning such that the set of persons peeling the potatoes need not necessarily be identical to the set of persons boiling the potatoes. It has the meaning that potatoes have the property of being easy to peel (for any arbitrary person) after they have been boiled (by any arbitrary person); it does not mean that the potatoes are only easy to peel for those who boiled them. If correct, this shows in a very straightforward way the pragmatic, nonsyntactic nature of control in these cases.

2 Argument Sensitivity

If Move α is responsible for the promotion of the logical object in a middle, one might expect complements that are not thematically related to the middle verb to be promoted by MF. This, however, does not seem to be possible. For instance, in contrast to what is possible in a verbal passive, which does involve movement, an ECM subject cannot be promoted under MF; see (25) (from Keyser and Roeper 1984:407, (80)).

- (25) a. *John believes to be a fool easily.
 b. John was believed to be a fool.

In a movement analysis for middles modeled on that for passives, (25a) can be derived just like (25b); for instance, taking (5) as the starting point, (25a) will have an S-Structure representation like (26).

- (26) [_{IP} John_i [_{VP} [_{VP} believes [_{IP} t_i [_{VP} to be a fool]]] PRO]]

Similarly, consider an example like (27) (from Wasow 1977).¹¹

- (27) Advantage has been taken of John by unscrupulous operators.

In this verbal passive, “the derived subject is the chunk of an idiom, which bears no grammatical relation in the active” (Wasow 1977:342). Again, this nonargument constituent cannot become a derived subject under MF.

- (28) *Advantage takes easily of naive customers.

Now, there may of course be independent reasons for the ungrammaticality of examples like (25a) and (28). For instance, if only “affected” objects can be promoted under MF (the well-known Affectedness Constraint on MF; see Roberts 1985, Jaeggli 1986), no ECM subject or idiom chunk could ever be promoted. However, this in turn leads to another problem for an analysis involving syntactic movement, which is whether the Affectedness Constraint itself is compatible with such an analysis for middles, since other instances of movement are known not to be sensitive to phenomena like affectedness. In order to deal with this, H&R (1993:203) are forced to assume a new type of inherent accusative Case. They stipulate that nonaffected objects receive this inherent accusative, whereas affected objects receive structural accusative. H&R then argue that NP-movement takes place in middles for the same reason that it takes place in passives, namely, because of the lack of structural Case for the object. Since objects of nonaffecting verbs receive the special inherent accusative Case of these verbs, there is no reason for movement in their case. The apparent necessity for such ad hoc extensions of syntactic theory (in this instance, of Case theory) again seems to disfavor this movement analysis.

Thus, the generalization that MF is subject to principles that seem to affect only arguments of the verb undergoing the process remains extremely problematic for a move-

¹¹ The potential relevance of examples with idiom chunks was pointed out to us by an anonymous reviewer.

ment analysis. In the remainder of this section we will discuss a challenge to this generalization by H&R. They argue that there is one environment where MF promotes a constituent that is not part of the middle verb's θ -domain. If correct, this would constitute direct evidence for the operation of Move α in MF.

The constituents in question are the subjects of resultative predicates, which H&R analyze as small clause (SC) complements, as in (29).

- (29) hammer the metal flat
 [VP V [SC NP XP_{res}]]

The subject of the SC, *the metal* in this case, is supposed to be outside the θ -domain of the verb. Nevertheless, it can be externalized under MF (H&R 1993:197, (32)).

- (30) This metal hammers flat easily.

H&R give two arguments to show that an NP like *the metal* in (29) is not within the θ -domain of the verb. We will discuss these arguments in turn.

First, they claim that adjectival passive formation (APF), which is a process that differs from verbal passive formation in affecting only arguments of the verb undergoing it (see Wasow 1977, Levin and Rappaport 1986, and others), is impossible with resultatives. They give the examples in (31) to show this (their (33)).

- (31) a. *The metal remained unhammered flat.
 b. *The room was left unswept clean.
 c. *The house was unpainted red.

These examples seem to show that the resultative object cannot be promoted under APF and therefore (since APF is sensitive to argument structure) that this object is not an argument of the verb.

We believe the ungrammaticality of the examples in (31) is not caused by the fact that APF has been applied to the resultative, but can be explained on independent grounds. In principle, these examples could be analyzed in either of the two following ways:

- (32) a. [the house remained [unpainted [red]]] [NEG-A [RESULT]]
 b. [the house remained [un-[painted red]]] [NEG-[A RESULT]]

The first possibility is ruled out on semantic grounds. If the negator has only the deverbal adjective in its scope, the sentence must have a meaning such that the resultant state has come about by "not V-ing." However, one cannot flatten metal by not hammering it or make a house red by not painting it. The resultant state in a resultative is seen as a direct consequence of the action expressed by the verb; apparently, resultant states cannot be regarded as direct consequences of the lack of any action (although they can of course be indirect consequences of the lack of some action). So, a result phrase is

usually incompatible with a negated adjective;¹² if the examples in (31) are analyzed as in (32a), they are ungrammatical because of their semantics.

The second option, shown in (32b), is that *un-* has in its scope both the verb and the result predicate. This gives the examples a perfectly sensible semantics: for instance, (31c) will mean that the house remains in the state of not being painted red. However, the analysis in (32b) for prefixed resultative constructions is impossible on morphological grounds: resultative-verb complexes cannot be input to morphological processes at all (see Neeleman and Weerman 1993:439–440).¹³

- (33) a. *This metal is hammerflatable.
b. *He is a hammerflatter.

Therefore, the examples in (31) are ungrammatical not because a supposed nonargument of the verb is promoted under APF, but because of the presence of *un-*, which leads to either the wrong semantics or the wrong morphology. When *un-* is omitted, the examples are indeed much better, as (34) shows. Note that we are still dealing with adjectival passives, not verbal ones (which involve movement and are not argument sensitive; cf. (25b)/(27)); serving as the complement of *remain* shows their adjectival character just as well as *un-* prefixation does (see Wasow 1977:339).

- (34) a. The metal remained hammered flat.
b. The house remained painted red.

We conclude that APF is actually possible with resultatives.¹⁴ This means that the object in a resultative, which can be promoted by APF, must be an argument of the verb. This in turn means that the fact that these objects can be promoted by MF is no longer an argument for a movement analysis of middles.¹⁵

¹² Note that in a Wonderland where it *is* possible to make a house red by not painting it, these sentences are acceptable; (32a), for instance, then means that the house was made red by not painting it and it remained that way.

¹³ Thus, in grammatical examples like (i) and (ii) (see Keyser and Roeper 1992:98–99), the prefix must be attached to the verb only, not to a complex predicate consisting of verb and resultative that may exist at D-Structure.

- (i) Mary repainted the house red.
(ii) John rehammered the nail flat.

This is confirmed by the semantics of these examples. For instance, (i) means that Mary made the house red by repainting it (of course, unlike *un-*, *re-* is compatible with results), whereas it cannot mean that Mary painted the house red more than once. For more discussion on these examples, see Keyser and Roeper 1992.

¹⁴ This is also the conclusion reached by Carrier and Randall (1992) (although their argument is disputed in Jackendoff 1990:236). Carrier and Randall give several other arguments for the view that the resultative object is θ -marked by the verb; see also Neeleman and Weerman 1993. (Ironically, whereas H&R argue that MF can involve promotion of NPs that are not arguments of the middle verb because the object in a resultative can be promoted, Carrier and Randall argue that the object in a resultative is an argument of the verb because it can be promoted under MF.)

¹⁵ Carrier and Randall (1992) give another argument to the effect that the possibility of deriving middles from resultatives as in (30) supports a movement analysis for middles. They observe that a resultative middle that does not involve NP-movement seems to violate a restriction on resultatives observed by Simpson (1983),

H&R give a second argument not to consider the object in a resultative an argument of the verb. They argue that, although arguments of verbs can be realized as instances of arbitrary *pro* in English (like the logical subject argument in a middle in their analysis, see (4), and like the logical object in *John steals for a living*), this is not possible with elements that are Case-marked but not θ -marked by the verb. If the supposed SC subject in a resultative cannot be realized as *pro*, as seems to be the case in (35), this then shows that it is not in the θ -domain of the verb.

(35) *John hammers flat for a living.

[_{IP} John_i [_{VP} [_{VP} t_i [_{V'} hammers [_{SC} pro flat]]] for a living]]

We have found empirical problems with this observation. At least in Dutch it is possible to omit the object in a resultative, as in (36).

(36) a. Geld maakt niet gelukkig.

money makes not happy

'Money does not make one happy.'

b. Omo wast door en door schoon.

Omo washes through and through clean

'Omo (detergent) washes everything thoroughly clean.'

As before, we find no reason to consider the object in a resultative construction any different from an ordinary object. Apart from that, H&R's argument is based on the theory-internal assumption that implicit arguments in English are necessarily represented as θ -marked pros in syntax, an assumption we obviously do not share.

To summarize, H&R argue that the grammatical subject in a middle can be an element that is not an argument of the middle verb and therefore that NP-movement must be involved in the derivation of middles. In order to prove this point, they argue that the object of a resultative predicate is not an object of the verb. Since resultatives do derive middles, they conclude that MF can indeed promote a nonargument of the middle verb and that MF therefore must involve NP-movement. We think that H&R's arguments to show that the object in a resultative is not an argument of the verb are unconvincing,

namely, that an underived subject of the sentence may not also be the subject of the result phrase. The examples given by Simpson could also be interpreted as revealing a slightly different generalization, namely, that in resultatives there cannot be one argument that is both the logical subject of the verb and the logical subject of the resultative. In many cases, both generalizations will fit the same set of data, since the underived subject usually is the verb's logical subject. The difference shows up in middles, and also in adjectival passives. Middle formation of resultatives may still be problematic for a presyntactic (nonmovement) analysis for MF, because there are middles from transitive verb–resultative combinations of which the transitive verb itself cannot undergo MF, as shown by Rapoport (1993:175–176). Even more problematic might be the fact that verb–resultative combinations with an intransitive verb seem to undergo MF, as argued by Goldberg (1991:72) contra Carrier and Randall (1992), in which case the grammatical subject does not seem to be an argument of the verb after all. Still, this need not be problematic if it can be argued that at the level at which MF applies (if we are correct, CS) the verb and the resultative form one complex predicate, with one argument structure. MF could then target this complex predicate as a whole. It is beyond the scope of this article to establish how feasible such an analysis for resultative constructions is.

especially when compared with the fairly robust evidence to the contrary put forward by Carrier and Randall (1992) and by Neeleman and Weerman (1993). We conclude that, since in a resultative with a transitive verb the object is an argument of the verb, the verb is in fact expected to form a middle.¹⁶

3 The Unergativity of Middles

Given movement analyses like (4) or (5), middles are predicted to pattern with unaccusative verbs. Given an analysis in which the grammatical subject in a middle is a base-generated subject, as in (6), middles are predicted to pattern with unergatives. In this section we will discuss some evidence to show that middles are unergatives, not unaccusatives. Considering the same issue, Fagan (1992:118–127) argues that the tests below are not decisive in determining whether a verb in German is unaccusative or unergative. (She in fact concludes from this that a language like German has no syntactically unaccusative predicates at all (pp. 5–6).) As we go along, we will discuss the unaccusativity diagnostics in turn and conclude that, on the contrary, most of these diagnostics are valid. If applied to middles, they show a middle verb to be unergative and therefore they support nonmovement analyses for middles like Fagan's.

3.1 Auxiliary Selection

As pointed out by Perlmutter (1978) and many others, there is a correlation between unergativity/unaccusativity and auxiliary selection in the perfect tense. In languages that make a distinction between cognates of 'be' and cognates of 'have' as perfect auxiliaries, unergatives typically take 'have', whereas unaccusatives typically take 'be'. Dutch is one of the languages that show this distinction. It turns out that middles consistently take *hebben* 'have'.

¹⁶ See footnote 15 on resultatives with intransitive verbs. H&R also cite Dutch middles like (i) and (ii) to argue for a syntactic account of middles.

- (i) Deze schoenen lopen lekker.
these shoes walk comfortably
- (ii) Het loopt lekker op deze schoenen.
it walks comfortably on these shoes

In (i) an adjunct seems to be promoted; in (ii) expletive *het* appears as the grammatical subject. These types of middles are given as evidence against a lexical derivation, because they cannot be derived by a rule like Externalize (X) (see Williams 1981), where X is some designated argument. This is correct, but as we argue in Ackema and Schoorlemmer 1994, lexical derivations do not necessarily involve externalizing designated arguments; see footnote 3. "Adjunct middles" like (i) are derived if, in case the logical subject argument is semantically arbitrary and does not project to syntax, there is no argument left that can be projected as an external argument (i.e., as an NP subject). In that case a process takes place at CS that is the semantic counterpart of syntactic P-incorporation (applicative; see Baker 1988). The result of this process is that the NP becomes the argument of a complex verb, consisting of the verb and the preposition (which is not syntactically expressed). This NP is then eligible for projection as an external argument. We show that the same kind of PPs are input to applicative formation (in languages with overt P-incorporation) that are the basis for "adjunct" middles in Dutch; in fact, these PPs are not adjuncts but arguments (see Baker 1988:239–245). In impersonal middles like (ii) the expletive is inserted directly; no movement of a nonargument of the verb takes place.

- (37) a. Dit vlees heeft/*is altijd gemakkelijk gesneden.
 this meat has/is always easily cut
 'This meat has always been easy to cut.'
- b. Dit soort boeken heeft/*is altijd goed verkocht.
 this sort books has/is always good sold
 'This kind of books has always sold well.'

Interestingly, some transitive verbs allow both a middle and an inchoative alternant (see Keyser and Roeper 1984, Fellbaum 1986:5). It turns out that the two can be distinguished in the perfect in Dutch by auxiliary choice. Inchoatives, as opposed to middles, do take *zijn* 'be' in the perfect (which indicates that in their case syntactic movement of the object must be involved).

- (38) De stratemaker brak de stenen.
 the streetmaker broke the stones
 'The roadmaker broke the stones.'
- (39) Zulke stenen hebben altijd gemakkelijk gebroken. (middle)
 such stones have always easily broken
 'Such stones have always been easy to break.'
- (40) Die stenen zijn vanzelf gebroken. (inchoative)
 those stones are spontaneously broken
 'Those stones broke spontaneously.'

It has been argued that the choice of auxiliary is determined not so much by syntactic unaccusativity as by aspectual properties of the construction (see Van Valin 1990, Hoekstra and Mulder 1990, Zaenen 1993). This, however, is not unproblematic. For instance, Everaert (1992) shows that some light verb constructions have a choice of auxiliary that depends entirely on the verb's argument structure, and not its aspectual properties. Example (41b) contains an idiomatic verb with the same atelic aspect as its nonidiomatic near-synonym in (41a). The idiom takes 'be' despite these aspectual properties because it has been formed from unaccusative *gaan* 'go'.

- (41) a. Hij heeft/*is de hele dag/*in een uur geschreeuwd van woede.
 he has/is all day/in an hour screamed of anger
 'He has been raving all day/in an hour.'
- b. Hij *heeft/is de hele dag/*in een uur tekeergegaan.
 he has/is all day/in an hour "tekeer"-went
 (same)

Notice, furthermore, that any analysis that links aspectual properties and auxiliary selection has a hard time accounting for the behavior of transitive verbs, which always select *hebben* 'have' irrespective of their aspectual properties.

Apart from mentioning the semantic approaches to auxiliary selection, Fagan (1992: 120–121) makes two additional points against using auxiliary selection as a diagnostic

for unaccusativity. First, she mentions that some impersonal predicates take auxiliary *haben* 'have' in German, as in (42) (her (52a–b)).

- (42) a. *Damals hat es noch keine Autos gegeben.*
 then has it still no cars given
 'At that time, there weren't any cars yet.'
- b. *Es hat ihn gefroren.*
 it has him frozen
 'He was cold.'

Fagan argues that these verbs do not assign an external θ -role and that, if auxiliary selection were a reliable criterion for unaccusativity, they should select *sein* 'be'. Contra Grewendorf (1989), Fagan argues that *es* in these examples is not a quasi argument. However, even if *es* is not a quasi argument, it seems clear that the verbs in (42) are not unaccusatives. They assign accusative Case to their objects and there is no movement of the object to subject position, which is obviously filled by *es*. Therefore, the occurrence of 'have' is to be expected.

Second, Fagan argues that there are transitive verbs that select *sein* 'be' in German. Examples are given in (43) (her (53a–b)).

- (43) a. *Ich bin die Arbeit durchgegangen.*
 I am the work through-gone
 'I went through the work.'
- b. *Er ist die ganze Stadt abgelaufen.*
 he is the whole city down-walked
 'He has scoured the whole town.'

It seems that the analysis of these examples assumed by Fagan is the one in (44a), with a transitive verb *durchgehen/ablaufen*, taking an NP object *die Arbeit/die ganze Stadt*. For Dutch cases that are entirely parallel to these German examples, Van Riemsdijk (1978:90–108) shows that this analysis is incorrect and that sentences like these must be analyzed as in (44b). Van Riemsdijk argues that these examples involve postpositional phrases (*die Arbeit durch/die ganze Stadt ab*), the head of which incorporates into the verb.

- (44) a. [_V NP [_{V⁰} Particle-V]]
 b. [_V [_{PP} NP P⁰] V⁰] → [_V [_{PP} NP t_i] [_{V⁰} P⁰_i V⁰]]

This means that Fagan's examples in (43) do not differ in any way from other examples of movement verbs in combination with a directional (prepositional) phrase. It is in fact well known that such combinations behave in all respects like unaccusatives and not like transitives (see Hoekstra 1984, Rosen 1984, and many others).¹⁷

¹⁷ In German, as opposed to Dutch, the combination of a movement verb and a directional PP need not have telic aspect in order to trigger *sein*-selection (see Van Hout, Randall, and Weissenborn 1993), which accounts for the possibility of 'be' in (43b).

We conclude that, even though perhaps not decisive in itself, the occurrence of ‘have’ in (37) may be said to give a first indication of a middle verb’s syntactic unergativity.

3.2 Adjectival Passive Formation

Like unergatives, but unlike unaccusatives, middles never allow APF. This is shown in (45)–(46).

- (45) a. De deur blijft gesloten. (unaccusative)
 the door remains closed
 b. *De deur blijft gepiept. (unergative)
 the door remains squeaked
- (46) a. *Dit vlees blijft gemakkelijk gesneden.
 this meat remains easily cut
 b. *Deze schoenen blijven lekker gelopen.¹⁸
 these shoes remain comfortably walked

3.3 Prenominal Past Participles

The third criterion for distinguishing unergatives and unaccusatives in Dutch concerns the behavior of past and present participles as prenominal modifiers. Unergatives and unaccusatives behave differently with respect to the participle that can appear prenominally. An unergative intransitive can appear prenominally only as a present participle, which modifies its external argument.

- (47) a. de dinerende taalkundigen/*de gedineerde taalkundigen
 the dining linguists the dined linguists
 b. een niet kloppende lijst/*een niet geklopte lijst
 a not tallying list a not tallied list

Unaccusatives allow both participles prenominally.

- (48) a. de stervende zwaan/de gestorven zwaan
 the dying swan the died swan
 b. de vallende bladeren/de gevallen bladeren
 the falling leaves the fallen leaves

It turns out that middles pattern with unergatives, allowing the present participle, but resisting the past participle prenominally (note, incidentally, that the present participle can be noneventive in Dutch, as in (47b), so that it is compatible with a middle reading).

¹⁸ This is derived from an ‘‘adjunct’’ middle (see fn. 16) (cf. *Deze schoenen lopen lekker* ‘These shoes walk comfortably’).

- (49) a. het makkelijk snijdende/*gesneden vlees
 the easily cutting/cut meat
 b. de lekker lopende/*gelopen schoenen (see fn. 18)
 the comfortably walking/walked shoes

Notice that the issue of prenominal past participles is not the same as the argument concerning APF in section 3.2. It would be if prenominal past participles were necessarily adjectival. However, they can be verbal (pace Wasow (1977)). This is particularly clear in Dutch examples like (50a), which contrasts with (50b).¹⁹

- (50) a. de door Piet (*on-)geopende deur (verbal)
 the by Piet (un-)opened door
 b. de al uren (*door Piet) geopende deur (adjectival)
 the for hours (by Piet) opened door

In English a phrase like *the closed door* is also ambiguous between an eventive and a state reading of *closed*, indicating that English prenominal past participles are subject to the same distinction.

The fact that prenominal past participles can be verbal means that the absence of an adjectival participle of a particular verb does not automatically entail the absence of a prenominal past participle of the same verb. Consider for instance the cases of motional verbs in combination with a directional PP discussed above: these fail to undergo APF, but do occur as prenominal past participles.

- (51) a. *Zij lijken/raken naar Amsterdam gelopen.
 they seem/get to Amsterdam walked
 b. *Zij zijn heel naar Amsterdam gelopen.
 they are very to Amsterdam walked

- (52) de naar Amsterdam gelopen wandelaars
 the to Amsterdam walked walkers

As in the case of auxiliary selection, we must ask whether nonoccurrence as a prenominal past participle is in fact an indication of the syntactic unergativity of the verb or whether it is the result of some semantic property like having telic or atelic aspect. By looking at the behavior of transitive verbs in the same environment, we can show that aspectual properties are irrelevant to this issue. Almost all atelic transitives, like all telic ones, can occur as prenominal past participles, which modify the verb's internal, but crucially not its external, argument. This shows that, as illustrated in (53), it is the internal/external argument distinction that matters in the possibility of prenominal past participle modification, not the structure's aspectual properties.

¹⁹ (50b) shows that *openen* 'open' is not one of the verbs whose adjectival passive requires a *by*-phrase (cf. Grimshaw 1990:127, (52)), but one of the more regular cases that do not allow one at all. Therefore, the *by*-phrase in (50a) is one indication (besides the impossibility of *un*-prefixation) of the verbal status of the participle there.

- (53) a. de door zijn collega's al jaren gehate/bewonderde componist
 the by his colleagues for years hated/admired composer
 b. de door het gekuch voortdurend gehinderde dirigent
 the by the coughing constantly hampered conductor
 c. de gedurende het hele stuk door het publiek verwachte
 the during the entire play by the audience expected
 ontknoping
 dénouement

The fact that so many intransitive prenominal past participles are telic must be caused by the fact that, obviously, there is a correlation between telicity and syntactic unaccusativity; but it is the latter property and not the former that matters here. In fact, as with all correlations, there are exceptions. The examples in (54) contain some atelic unaccusatives, which, as expected, do occur as prenominal past participles.

- (54) a. De bezoekers zijn/*hebben urenlang gebleven.
 the visitors are/have for-hours remained
 a'. de urenlang gebleven bezoekers
 the for-hours remained visitors
 b. De spanning is/*heeft dagenlang toegenomen.
 the tension is/has for-days increased
 b'. de dagenlang toegenomen spanning
 the for-days increased tension
 c. Mijn tegenzin is/*heeft jarenlang gegroeid.
 my dislike is/has for-years grown
 c'. mijn jarenlang gegroeide tegenzin
 my for-years grown dislike

As can be seen from the durative adverbials, these sentences are atelic.²⁰ This means that telicity does not determine the possibility of a prenominal past participle. The impossibility of the prenominal past participles in (49) therefore indicates the syntactic unergativity of middle verbs.²¹

3.4 Impersonal Passives

Another test for distinguishing unergatives and unaccusatives in Dutch concerns impersonal (verbal) passives, which cannot be formed from unaccusatives (Perlmutter 1978).

²⁰ Note in (54b–c) that the durative adverbial does not induce a repetitive interpretation of the sentence. With telic change-of-state verbs, the addition of a durative adverbial does lead to a repetitive interpretation (*John fell for hours*). Therefore, degree achievement verbs like *grow* and *increase* are not like telic verbs; see Dowty 1979:88–90 for discussion.

²¹ Fagan (1992:121–122) states that the possibility of a prenominal past participle correlates directly with the choice of 'be' in the perfect tense. As noted above, she argues that auxiliary selection is not a good criterion for syntactic unaccusativity; therefore, she does not accept this criterion, either. We have argued that auxiliary selection can in fact be used as a diagnostic, in which case the correlation noted by Fagan only supports the assumption that there is a class of unaccusative predicates that can be identified by these criteria.

- (55) a. *Er wordt gegroeid door de kinderen.
 there is grown by the children
 b. Er wordt gewerkt door de kinderen.
 there is worked by the children

At first sight, middles now seem to behave like unaccusatives.

- (56) a. *Er wordt makkelijk gesneden (door dit vlees).
 there is easily cut by this meat
 b. *Er wordt lekker gezeten (door deze stoel). (see fn. 18)
 there is nicely sat by this chair

Note, however, that in impersonal passives there is a [+human] restriction on the interpretation of the implicit external argument (see Pollmann 1975:15). For instance, *Er werd gefloten* 'There was whistled' cannot mean that the teakettle whistled. This means that only a middle with a [+human] grammatical subject like (57) should allow an impersonal passive to begin with.

- (57) Bureaucraten kopen gemakkelijk om.
 bureaucrats bribe easily

Now, it seems that a verbal passive of such a middle is marginally possible.²²

- (58) ?Er wordt hier over het algemeen niet gemakkelijk omgekocht.
 there is here over the general not easily bribed
 'In general, people do not bribe easily here.'
- (59) a. Dikke baby's wegen gemakkelijk.
 fat babies weigh easily
 b. (one nurse to another) ?Er wordt lekker makkelijk gewogen
 there is pretty easily weighed
 vandaag; het zijn allemaal dikzakken.
 today it are all fatsos

Thus, middles do seem to form verbal passives, which again seems to confirm the unergative nature of middle verbs.

Fagan (1992:122–125) raises some objections against using impersonal passives as a diagnostic for unaccusativity. She notes that there are unergative verbs that do not allow impersonal passives. This does not bear on our argument, since it is based on the opposite, namely, the possibility of forming an impersonal passive (with middles). The crucial question is whether unaccusative verbs ever allow impersonal passivization. According to Fagan's second objection, some unaccusative verbs do allow impersonal pas-

²² Checking this prediction is difficult, since (58)/(59b) can be formed from transitive *omkopen/wegen* 'bribe'/'weigh' anyway (if the direct object is omitted). In that case (58) means 'In general, people do not use bribing practices often here'. Its intended (middle) reading here is 'In general, it is not easy to bribe someone here'. We have checked the examples with a number of native speakers, who accepted the sentences in their middle reading.

sives. However, these are only possible on a reading where the verb's single argument is interpreted as volitional (see Zaenen 1993:135, 139).²³ The single argument of a middle²⁴ is not volitional (because a middle is a property verb, the subject of which is not volitional). Therefore, since they do allow impersonal passives, they would be the only unaccusatives allowing this without being volitional. A better conclusion is that they are not unaccusatives.

3.5 *-er-Nominals*

Finally, Fagan (1992:125) discusses the formation of *-er*-nominals as a diagnostic. It has been argued by Grewendorf (1989) that such nominals can only be derived from unergatives. Fagan shows that this generalization is incorrect for German, which has both *-er*-nominals that are derived from unaccusatives and *-er*-nominals that refer to the object of a transitive verb. We think that Fagan's counterargument is correct. The same is in fact true for Dutch, which also has *-er*-nominals referring to the base verb's internal argument (see Booij 1988, De Haas and Trommelen 1993:175); examples are given in (60a) (based on transitives) and (60b) (based on unaccusatives).

- (60) a. aanrader afkokers bijsluiter
 recommender off-cookers with-closer
 'a must' 'mushy potatoes' 'instructions with medicine'
- b. afzwaaiër beginner invaller stijger
 off-swiinger beginner infaller riser
 'hopeless miss' 'beginner' 'substitute' 'share rising in price'

Although this criterion is not reliable, we might still note that Dutch does have *-er*-nominals that are plausibly derived from a middle verb, as shown in (61).

²³ Both Zaenen and Fagan state that in order for impersonal passivization to be possible, unergatives must be volitional as well. This is not quite correct, however, as the following examples from Dutch show (note that none of these can be combined with the adverbial *opzettelijk* 'on purpose', which is Zaenen's criterion for volitionality):

- (i) a. Er werd (door het publiek) ademloos geluisterd.
 there was (by the audience) breathlessly listened
 b. Er wordt (?door arme mensen) veel geleden in de wereld.
 there is (by poor people) much suffered in the world
 c. In dit huis kan (?door ouderen) niet meer worden gewoond.
 in this house can (by elderly) not anymore be lived
 d. Er wordt in dit huis (?*door de kinderen) iedere nacht gedroomd over
 there is in this house (by the children) every night dreamed about
 Sinterklaascadeautjes.
 Saint Nicholas presents

Such impersonal passives are not always felicitous, especially when they contain a *by*-phrase. This is true for the middle examples in (58)–(59) as well: they are not wonderful sentences, and adding a *door*-phrase ('by'-phrase) considerably degrades them.

²⁴ That is, the single argument (the logical object) that projects in syntax according to the nonmovement analysis (see fn. 3).

- (61) a. Dit zijn lekkere stappers.
 these are comfortable walkers
 'These are comfortable shoes.'
- b. Dat is een prima rokertje.
 that is a fine little-smoker
 'That is a fine cigar.'

This means that an unergative analysis of middles is at least not incompatible with these data. The same conclusion is reached for English by Rappaport Hovav and Levin (1992: 149), who cite examples like (62).²⁵

- (62) best-seller, broiler, fryer, roaster, steamer

3.6 Summary

In this section we have discussed the standard diagnostics for unaccusativity in Dutch. Even if alternative accounts can be worked out for individual tests, the combined result indicates that syntactic unaccusativity is the decisive factor. We have found that, according to most of these diagnostics, middle verbs are unergatives. This is further evidence against movement analyses of middles, at least in Dutch.

4 Conclusion

In this article we have compared some analyses of the middle construction on the basis of two properties: first, the syntactic presence or absence in a middle of the external argument of the transitive that corresponds to the middle, and second, the presence or absence of NP-movement to promote the internal argument of the transitive corresponding to the middle. Concerning the first property, we have shown that there is no convincing evidence for the syntactic presence of the middle verb's logical subject. The empirical evidence concerning the second property indicates that the logical object is a base-generated subject—in other words, that there is no (syntactic) NP-movement. Therefore, we conclude that analyses that treat middle formation as a presyntactic operation are basically on the right track.

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²⁵ In fact, they argue that all *-er*-nominals that seem to refer to the verb's internal argument must be derived from its middle form. This presupposes a lexical treatment of middles, which is why we cannot use it as an independent argument for such a lexical analysis. Besides, this conclusion is not unproblematic in view of examples like (60b). These are derived from unaccusatives, which in general do not undergo MF (see H&R 1993:194, Ackema and Schoorlemmer 1994:73, fn. 25).

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