*J. Linguistics* **35** (1999), 527–553. Printed in the United Kingdom
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# On the status of an implicit arguments in middles[1]

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(Received 17 April 1997; revised 3 August 1998)

Massam (1992), challenging the view that the presence of an implicit argument is essential to middles, argues that middles should be defined in terms of genericity and modality. This paper shows that Massam's hypothesis is factually untenable. Genericity and modality are only typical, not essential, properties of middles. Furthermore, middles in Massam's conception do not form a natural class with middles as normally understood. Rather, the presence of an implicit argument is a defining characteristic, as is widely accepted.

It is further shown that in order to handle an implicit argument properly, middles need to be represented by conceptual structure in the sense of Jackendoff (1987a, 1987b, 1990). The proposed analysis of middle by means of conceptual structure accommodates even the implicit argument of middles that express specific events.

## 1. Introduction

It is customary to regard middles as involving an implicit argument. Massam (1992) challenges this view, arguing that middles should be defined in terms of genericity and modality instead. This paper aims to show that the presence of an implicit argument is in fact a defining characteristic of middles. After a brief review in section 2 of Massam's (1992) claim, sections 3 and 4 closely examine whether genericity and modality are essential for middles. Section 5 points out that the middles in Massam's conception do not form a natural class with middles as normally understood. Section 6 argues that in order to properly handle an implicit argument, middles need to be represented by conceptual structure in the sense of Jackendoff (1987a, 1987b, 1990). Section 7 touches on the reliability of *all by itself* as a diagnostic for the presence of an implicit argument. Two appendices discuss further issues.

[1] I'd like to express my gratitude to William Lee, Lynne Roecklein and John Russell, who helped me a great deal with their insightful observations. I'm also grateful to two anonymous referees of *Journal of Linguistics* for their comments, which led to a significant improvement of this paper. Thanks again to Lynne Roecklein for suggesting stylistic improvements.



https://doi.org/10.1017/S0022226799007914 Published online by Cambridge University Press

## 2. Characterizing middles

### 2.1 *Six characteristics*

It is widely agreed in the literature that middles typically display the following characteristics. First, middles are noneventive. They appear in simple present tense and denote generic events rather than specific ones, as in (1).

(1) (a) Bureaucrats bribe easily.
(b) The wall paints easily.
(c) Chickens kill easily.
(d) The floor waxes easily. (Keyser & Roeper 1984: 384)

They are claimed to be unacceptable in the past tense with modifiers specifying definite past moments.

(2) (a) ?Yesterday, the mayor bribed easily, according to the newspaper.
(b) ?At yesterday's house party, the kitchen wall painted easily.
(c) ?Grandpa went out to kill a chicken for dinner, but the chicken he selected didn't kill easily.
(d) ?If it hadn't been for the wet weather, my kitchen floor would have waxed easily.
(Keyser & Roeper 1984: 384)

They are also claimed to be incompatible with progressive aspect.

(3) (a) *Chickens are killing.
(b) *Bureaucrats are bribing.
(c) *The walls are painting.

Next, middles typically involve the modal notion of possibility. Thus the sentences in (4a) can be paraphrased as those in (4b).

(4) (a) [A kind of siding:] It nails easily. It cuts easily.
(b) It can be nailed easily. It can be cut easily. (Fagan 1992: 54)

Another characteristic of middles is that they generally require certain adverbials like *easily*. Without such an adverbial, the sentences are unacceptable.

(5) (a) *Washington's letters don't read.
(b) Washington's letters don't read easily.

(6) (a) *This salami slices.
(b) This salami slices easily. (Fellbaum 1986: 7)

But the obligatory presence of these adverbials is not so much a matter of syntactic subcategorization requirements as one of informativeness. As is well-known, even in the absence of adverbials, middles are acceptable provided that non-given information is somehow supplied, for instance, through negation (7), sentential stress on the verb (8), or emphatic *do* (9).



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(7) (a) *This meat cuts.
(b) This meat doesn't cut. (Fellbaum 1986: 9)

(8) (a) ??This car drives.
(b) I thought we were out of gas, but the car DRIVES! (Ibid.)

(9) These red sports models do sell, don't they? (Dixon 1991: 326)

I will henceforth call this behavior of adverbials 'adverbial effect'.

Still another characteristic of middles is that the grammatical subject is responsible for the action denoted by the verb. Thus (10) implies that certain properties inherent in the book (large print, a clear expository style, and so on) facilitate its being read.

(10) This book reads well.

Finally, middles are said to involve an implicit argument, in sharp contrast with ergatives, which do not. Therefore, phrases like *all by itself* can appear with ergatives but not with middles.

(11) (a) The boat sank all by itself.
(b) *This book reads easily all by itself.
(Keyser & Roeper 1984: 405)

### 2.2 *Massam (1992)*

Of the six characteristics mentioned above, the presence of an implicit argument has been widely held to be one of the defining characteristics of middles (Roberts 1985, Hale & Keyser 1987, Ackema & Schoorlemmer 1994, 1995, Fagan 1992, among others). Massam (1992: 120–121), however, holds a different view, arguing that '[s]entences such as below should to my mind be considered to be middles, since they contain the same aspectual properties as less controversial middles do'.

(12) (a) Accidents happen easily.
(b) Some problems arise easily.
(c) Royalists die well under torture.

(13) (a) Some players hit home runs easily.
(b) Happy children learn well.
(c) I don't panic easily.

She takes modality rather than implicit arguments to be an essential characteristic of middles.

> We define middles as a sentence which contains a certain modality which lends a generic meaning to the sentence. Likewise, the presence of an implicit agent is not to be considered a defining aspect of middles.
> (Massam 1992: 121)



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Middles thus defined form a much larger class than middles as traditionally understood, the latter being simply a subpart of the former.[2]

Massam's argument can be recast into two claims: first, that the sentences in (12) and (13) form a natural class with middles as normally understood, and second, that genericity and modality are defining characteristics of middles. The validity of Massam's argument can be assessed by examining these two claims.[3] I will tackle the second claim first.

## 3. Non-generic reading of middles

Let us begin with the genericity of middles. It is true that middles usually appear in the present tense with a generic reading. But this does not mean that they can never express specific events. Some middles are acceptable in the past tense, expressing specific, actual events. Thus of the four sentences in (14), to all of which Keyser & Roeper (1984) assign question marks rather than asterisks, two are judged totally acceptable by my informants.

(14) (a) ?*Yesterday, the mayor bribed easily, according to the newspaper.
(b) ??At yesterday's house party, the kitchen wall painted easily.
(c) Grandpa went out to kill a chicken for dinner, but the chicken he selected didn't kill easily.
(d) If it hadn't been for the wet weather, my kitchen floor would have waxed easily.

The same pattern occurs with the sentences in (15). Rosta (1995: 137) finds the following two sentences perfectly acceptable, and my informants judged (15a) acceptable and (15b) marginally acceptable.

(15) (a) The curry digested surprisingly easily last night.
(b) The Eiffel Tower erected easily.

Thus despite the general tendency of middles to favor the present tense, some middles do appear in the past tense.

The same is true of progressive aspect. Although Keyser & Roeper (1984) assign asterisks to all the progressive sentences in (3), the sentences in (16) are acceptable to my informants.

[2] Massam calls middles in the usual sense IASC middles, where IASC stands for 'internal argument as subject' constructions.

[3] Massam attributes modality which typical middles exhibit to a null $X^0$ modal element that heads an inflectional projection, but I will not discuss the feasibility of this null element hypothesis. The main aim of this paper is to elucidate the nature of middles on a factual basis, so that the following discussion is concerned with whether Massam's leading idea is factually correct or not, not with how to implement that idea in a particular theoretical framework.



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(16) (a) The wall is painting easily.
(b) The floor is waxing easily.

Evidently the judgments of (3) are triggered by the absence of *easily*, apart from progressive aspect.

The sentences in (17) are unacceptable to my informants even in the presence of *easily*, apparently in accordance with Keyser & Roeper's judgments.

(17) (a) ?*Bureaucrats are bribing easily.
(b) *Chickens are killing easily.

But the unacceptability of (17) is due to the indefinite subjects; similar sentences with definite subjects are acceptable.[4]

(18) (a) These bureaucrats are bribing easily.
(b) These chickens are killing easily.

This is not an isolated phenomenon. It seems that middles with indefinite subjects resist progressive aspect. Thus the sentences in (19), whose subjects refer to kinds rather than to specific entities, cannot be converted into progressives in (20).

(19) (a) Pine saws easily.
(b) A person who isn't self-conscious photographs well.
(c) Nasturtiums do not transplant well. (Fagan 1992: 148)

(20) (a) *Pine is sawing easily.
(b) *A person who isn't self-conscious is photographing well.
(c) *Nasturtiums are not transplanting well.

Incompatibility of indefinite subjects with progressive aspect must be due to the fact that middles in the progressive describe specific, ongoing events. It is incoherent to predicate a specific, ongoing event of a non-specific entity.

All this shows that Keyser & Roeper's judgments of (3) are influenced by factors other than progressive aspect, and that the prohibition against progressive aspect is only apparent. Some middles do appear in the progressive as in (18).

One thing worth mentioning at this point is that middles in the progressive crucially differ in interpretation from middles in the present tense. As noted immediately above, middles in the progressive convey that the event denoted by the verb is currently taking place, not that any potential agent can perform the action described because of the inherent properties of the subject, like middles in the present tense.

This difference in meaning seems to account for the observation widely reported in the literature that middles cannot be turned into progressives.

[4] I am indebted to William Lee for this observation.



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Presented with middle sentences in the progressive, one naturally expects these sentences to be progressive counterparts of the present tense middles, that is, progressives with a generic interpretation. This interpretation normally fails, and therefore one concludes that progressive aspect is impossible with middles.

In fact, all my informants responded negatively to middles in the progressive at first. But as the discussion went on, they changed their judgments, reporting that middles are acceptable in the progressive, albeit with a different meaning.

Essentially the same is true of middles in the past tense. One is likely to judge middles in the past tense to be unacceptable until one arrives at an appropriate interpretation.

It might be argued that middles in the past tense or in the progressive are no longer 'true' middles and are more like ergatives. However, this view would delimit the category 'middle' too narrowly, excluding many instances that have been regarded as middles in the literature. Besides, it would miss the fact that middles in the past tense or in the progressive exhibit the adverbial effect.

(21) The steaks you bought yesterday cut like butter. (Fellbaum 1986: 4)

(22) *The steaks you bought yesterday cut.

(23) (a) The steaks you bought yesterday are cutting like butter.
(b) *The steaks you bought yesterday are cutting.

To recapitulate, the occurrence of middles in the present tense with a generic meaning is not a hard-and-fast constraint. The genericity of middles is merely a typical characteristic of middles, not a defining one.

## 4. Modality

When some middles express specific events in the progressive or in the past tense as just seen, the modality observed with middles in the present tense disappears. For instance, *This wall is painting easily* cannot be paraphrased as 'This wall can be being painted'.

Thus we see that the progressive or past tense forms of middle constructions relinquish modality. There is another group of middles that does not involve modality, to which we now turn.

### 4.1 *Independence-of-Action middles*

Van Oosten (1986) divides middles ('Patient-Subject Sentences' in her terms) into two types: Responsibility Patient-Subject Sentences and Independence-of-Action Patient-Subject Sentences. The former correspond to typical middles, where some property of the subject is responsible for the situation



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or event denoted by the predicate verb. But this is not the case with the latter. (24) is an instance of Independence-of-Action middles.

(24) This Christmas…
Enjoy gift wrapping the easy, organized way with a complete 'home wrapping center' that stores in its own caddy.
(van Oosten 1986: 90)

van Oosten argues that (24) does not convey that a property of the home wrapping centre is responsible – namely that it has just the right number, shape and size of components to fit into the caddy. 'For one thing, the caddy was probably constructed to fit the ''home wrapping center'' and not the other way around' (van Oosten 1986: 90). van Oosten rightly points out that Independence-of-Action middles do not have 'responsible subjects'. More relevant in the current context, however, is the absence of modality. (25a) as an Independence-of-Action middle does not convey the same thing as (25b).[5]

(25) (a) The home wrapping center stores in its own caddy.
(b) The home wrapping center can be stored in its own caddy.

Other examples of Independence-of-Action middle include the following:

(26) Let's see how this idea communicates on film.
(van Oosten (1986: 86)

(27) A: You didn't leave enough of a margin on the bottom of the page.
B: No, it just photocopied too low.
(van Oosten 1977: 470)

(28) You think you understand the difference between the three voices in Greek and how to translate each one but then once in a while you come across a verb that won't translate right.
(Ibid.)

None of these examples in the intended reading can be paraphrased by passive sentences with *can*.

### 4.2 *Properties of Independence-of-Action middles*

At this point, one might argue that Independence-of-Action middles are very special, loose usages, and that their peculiarities are due to the informal register. In fact, the following data from Fagan (1992: 54–56), which are instances of Independence-of-Action middles, are all attested examples from advertisements.[6]

[5] I add the qualification 'as an Independence-of-Action middle' because all the cited examples of Independence-of-Action middle can also be interpreted as an ordinary middle, as will be shown shortly.

[6] I am grateful to Lynne Roecklein for bringing this point to my attention.



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(29) (a) [Shoe chest:] Stows on floor or shelf.
(a) [Shower curtain liner:] Secures with 2 strong magnet anchors for extra protection.

(30) (a) [Hanging sweater rack:] Secures around closet pole.
(b) Extra-long, drop-shouldered cardigan buttons from its banded neck to the knee-length, shirt-tail hem.

Granted that advertisement language allows for a great deal of freedom, still Independence-of-Action middles cannot be explained away simply as a matter of register or loose usage. As Fagan (1992) observes, the sentences above are actually ambiguous between a reading that involves the modality of ability or possibility and a reading that does not involve any modality. For example, (29a) can mean either that the shoe chest CAN be stored on the floor or a shelf or that it generally IS stored in these locations. Other middles are ambiguous in the same way.

In other words, interpretation as a typical middle is possible even in advertisement language. Recall that middles in general are not open to a reading without modality. The following sentences necessarily involve the modal notion of possibility.

(31) (a) This book reads easily.
(b) This wall paints easily.
(c) This car handles smoothly.

The absence of modality cannot be attributed to the register, indicating that Independence-of-Action middles are really distinct from typical middles.

Given that the distinction is real, the next question is whether Independence-of-Action middles are really middles. They do exhibit four of the characteristics of middles. Their amenability to past tense is variable.[7]

(32) (a) ?*That idea communicated on the film Hunt made.
(b) That passage translated more easily when I had my interlinear next to me.
(c) *The home wrapping center stored in our attic for three years before I ever got around to throwing it away.
(d) The document photocopied too low.

Progressive aspect is sometimes allowed, sometimes not.

(33) (a) *That idea is communicating well on film.
(b) ?That passage is translating {well/easily}.
(c) *The home wrapping center is storing in our attic.
(d) The document is photocopying too low.

The sentences are unacceptable without adverbials.

[7] The examples in (32) are van Oosten's (1986), the judgments are my informants'.



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(34) (a) ?*That idea communicates.
(b) ?That passage translates.
(c) *The home wrapping center stores.
(d) *The document photocopies.

But they become acceptable under negation as in (35) or when sentential stress falls on the verb to convey unexpectedness as in (36).

(35) (a) That idea doesn't communicate.
(b) That passage doesn't translate.

(36) The document PHOTOCOPIES.

Independence-of-Action middles are generally incompatible with *all by itself*. (The acceptability of (37a) will be discussed in 7.1.)

(37) (a) That idea communicates well {automatically/all by itself}.
(b) ??That passage translates {well/easily} {automatically/all by itself}.
(c) *The home wrapping center stores in our attic {all by itself/automatically}.
(d) ?*The document photocopied too low {all by itself/of its own accord}.

These behaviors are summarized in Table 1.

| | past | progressive | adverbial effect | *all by itself* |
|---|---|---|---|---|
| *communicate* | ?* | ?* | + | OK |
| *translate* | OK | ? | + | ?? |
| *store* | * | * | + | * |
| *photocopy* | OK | OK | + | ?* |

*Table 1*
Behavior of Independence-of-Action middles

The overall pattern of Independence-of-Action middles is like that of typical middles, confirming that they are middles. Thus not all middles involve modality, which in turn indicates that modality is not a defining characteristic of middle.

## 5. Further problems of Massam (1992)

The foregoing discussion seriously challenges the second claim that genericity and modality are defining characteristics of middles. Now let us examine the first claim, namely, that the sentences in (12) and (13) form a natural class with typical middles.



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(12) (a) Accidents happen easily.
(b) Some problems arise easily.
(c) Royalists die well under torture. (Massam 1992: 120)

(13) (a) Some players hit home runs easily.
(b) Happy children learn well.
(c) I don't panic easily. (Massam 1992: 121)

Closer investigation reveals that these sentences are only superficially like middles. Other than the present tense with a generic meaning, the sentences cited in Massam (1992) behave quite differently from true middles. Notice that all the sentences except (13c) have indefinite subjects, which facilitate a generic interpretation. When the subjects are definite, the generic interpretation becomes harder to obtain. Instead these verbs welcome the past tense, expressing specific events.

(38) (a) That accident happened yesterday.
(b) That problem arose yesterday.
(c) This royalist died under torture.

(39) (a) This player hit two home runs yesterday.
(b) That happy child learned well yesterday.
(c) I didn't panic then.

The generic interpretation is possible only when the definite subject is kind-denoting. In (40), the subject means 'that kind of accident', 'that kind of problem', or 'that kind of royalist'.[8]

(40) (a) That accident happens easily.
(b) That problem arises easily.
(c) That royalist dies well under torture.

In contrast, true middles accept not only indefinite subjects as in (19) but also definite ones as in (41), and there is no preference of indefinite subjects over definite ones.

(19) (a) Pine saws easily.
(b) A person who isn't self-conscious photographs well.
(c) Nasturtiums do not transplant well.

(41) (a) This book reads easily.
(b) This car handles smoothly.

The genericity that the sentences in (12) and (13) exhibit is thus different from the genericity that true middles display, which is independent of the (in)definiteness of the subject.

Notice also that the sentences in (38) and (39) are acceptable without adverbials, indicating that adverbs like *easily* or *well* in (12) and (13) are not manifestations of the adverbial effect found with true middles. Recall also that the adverbial effect persists even with a change in tense or aspect.

[8] I thank an anonymous referee for pointing out this issue.



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(42) (a) The steaks you bought yesterday cut like butter.
(b) *The steaks you bought yesterday cut.

(43) (a) The steaks you bought yesterday are cutting like butter.
(b) ?*The steaks you bought yesterday are cutting.

Moreover, as Ackema & Schoorlemmer (1995: 176, fn. 5) point out, middles cannot be modified by *abruptly*.

(44) (a) *Bureaucrats bribe abruptly.
(b) *This wall paints abruptly.
(c) *Chickens kill abruptly.
(d) *This floor waxes abruptly.

But Massam's examples can be so modified.

(45) (a) Accidents happen abruptly.
(b) Some problems arise abruptly.
(c) Royalists die under torture abruptly.

All these facts strongly indicate that the sentences cited in Massam (1992) are distinct from true middles and therefore cannot support the claim that either genericity or modality is a defining characteristic of middles. Furthermore, they do not form a natural class with ordinary middles.

## 6. Implicit argument as an essential of middles

### 6.1 *The existence of an implicit argument*

There seems to be no reason, then, to reject the view that an implicit argument is a defining characteristic of middles. In fact, there are reasons to endorse this view. Besides the uncontroversial middles often cited in the literature, even middles lacking genericity or modality involve an implicit argument. Recall that Independence-of-Action middles are generally incompatible with adverbials like *all by itself*.

(37) (a) That idea communicates well {automatically/all by itself}.
(b) ??That passage translates {well/easily} {automatically/all by itself}.
(c) *The home wrapping centre stores in our attic {automatically/all by itself}.
(d) ?*The document photocopied too low {all by itself/of its own accord}.

Moreover, an implicit argument crucially figures in the interpretation of middles that appear in the progressive or in the past tense as in (46).

(46) (a) This car handles smoothly.
(b) This car is handling smoothly.
(c) This car handled smoothly.



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In these cases, it cannot be non-specific 'people, in general' who actually are handling or handled the car. Rather, a specific person, most likely the speaker, is engaged in the handling activity. Accordingly, sentences like (46b) and (46c) cannot be embedded in contexts which indicate that the event was taking place/took place independently of the speaker.

(47) (a) *This car was handling smoothly while I was sleeping in the backseat.
(b) *This car handled smoothly while I was sleeping in the backseat.

Similarly with the following sentences. The middles of *paint* and *wax* can express specific events, which require a specific agent who does the painting or waxing.

(48) (a) This wall paints easily.
(b) This wall is painting easily.
(c) This wall painted easily.

(49) (a) *This wall was painting easily while I was taking a bath.
(b) *This wall painted easily while I was taking a bath.

(50) (a) This floor waxes easily.
(b) This floor is waxing easily.
(c) This floor waxed easily.

(51) (a) *This floor was waxing easily while I was sleeping in my room.
(b) *This floor waxed easily while I was sleeping in my room.

The specific agent is most likely to be the speaker, but it can be otherwise. William Lee (personal communication) has provided me with the following data, where someone other than the speaker handled the car.

(52) According to what the driver told me, this car handled smoothly while I was sleeping in the backseat.
(53) This car must have handled smoothly while I was sleeping in the backseat, because I slept all the way without waking.

Thus an implicit argument makes a significant contribution to the interpretation of a sentence when middles express a specific event.

To recapitulate, even these instances of middles that have attracted little attention so far involve an implicit argument. This definitely argues in favor of the view that an implicit argument is a defining characteristic of middle.

## 6.2 *Representation*

### 6.2.1 *Argument structure*

That middles should be primarily characterized in terms of an implicit argument entails that they are derived by suppressing the external argument and externalizing the direct internal argument of the transitive base verb, in



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accordance with the common practice in the literature. It might seem that the two operations (that is, suppression and externalization) can be straightforwardly stated in any theory of argument structure, as illustrated below.

(54) (a) work, x.
arrive^y
hit^y
put^y, x; Loc P^z. (Zubizarreta 1987: 8–9)

(b) put: x⟨y, P-loc Z⟩ (Rappaport & Levin 1988)

(c) temere 'fear' [Experiencer, Theme]
preoccupare 'worry' [Experiencer, Theme]
piacere 'please' [Experiencer, Theme]
(Belletti & Rizzi 1988: 344)

(d) break (x (y))
Agent Patient
Cause ....
(Grimshaw 1990: 24)

However, these versions of argument structure have difficulty properly stating suppression of the external argument. All these theories seem to assume that every argument listed in argument structure is eligible for syntactic expression. Accordingly, suppression of an argument comes to mean the same as deletion of that argument. But if the external argument is deleted, the resulting argument structure will be virtually identical to that of ergatives, which lack the argument in question from the start, and will fail to convey that the argument is semantically present.

One might hold that 'suppression' in the sense of Grimshaw (1990) is different from deletion, for she argues:

> Suppressed positions are represented in the argument structure but are not available for purposes of theta-marking. They are, in effect, 'implicit arguments'. (Grimshaw 1990: 109)

But by 'suppressed arguments' Grimshaw means those that can be syntactically expressed as an a-adjunct, like an implicit argument of a passive (ø = suppressed argument).

(55) (a) The enemy destroyed the city.
*destroy* (x (y))
Agent Theme
(b) The city was destroyed by the enemy.
*destroyed* (x-ø (y))
Agent Theme (Grimshaw 1990: 108)

In other words, for her arguments qualify as suppressed only when they are syntactically as well as semantically present. Later in the discussion



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Grimshaw explicitly states that middles lack a suppressed argument position, on the grounds that the passive *by*-phrase cannot occur with a middle as in (56a), the same as an ergative in (56b).

(56) (a) *These books read well by children.
(b) *The glass broke by the child.

'Neither inchoatives nor middles have suppressed argument positions – each simply lacks the agent position that the corresponding transitive has.' (Grimshaw 1990: 136) Grimshaw posits (57a) and (57b) as the a-structures for (56a) and (56b), respectively.

(57) (a) read ((x))
(b) break ((x))

Thus Grimshaw's a-structure fails to differentiate between ergatives and middles, and in this sense it is no different from the other versions of argument structure in (54).

### 6.2.2 *Safir (1991) and Roeper (1993)*

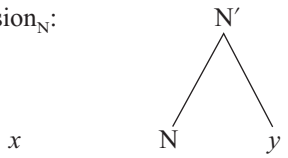
Two scholars, Safir (1991) and Roeper (1993), have noted the need to distinguish arguments that can be syntactically expressed and those that cannot.

Safir (1991) maintains that co-construal of an implicit internal argument of a deverbal nominal with a matrix subject (*John's claims*) refers directly to the lexical conceptual structure (LCS: Hale & Keyser 1987) and not necessarily to the lexical structure.

(58) John's claims {merit/deserve} {investigation/rejection/revision}.

He thus argues that a deverbal nominal like *revision* possesses the lexical entry in (59).

(59) $\text{revision}_N$:




LCS: *x* engages in the activity of changing, reordering, or modifying *y*.

Safir's analysis thus accommodates implicit arguments that are not syntactically projected, that is, arguments that appear only in the LCS. Yet Safir correlates the external/internal distinction with syntactic visibility: An implicit external argument appears in the syntactic lexical structure, while an



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implicit internal argument is not represented in lexical structure at all. This means that a syntactically invisible implicit argument is necessarily an internal argument. This might appear to be plausible for deverbal nominals, but I doubt if one can coherently argue that the suppressed argument of a middle is an internal argument.

Roeper (1993) also distinguishes implicit arguments from implicit roles in terms of syntactic projection: An implicit argument can be so projected, while an implicit role cannot. Thus while the base verb *help* possesses an Agent and a Theme in its theta grid, the corresponding nominals *help* and *helping* differ with respect to syntactic expression of arguments: In (60a) the nominal *help* does not allow expression of the Theme, which is an implicit role, whereas in (60b) *helping* allows expression of the Theme, which is an implicit argument.

(60) (a) the help of John (John = subject)
(b) the helping of John (John = subject or object).

Roeper argues that the empty nominal bracket in (61) blocks the projection of the Theme onto a syntactic position, while in (62) the *-ing* affix carries the thematic grid and hence allows expression of the Theme.

(61) the $[[\text{help}]_V\ \text{ø}]_N$ of $\text{John}_i$
$[\text{AG}_i,\ \text{TH}]\text{ø}]$.
(62) the $[\text{help}]_V\ \ +\text{ing}]_N$ of $\text{John}_i$
$[\text{AG},\ \text{TH}_i]\ \ [\text{AG},\ \text{TH}_i]$ (Roeper 1993: 190)

This approach seems difficult to apply to middles, however, for middle formation involves no category change. The verbal character of middles is confirmed by the fact that some middles may occur in the past tense or in the progressive, like other verbs (section 3). Therefore, there is no reason to posit an empty affix for middles.[9]

In summary, then, both Safir's (1991) and Roeper's (1993) analyses are targeted at derived nominals and are not directly applicable to middles.[10]

### 6.2.3 *Conceptual structure*

I propose that an appropriate level to state 'suppression' of an argument in middles is that of conceptual structure in the sense of Jackendoff (1987a, 1987b, 1990), which encodes information concerning syntactic expression of

[9] Pesetsky (1995: 261) hypothesizes a zero-morpheme G for middles. But this zero-morpheme is problematic (Ernst 1998), and even Pesetsky admits a problem with his proposal (p. 263). See also Iwata (1993) and Bouchard (1995) for problems with Pesetsky's zero-morpheme analysis.

[10] Williams (1987, 1994) discusses closely related phenomena, but there is nothing about the distinction between implicit arguments that are syntactically projected and those that are not.



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an argument separately from the argument itself. Thus middle formation of *handle* can be stated as in (63).

(63) $[\text{HANDLE}([\text{X}]_i, [\text{Y}]_j)] = \rangle[\text{HANDLE}([\text{X}], [\text{Y}]_i)]$

Roman alphabet subscripts express correspondences between syntactic and conceptual positions. Here i and j indicate correspondences to subject and direct object positions, respectively. Therefore, suppression of the external argument translates into deleting the index i, and externalization of the direct internal argument changing the index from j to i. In this way an argument can be 'suppressed' without being deleted.[11]

At this point, let us digress slightly and consider how to differentiate middles from passives and ergatives. Two of the three possess an implicit argument, but in middles it is present only semantically and cannot be expressed syntactically, while in passives it can be syntactically expressed. Ergatives do not involve an implicit argument.

Take the verb *sink* as an illustration. Intransitive *sink*, an ergative, has a conceptual structure in (64).

(64) $[\text{GO}([]_i, [\text{DOWN FROM SURFACE OF WATER}])]$

Transitive *sink*, the causative of intransitive *sink*, is represented in (65), from which the passive participle *sunk* is formed by 'syntactically' suppressing the agent argument.

(65) $[\text{CAUSE}([]_i, [\text{GO}([]_j, [\text{DOWN FROM SURFACE OF WATER}])])]$

In order to properly capture the distinction between passives and middles, it is necessary to formally distinguish implicit arguments that are visible to syntax from those that are not. Let us annotate a syntactically visible implicit argument with a subscript C (= chômeur). Then the passive participle *sunk* is formed first by changing the index of the first argument of CAUSE from i to C and the index of the first argument of GO from j to i.

(66) $[\text{CAUSE}([]_C, [\text{GO}([]_i, [\text{DOWN FROM SURFACE OF WATER}])])]$

This conceptual structure is then embedded inside SUCH-PERF, where PERF maps an Event onto a State of that Event having taken place, and SUCH maps a State onto a Property (Jackendoff 1987b: 25; see also Iwata 1993, 1995).

(67) $[_{\text{Property}}\,\text{SUCH}[_{\text{State}}\,\text{PERF}([\text{CAUSE}([]_C,$
$[\text{GO}([]_i, [\text{DOWN FROM SURFACE OF WATER}])])])]]$

[11] Noguchi (1989) proposes essentially the same analysis of middle formation.

(i) $[_{\text{Event}}\,\text{CAUSE}([\text{X}]_i, [\text{GO}([\text{Y}]_j, [\text{Z}])])]$.
$\Rightarrow [_{\text{State}}\,\text{CAUSE}([\text{X}], [\text{GO}([\text{Y}]_i, [\text{Z}])])]$ (Noguchi 1989: 163)



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Thus while the implicit argument of a middle bears no subscript as in (63), that of a passive has a subscript C as in (67).

The introduction of a subscript C is reasonable, for the distinction between arguments with respect to syntactic visibility is necessary anyway. There are many cases of an implicit argument that can be related to syntax via adjunct rules (see Jackendoff 1987b, 1990). These implicit arguments are annotated with C, to be distinguished from the implicit arguments that are present only in semantic structure and never appear in syntax (see Jackendoff, Maling & Zaenen 1993, Culicover & Jackendoff 1995), which are without any subscripts.

Pushing this idea one step further, we can define conceptual arguments eligible for syntactic expression as those annotated with a subscript; indices like i or j would cover those that assume grammatical relations like subject or direct object, while the index C would apply to those that appear in adjunct phrases like a passive *by*-phrase. We can now state the relationship between argument structure and conceptual structure as follows: argument structure is a list of arguments projected from conceptual argument positions bearing a subscript.[12]

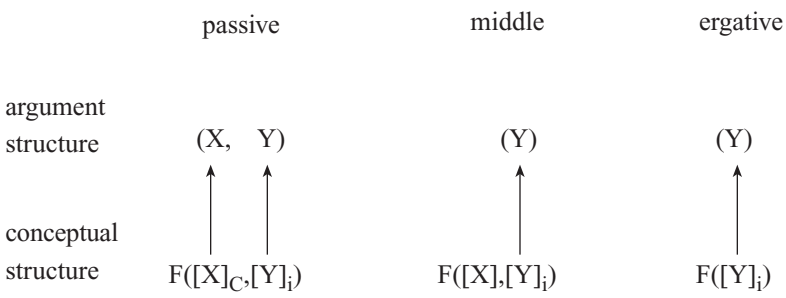



*Figure 1*
The relation between argument structure and conceptual structure

Distinguishing between the two types of implicit arguments allows us to account for certain control phenomena of passives and middles. Control into purpose clauses is possible with passives, but not with middles.

(68) (a) Bureaucrats were bribed to keep them happy.
(b) *Bureaucrats bribe easily to keep them happy.
(Keyser & Roeper 1984: 407)

[12] This view gives substance to Jackendoff's (1990) claim that argument structure is 'an abbreviation for the part of conceptual structure that is "visible" to the syntax' (p. 48).



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In contrast, *without*-phrases can be controlled by both passives and middles.[13]

(69) (a) This blouse was washed without adding any special product.
(b) This blouse washes normally without adding any special product.
(Vinet 1986: 283)

These facts can be captured by saying that purpose-clauses refer to argument structure, while the *without*-phrase refers only to conceptual structure.

Returning to middle formation, my analysis also has the advantage of handling cases with a non-generic implicit argument. It has often been claimed that the implicit argument of middles is associated with the reading of 'people, in general' (Levin 1982, Fellbaum 1985, 1986) or 'arb' for arbitrary reference (Fagan 1992). As observed in section 6.1., however, some middles may contain a specific implicit agent when they appear in the progressive or in the past tense.

(46) (a) This car handles smoothly.
(b) This car is handling smoothly.
(c) This car handled smoothly.

(46b) and (46c) are not the only cases where the implicit argument takes on a specific value. Consider (70).

(70) The car handles smoothly when Sophy drives it.
(Rosta 1995: 127)

One cannot associate the implicit argument in (70) with the reading of 'people, in general', for the putative paraphrase in (71) would fail to convey that Sophy is the driver.[14]

(71) People, in general, handle this car smoothly when Sophy drives it.

These examples indicate the necessity to associate the implicit argument with a specific value. Thus (46c) receives the following representation.

(72) $[_{\text{Event}}\,\text{INCH}[_{\text{State}}\,\text{HANDLE}([\beta],[\text{THIS CAR}]^{\alpha})]]$
$[\text{AFF}([\text{SOPHY}]^{\beta},[\alpha])]$

In the thematic tier, the conceptual structure for a middle is embedded inside INCH, which maps a State onto an Event. The action tier expresses that Sophy did something to the car. The Greek letters indicate binding relations between conceptual arguments in the two tiers, yielding the reading that

[13] I thank both of the referees for bringing to my attention Vinet (1986, 1987).

[14] This challenges analyses that attempt to derive the genericity of middles from generic quantification over the implicit argument (Levin 1982; Fellbaum 1985, 1986; Fagan 1992). In (70) the implicit argument is specific yet the middle is generic.



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Sophy is the agent of the handling activity.[15] (46c) can be thus straightforwardly accommodated by means of conceptual structure. But none of the versions of argument structure in (54) can achieve the same result.

To recapitulate, the middle formation in (63), stated by means of conceptual structure in the sense of Jackendoff (1987a, 1987b, 1990), is capable of accommodating an implicit argument with a specific value, as well as properly stating 'suppression' of an argument, without invoking ad hoc machinery.[16] Middle formation is better handled at the level of conceptual structure than at the level of argument structure as illustrated in (54).[17]

## 7. *ALL BY ITSELF* ONCE AGAIN

The discussion so far has confirmed the widely held assumption that middles necessarily involve an implicit argument. Two remarks are in order here about the compatibility between an implicit argument and *all by itself*.

---

[15] Since (72) contains more material than (63), conceptual-syntactic correspondence might appear to be less straightforward. But when multiple conceptual positions are related via argument binding, only BINDING ARGUMENTS IN ONE OF THE TIERS are held to be responsible for syntactic correspondence (Jackendoff 1990: 64). And I am assuming, contra Jackendoff (1990: 129–130), that it is the thematic tier rather than the action tier which primarily encodes information concerning conceptual-syntactic correspondence.

Consequently, (72) is like (63) in that only the second argument of HANDLE, which is in the thematic tier, is related to a syntactic position. The first argument of HANDLE and the first argument of AFF are semantically compatible, so that the former is bound by the latter via $\beta$. But neither is a binding argument in the thematic tier: the former is a bound argument in the thematic tier, the latter a binding argument in the action tier. Accordingly, neither is linked to a syntactic position.

[16] Stroik (1992, 1994) argues that the implicit argument of middles can be expressed in a *for*-phrase as in the following:

(i) (a) That book read quickly for Mary.
(b) No Latin text translates easily for Bill. (Stroik 1992: 131)
(ii) (a) This car should shift easily for me/one.
(b) Math books will never read easily for me/one. (Stroik 1994: 167)

However, judgments are quite subtle. My informants reacted rather negatively to these sentences. Even if these sentences are minimally acceptable, the *for*-phrase would be introducing a Beneficiary role, as Zribi-Hertz (1993) demonstrates. Therefore, for those speakers who share Stroik's judgments, an adjunct rule associating a Beneficiary *for*-phrase and a middle is available. Accordingly, (ia) would be given the representation in (iii).

(iii) $[\text{READ}([\beta], [\text{THAT BOOK}])]^{\alpha}$
$[\text{FOR}[\text{AFF}^{+}([\alpha], [\text{MARY}]^{\beta})]]$

[17] I do not mean to say that every characteristic of middles is captured by the middle formation in (63); it accounts for only one characteristic of middles, that is, the presence of an implicit argument. Other characteristics are to be treated separately. Thus the adverbial effect along with adverbial position is to be functionally explained, as noted in Appendix B; the genericity of middles ought to be approached in a theory of generics in general, and so on.



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7.1 *An exception*

First, recall that the Independence-of-Action middle *communicate* is acceptable with *all by itself* and similar adverbials, as noted in 4.2.

(37) (a) This idea communicates well on film {all by itself/automatically}.

*Communicate* in (37a) behaves as a middle in other respects like adverbial effect or resistance to progressive aspect. We thus have an instance of a middle that is compatible with *all by itself*.

One factor that seems to contribute to the acceptability of (37a) is the adverb *well*. Fellbaum (1986) argues that two kinds of adverb are permitted in middles: facility adverbs like *easily* and event adverbs like *well*. She observes that *well* may refer to the outcome of the action:

(73) (a) The paint sprays on well. (the result is good)
(b) This fabric washes well. (comes out of the wash in good shape)
(Fellbaum 1986: 10)

Since the focus is on the outcome of the action rather than on the action, the implicit agent performing the action is defocussed. Accordingly, (37a) is more likely to be interpreted as denoting an event independent of its implicit agent. In fact, the sentence becomes less acceptable when the adverb is replaced with *easily*, which more strongly implies an implicit agent because of its focus on the performability of the action.

(74) (a) This idea communicates easily on film.
(b) ?This idea communicates easily on film {all by itself/automatically}.

Another relevant factor is the fact that the event described in (37a) is non-physical. Lynne Roecklein (personal communication) has pointed out that non-physical events are easier to conceive of as taking place without the intervention of an external cause than physical events are. Thus middles which denote purely physical events do not tolerate *all by itself* even when modified by *well*.

(75) You can go to that laundromat at the corner. It has a special washing machine. There, this fabric washes well {*automatically/*all by itself}.

In any case, (37a) is the only case that is compatible with adverbials like *all by itself*, as far as I know.[18] No other example of a middle that is compatible with *all by itself* has so far been reported in the literature. It can be safely regarded as a genuine exception, whose existence does not invalidate the claim that middles are generally incompatible with *all by itself*.

[18] Notice that I am not claiming that the middle of *communicate* in (37a) lacks an implicit argument. I am simply saying that in (37a) the implicit argument is present but defocussed for the reasons mentioned above, and hence *all by itself* may appear.



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7.2 *Ergatives*

Another point to note is that while practically all middles are incompatible with *all by itself*, the converse is not the case: not all the verbal predicates incompatible with *all by itself* are middles.

It is generally assumed that *all by itself* is compatible with ergatives as noted in section 2.1., but actually ergatives are not always compatible with *all by itself*. Ergatives do not encode an implicit argument at the level of semantic structure or argument structure, but they may be used in contexts where an instigator of the denoted event is identifiable at the level of discourse. Consider the following from Fellbaum (1986).

(76) (a) The door closes easily; you just have to press down. (middle)
(b) The door closes easily; it only takes a gust of air. (ergative)
(Fellbaum 1986: 6)

Fellbaum argues that, contra Keyser & Roeper (1984), *The door closes easily* is actually ambiguous between middle and ergative readings, and that the two readings can be disambiguated as in (76).[19] (76a) is a middle implying a non-specific agent for whom the volitional act of closing the door is easy; (76b) is an ergative referring to events generated by an easily provoked cause (Fellbaum 1986: 6).

Note that adverbials like *all by itself* cannot be appended to (76b).

(77) *The door closed easily {all by itself/automatically}; it only took a gust of air.

This is precisely because of the cause introduced by the second clause of the sequence.

Similarly for (78), involving intransitive *break*, a bona fide ergative verb.

(78) I threw the plate against the wall, and it broke.
(Levin & Rappaport 1995: 107)

Here *break* denotes only the event of the plate breaking, but clearly the agent in the preceding clause brought about that event. This sentence, too, cannot be modified by adverbials like *all by itself*.

(79) I threw the plate against the wall, and it broke {*all by itself/*automatically}.

[19] Actually, Keyser and Roeper (1984) qualify their claim, saying that some people find (i) acceptable.

(i) Plants die easily in the shade.

They argue that for these people, (ii) is ambiguous between middle and ergative readings, fully in accord with Fellbaum.

(ii) The door opens easily.

I am grateful to an anonymous referee for bringing this point to my attention.



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*All by itself* is sensitive to whatever external cause there is, whether it is introduced only at the level of discourse or lexically encoded as an implicit argument.

Thus while middles are incompatible with *all by itself*, ergatives can be so, too. Compatibility with *all by itself* alone does not always inform us correctly about the presence or absence of an implicit argument. It should be kept in mind that when we say that the middle/ergative distinction is to be captured in terms of the presence/absence of an implicit argument, this pertains to semantic structure or argument structure.

## 8. Conclusion

Middles display particular characteristics regarding genericity, the adverbial effect, modality, responsible subjects and implicit arguments, but these characteristics vary in relative importance: Some of the features are necessary while others are merely typical. Genericity and modality belong to the latter category and cannot be defining characteristics, contra Massam (1992). In contrast, the presence of an implicit argument is a defining characteristic of middles, in accord with the usual understanding in the literature.

The implicit argument of middles is syntactically unexpressed but semantically present, and it can figure in the interpretation of middles which express specific events. These aspects of an implicit argument can be adequately captured by changing the index of the 'suppressed' argument and retaining the argument position at the level of conceptual structure in the sense of Jackendoff (1987a, 1987b, 1990).

## APPENDIX A: *SELL*

Middles favor the present tense with a generic meaning, but as noted in section 3, a specific event reading is possible for some middles. An apparently puzzling case in this connection is *sell* as in (i).

(i) This book sells well.

Compared with ordinary middles, which exhibit resistance to a specific-event interpretation, *sell* occurs in the past tense or in the progressive far more readily.

(ii) (a) This book sold well.
(b) This book is selling well.

This is due to the fact that *sell* does not involve 'genericity' the way ordinary middles do. Ordinary middles state the potentiality of an event without any commitments to actual occurrences. For example, according to



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Fagan (1992: 152), (iii) simply means that the organizer is designed so that it is capable of being mounted securely, and could be true even if the organizer has never been mounted nor ever will be.

(iii) This shoe organizer mounts securely on a door or against a wall.

In contrast, (i) above generalizes over actual events (Fagan 1992: 55, 160); it means that books of this title are bought by people in large numbers. Thus it is more like a habitual than a generic meaning.

Habituals may be modified by adverbials like *every day* (iva), and they may be turned into progressives to indicate a temporary habituality (ivb).

(iv) (a) Delmer walks to school every day.
(b) Delmer is walking to school these days.

*Sell* behaves similarly, confirming its habitual character.

(v) (a) This book sells well every day.
(b) This book is selling well these days.

Notice that ordinary middles cannot be modified by *every day*, and the progressive, if possible, describes an ongoing event and is therefore incompatible with *these days*.

(vi) (a) *This book reads easily every day.
(b) *This book is reading easily these days.

Thus the sentences in (ii) are to be treated differently from the specific event reading of ordinary middles.

## APPENDIX B: ADVERB POSITION

Fujita (1994) advances a purely syntactic account of middles within the framework of the Minimalist Program. According to this analysis, an object moves to Spec AgrSP for nominative Case checking and a middle verb raises to the head of *v*P (= Voice Phrase). Since this derivation proceeds with the structure for the Agentive Causative, this account automatically captures the fact that an implicit argument of a middle is an agent rather than a nonvolitional Cause.

Fujita claims that his analysis also accounts for the fact that a middle verb always precedes an accompanying adverb, a fact first pointed out by Fellbaum (1986).

(i) (a) The ship sinks easily.
(b) ?*The ship easily sinks.

This is as expected, since after overt verb raising to the position of *v*, which is higher than a VP, the middle verb always ends up preceding a VP adverb.



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Thus Fujita's analysis accounts for an implicit Agent and predicts adverb position without introducing unnecessary mechanisms. At least with respect to the second point, then, Fujita's account seems to be superior to a conceptual structure approach, which cannot possibly handle adverb placement.

It is rather doubtful, however, whether adverb position is fully syntactically determined. Ernst (1984) argues that adverbial positions are closely connected with discourse functions. He observes that 'VP adverbs are generally read as "presupposed" or "backgrounded" when they occur just before the main verb' (Ernst 1984: 329). On the other hand, postverbal adverbials are associated with a complementary function. '[A]n unusual or unexpected qualification of an action/event will most likely come after the verb' (Ernst 1984: 331).

Ernst observes that while in (iia) the adverb is emphasized, in (iib) the emphasis is more on the insulting than on the way it was done.

(ii) (a) She insulted me coolly.
(b) She coolly insulted me. (Ernst 1984: 330)

The following contrast illustrates this difference well. (iiia) is better than (iiib) as an answer to the question, where the adverb carries important information.

(iii) How did she insult you?
(a) She insulted me coolly.
(b) ??She coolly insulted me. (Ernst 1984: 330)

Thus whether or not the adverb carries the most important information is closely connected with its position in the sentence. With middles the adverb carries the most important information, for as Fellbaum (1986) notes, the adverbs are needed to add information to an otherwise given piece of information. Therefore, the adverb necessarily occurs postverbally; to place an adverb in preverbal position would result in adding essential information but at the same time treating it as presupposed or backgrounded, which is a contradiction.

This functional account predicts that even ergatives do not always allow an adverb in preverbal position, which is indeed the case. In (iv) *easily* provides essential information and therefore cannot occur preverbally.

(iv) (a) The door closes easily; it only takes a gust of air.
(b) *The door easily closes; it only takes a gust of air.

In contrast, an adverb acceptably occurs in preverbal position when the sentence reports a specific occurrence of an event.

(v) The door rapidly closed.

Furthermore, this functional analysis accounts for the behavior of adverbs in the following sentences, whose parallelism with the adverbs of middles has so far been unnoticed.



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(vi) (a) Steve dresses elegantly.
(b) *Steve dresses.
(vii) (a) The job paid us handsomely.
(b) *The job paid us.
(viii) (a) John worded the letter carefully.
(b) *John worded the letter. (Jackendoff 1972: 64)

Jackendoff argues that *dress*, *pay* and *word* must be subcategorized for an adverbial of some sort. But as Dinsmore (1981: 124) notes, these verbs simply do not give enough information by themselves to be informative in most contexts. Ernst (1984: 332) observes that given proper context, (vib)–(viiib) are acceptable: if Steve lives on a remote island where people have only recently begun wearing clothes, (vi) is an informative statement; (viib) could be the answer to (ix).

(ix) Was it a volunteer position, or did the job pay you?

Lastly, *word* can appear by itself, for example, in comittee meetings given to writing exams, as in (95):

(x) A: I know we picked the Luiseno for the phonology question, but have we worded it yet?
B: No, the chairman wants to word it himself.
(Ernst 1984: 332)

Clearly, these are manifestations of the adverbial effect, parallel to middles. Remarkably, the adverbs required for the sentences above may not occur preverbally.

(xi) (a) *Steve elegantly dresses.
(b) *The job handsomely paid us.
(c) ?John carefully worded the letter. (Ernst 1984: 333)

But certain adverbs may occur preverbally provided that the relevant adverbs can occur in sentence final position.

(xii) (a) Steve typically dresses elegantly.
(b) The job evidently paid us handsomely.
(c) John specifically worded the letter carefully.
(Jackendoff 1972: 64)

The same goes for middles.

(xiii) (a) This car {evidently/demonstrably} handles easily.
(b) This salami {typically/initially/certainly} slices easily.

The parallelism between middles and verbs like *dress* or *pay* is straightforwardly captured in a functional account: both classes of verbs need postverbal adverbs in order to make informative statements.



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In contrast, Fujita's syntactic account does not extend to verbs like *dress* or *pay* and thus fails to capture their obvious parallel with middles. To claim that these verbs raise to *v* for checking some morphological features, like middles, is quite far-fetched.

Thus while a Jackendovian conceptual structure approach cannot handle adverb placement, a purely syntactic account does not seem to be a viable solution either. Rather, a functional account seems to be on the right track.

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