ON MIDDLE CONSTRUCTIONS
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INTRODUCTION
Middle constructions (Palmer (1987)) can be used in a passive sense in an active voice, as alluded to in (1):

(1) a. These shirts wash well.
   b. The meat cuts well.

As pointed out by Palmer (1987), in (1a) and (1b) these uses of the active in the passive sense are adverbial in that they normally occur with adverbs. That is to say, the intransitive form usually requires some kind of adverbial expression. Palmer (1987) points out that in (1a), *the shirts wash well* means that they can be or are washed successfully. Thus, what is indicated in (1) is not only an activity but also a quality or characteristic.

A point to note is that most of middle constructions involve a generic interpretation. Let us observe the following example:

(2) This car handles smoothly.

What (2) suggests is that it involves a generic person. A further point to note is that (2) involves a generic person, but (3a) and (3b) involve a specific speaker.

(3) a. This car is handling smoothly.
   b. This car handled smoothly.

As pointed out by Park (2009), (3a) and (3b) are ruled out if the event is independent of the speaker:

(4) 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.*

The so-called middle constructions involve a generic interpretation, as illustrated in (2) or non-generic interpretation, as indicated in (3). When it comes to middle constructions, the subject is an undergoer of a change and something is asserted about the subject (e.g. Condovardi (1989), Kemmer (1993), Alexiadou (2010), Alexiadou and Doron (2012)). The main purpose of this paper is to show that an intransitive verb can occur in the middle construction only when a definite NP has an event which is an intrinsic characteristic or property of the definite NP. There are two main hypotheses on how the well-formedness of middle constructions is accounted for. One was proposed by Fellbaum & Zribi-Hertz (1989) and the other by Chung (1995). Fellbaum & Zribi-Hertz (1989) claim that an argument A of a verb or predicate is affected by the action or process P referred to by the verb. Chung (1995) contends that unless there is a cause for an event, the caused event cannot take place. However, Fellbaum & Zribi-Hertz's (1989) hypothesis works when the internal argument is a material noun or proper noun and Chung's (1995) hypothesis is effective only when there is a cause-effect relationship in the middle construction. This paper argues that the subject of middle constructions must be a definite NP. This paper further argues that an intransitive verb can be used as a middle verb only when a definite subject has an event which is an intrinsic characteristic or property of the definite subject. There are tangible reasons to argue for this claim. In addition, this paper emphasizes that an abstract noun cannot be the subject of a middle verb. Finally, this paper provides some details of how middle constructions are syntactically constrained.

ABSTRACT
The ultimate goal of this paper is to show that an intransitive verb can occur in the middle construction only when a definite NP has an event which is an intrinsic characteristic or property of the definite NP. There are two main hypotheses on how the well-formedness of middle constructions is accounted for. One was proposed by Fellbaum & Zribi-Hertz (1989) and the other by Chung (1995). Fellbaum & Zribi-Hertz (1989) claim that an argument A of a verb or predicate is affected by the action or process P referred to by the verb. Chung (1995) contends that unless there is a cause for an event, the caused event cannot take place. However, Fellbaum & Zribi-Hertz's (1989) hypothesis works when the internal argument is a material noun or proper noun and Chung's (1995) hypothesis is effective only when there is a cause-effect relationship in the middle construction. This paper argues that the subject of middle constructions must be a definite NP. This paper further argues that an intransitive verb can be used as a middle verb only when a definite subject has an event which is an intrinsic characteristic or property of the definite subject. There are tangible reasons to argue for this claim. In addition, this paper emphasizes that an abstract noun cannot be the subject of a middle verb. Finally, this paper provides some details of how middle constructions are syntactically constrained.

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event cannot take place” (Chung 1995: 276). However, all middle constructions do not show that there is a cause-effect relationship. In section 3.1, we contend that the subject of middle constructions must be a definite NP. In section 3.2, we propose the middle construction formation condition that an intransitive verb can occur in the middle construction only when a definite NP has an event which is an intrinsic characteristic or property of the definite NP. In section 3.3, we maintain that an abstract noun cannot be the subject of a middle verb. In section 3.4, we provide some evidence that middle constructions are syntactically constrained.

Two Hypotheses of Middle Constructions

The Affectedness Constraint Hypothesis

Fellbaum&Zribi-Hertz (1989) claim that “an argument A of a verb or predicate is affected by the action or process P referred to by the verb” (Fellbaum&Zribi-Hertz (1989: 28)). In what follows, we illustrate whether or not their affectedness constraint hypothesis works for middle constructions:

(5) a. The bottle breaks easily.
   b. *The Eiffel Tower sees from my window.

(5a) is grammatical since the patient the bottle is affected by the action of being broken easily. On the other hand, (5b) is ungrammatical since the internal argument Eiffel Tower cannot be affected by the action of seeing from my window. Thus, Fellbaum & Zribi-Hertz’s affectedness constraint hypothesis can capture the grammaticality of (5a) and the ungrammaticality of (5b). Their hypothesis is further supported by the fact that in (6), the internal arguments are affected by the action of the relevant verbs, respectively:

(6) a. Korean cars handle easily.
   b. The dog biscuit cuts and chews like meat.

More specifically, (6a) is grammatical due to the fact that the internal argument Korean cars are affected by the action of handling easily. Likewise, (6b) is grammatical since the argument the dog biscuit is affected by the action of cutting and chewing like meat. Thus, Fellbaum & Zribi-Hertz’s (1989) hypothesis can account for the grammaticality of (6a) and (6b). It must be noted, however, that Fellbaum & Zribi-Hertz’s (1989) hypothesis works when the internal argument is a material noun or proper noun. Let us observe the following example:

(7) The ice cream scoops well.

Is well-formed since the ice cream is a material noun and affected by the action of scooping well. Thus, when the internal argument is a material noun, Fellbaum & Zribi-Hertz’s (1989) hypothesis works in middle constructions. Likewise, when the internal argument is a proper noun, middle constructions can be accounted for by the affectedness constraint hypothesis:

(8) Mary photographs well.

As illustrated in (8), when the internal argument is a proper noun, the affectedness constraint hypothesis works. In (8), the proper noun Mary is affected by the action of photographing well. As observed above, the affectedness constraint hypothesis works when the internal argument is a material noun or proper noun. However, the affectedness constraint hypothesis poses a problem in providing accounts of the following middle constructions:

(9) The piano plays easily.

(9) is well-formed even though in (9), the internal argument the piano is not affected by the action of playing easily. Furthermore, the affected constraint hypothesis does not work for the following middle construction:

(10) His novel is selling like hot cakes.

As expected, the internal argument his novel is not affected by the action of selling like hot cakes. We thus conclude that Fellbaum & Zribi-Hertz’s (1989) hypothesis works when the internal argument is a material noun or proper noun.

The Causative Constraint Hypothesis

Chung (1995) proposes the causative constraint hypothesis that a transitive verb can occur in middle constructions only when the subject carries the feature of causer:

(11) Causative Condition

Unless there is a cause for an event, the caused event cannot take place. (Chung 1995: 276)

Chung (1995) assumes that the subject in middle constructions carries the feature of causer. As indicated in (12), all the subjects can occur as the internal argument of middle constructions since the subjects are the cause of the event:

(12) a. The glasses breaks easily. (Patient)
   b. The books read easily. (Theme)
   c. The marks hits easily. (Goal)
   d. The piano plays easily. (Instrument)
   e. The dogs frighten easily. (Experiencer)

In the case of (12a), a property of the glasses is the cause of the event of being broken. In the case of the other examples, the properties of the internal arguments are the cause of the event in each case. However, let us observe the following example:

(13) a. Mary photographs well.
   b. Greek translates easily.

What (13a) suggests is that a property of the internal argument Mary is not the cause of the event of photographing well. Likewise, (13b) indicates that a property of the subject Greek is not the cause of the event of translating. All these in turn suggest that all middle constructions do not show that there is a cause-effect relationship.

Middle Constructions

The Internal Argument of Middle Constructions

Park (2009) points out that the subject of middle constructions has the definiteness. We assume, along with Park (2009), that the internal argument of middle constructions shows the definiteness, as indicated in (14):

(14) a. Korean cars handle easily.
   b. The dog biscuit cuts and chews like meat.
   c. His novel is selling like hot cakes.
   d. The steak we ate yesterday cuts like butter.

As alluded to above, the internal arguments of middle constructions must be a definite NP. Hence, we propose the definite NP condition in which the subject of middle constructions must be a definite NP:
(15) Definite NP Condition

The subject of middle constructions must be a definite NP. Definite NP: the NP, that NP, this NP, these NP, adjective NP, 's NP, no NP, proper noun, NP with semantic definiteness

As exemplified below, (16a), (16b), (16c), and (16d) lend their support to the claim that the subject of middle constructions must be a definite NP:

(16) a. The piano plays easily.
    b. The glasses break easily.
    c. This bottle breaks easily.
    d. This piano plays easily.

We wish to argue that one of the reasons why (16a), (16b), (16c), and (16d) are grammatical is that the subjects of the middle constructions are definite NPs, as indicated in (15). However, let us observe the following middle construction:

(17) Love letters write easily.

At a glance, love letters are assumed to be an indefinite NP, but we try to argue that letters include love letters and the latter are the subcategory of the former, which indicates that compared to the former, the latter carries the semantic definiteness. Park (2009) points out that (18a) and (18b) are ungrammatical and we attribute the ungrammaticality of (18a) and (18b) to the definite NP condition:

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

(Park 2009: 137)

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

(Park 2009: 137)

Clearly, (18a) and (18b) violate the definite NP condition since the internal arguments bureaucrats and chickens are indefinite NPs, which leads to the ungrammaticality of (18a) and (18b). On the other hand, (19a) and (19b) meets the definite NP condition since the internal arguments in question are definite NPs, hence the grammaticality of (19a) and (19b). We thus conclude that the subject of middle constructions must be a definite NP.

The Middle Construction Formation Condition

In this section, we propose the following condition on the middle construction formation:

(20) Middle Construction Formation Condition:

An intransitive verb can occur in the middle construction only when a definite NP has an event which is an intrinsic characteristic or property of the definite NP.

Let us consider the following example in order to verify whether or not (20) works for middle constructions:

(21) This bottle breaks easily.

This sentence meets the definite NP condition since the internal argument this bottle is a definite NP in accordance with the definite NP condition and the definite NP this bottle has the event of being broken easily, which is an intrinsic characteristic or property of the definite NP this bottle. Clearly, (21) observes the middle construction formation condition, which leads to the grammaticality of (21).

Now let us observe the following example:

(22) The dog biscuit cuts and chews like meat.

The reason why this sentence is grammatical is that the internal argument the dog biscuit is a definite NP and it has the event of cutting and chewing like meat, which is an intrinsic characteristic or property of the definite NP the dog biscuit. Thus, the middle construction formation condition predicts that (22) as the middle construction is well-formed.

Now let us examine the following sentence:

(23) The dogs frighten easily.

Again, the middle construction formation condition predicts that the intransitive verb frighten can occur in the middle construction since the dogs meets the definite NP condition and it has the event of frightening easily, which is an intrinsic characteristic or property of the dogs. Exactly the same can be said about the following middle construction:

(24) The steak we ate yesterday cut like butter.

The internal argument the steak meets the definite NP condition since in (24), the steak is a definite NP, and the subject the steak we ate yesterday has the event of cutting like butter, which is an intrinsic characteristic or property of the steak. We thus conclude that for this reason, the intransitive verb cut can occur in the middle construction.

Now let us observe the following middle construction which is grammatical:

(25) The piano plays easily.

In (25), the definite NP condition is met since the piano is a definite NP, and it has the event of playing easily as its intrinsic characteristic or property. Clearly, this sentence observes the middle construction formation condition, which leads to the grammaticality of (25).

Now let us consider the following sentence which is ungrammatical:

(26) *The Eiffel Tower sees from my window.

This sentence meets the definite NP condition since the internal argument of see is the definite NP the Eiffel Tower. However, the Eiffel Tower has the event which is not its intrinsic characteristic or property. That is to say, the event of seeing from my window is not an intrinsic characteristic or property of the definite NP the Eiffel Tower, which leads to the ungrammaticality of (26).

Now let us observe the following example which is ungrammatical:

(27) *This poem writes easily.

This sentence meets the definite NP condition that the subject of middle constructions must be a definite NP since the subject of write is the definite NP this poem. However, the event of being written easily is not an intrinsic characteristic or property of the definite NP this poem. Thus, this sentence is ungrammatical by violating the middle construction formation condition that a definite NP must have an event which an intrinsic characteristic or property of the definite NP.

Now let us consider the following sentence which is ungrammatical:

(28) *This poem writes easily.
(28) *This bridge builds easily.

To begin with, this sentence meets the definite NP condition since this bridge is a definite NP. However, the event of being built easily is not an intrinsic characteristic or property of this bridge, which leads to the ungrammaticality of (28) in accordance with the middle construction formation condition.

Now let us turn our attention to the following middle constructions:

(29) a. Mary photographs well.
   b. Greek translates easily.

In (29a), the internal argument Mary is unique and definite since she is a proper noun, which refers to the semantic definiteness. Thus, the subject Mary meets the definite NP condition that the subject of middle constructions must be a definite NP. In addition, the proper noun Mary has the event of photographing well, which is her intrinsic characteristic and thus observes the middle construction formation condition. When it comes to (29b), the internal argument Greek is one of languages and unique and thus meets the definite NP condition which the subject of middle constructions must be a definite NP. In addition, the definite NP Greek has the event of translating easily as its intrinsic characteristic or property. Thus, the intransitive verb translate can occur in the middle construction by observing the middle construction formation condition.

Now let us observe the following examples:

(30) a. The seat folds.
   b. The car drives.

Note that in these sentences, middle constructions are well-formed without adverbs. The reason why (30a) is grammatical is that there are seats which fold or there are seats which do not fold. When it comes to (30a), there is no violation of the definite NP condition since the internal argument the seat is a definite NP. In addition, the definite subject the seat has the event of folding as its intrinsic characteristic or property, which leads to the grammaticality of (25a). On the other hand, (30b) is also well-formed without an adverb. (30b) as information is useful only when we ask the following question: Does the car drive? In this sentence, the definite NP condition is met since the subject of drive is a definite NP. In addition, the definite NP the car has the event of driving as its intrinsic characteristic or property, which meets the middle construction formation condition.

The advantage of the middle construction formation condition is that it can explain why middle constructions allow the alternation of some adverbs. Let us examine the following middle constructions:

(31) a. The car drives well (easily).
   b. The salt pours well (evenly).

In (31a), the adverb well can be changed to the adverb easily. This in turn suggests that the middle construction formation condition is on the right track since adverbs are used in order to indicate an intrinsic characteristic or property of the definite NP subject. In (31a), the car can have the event of driving well or easily as its intrinsic characteristic or property. In (31b), on the other hand, in order to indicate an intrinsic characteristic or property of the definite subject the salt, the adverbs well and evenly can be used. In (31b), the definite NP the salt has the event of pouring well or evenly, which is an intrinsic characteristic or property of the salt. Thus, by assuming that an intransitive verb can occur in the middle construction only when a definite NP has an event which is an intrinsic characteristic or property of the definite NP, we can capture the alternation of adverbs in the middle construction. If an adverb is changed to another one in the middle construction, an intrinsic characteristic or property of the definite NP is changed.

Another advantage of the middle construction formation condition is that it can explain why there are limits and restrictions on adverbs. Adverbs related to the agent cannot occur in the middle construction:

(32) a. *This little flashlight plugs in expertly.
   c. *Cotton irons cautiously.

As alluded to in (32), adverbs which must be used together with the agent cannot be used in the middle construction since they cannot indicate an intrinsic characteristic or property of the definite subject. We thus conclude that intransitive verbs and adverbs which occur in the middle construction are used together to indicate an intrinsic characteristic or property of the internal argument.

A Definite NP and Abstract Nouns

The main purpose of this section is to show that the definite NP must not be an abstract noun. We wish to argue that it is difficult for an abstract noun to have the event which is its intrinsic characteristic and property since it is abstract. Hence, we propose the abstract noun constraint as follows:

(33) Abstract Noun Constraint

An abstract noun cannot be the subject of a middle verb.

It should be noted that the abstract noun constraint is a necessary part of the definite NP condition since the former can be derived from the latter. In order to verify that an abstract noun cannot be the subject of a middle verb, let us observe the following sentences:

(34) a. The piano plays easily.

When it comes to (34a), the definite NP condition is met since the subject of the middle verb play is the definite NP the piano. In addition, the definite subject the piano has the event of playing easily as its intrinsic characteristic and property, which leads to the grammaticality of (34a). However, the sonata cannot have the event of playing easily since it is an abstract noun in accordance with the abstract noun constraint. We wish to argue that the reason why an abstract noun cannot be the subject of a middle verb is that it is difficult for the abstract noun to have the event which is its intrinsic characteristic or property since it is abstract. Our claim is further supported by the fact that (34b) and the following sentences show the same pattern in their grammatical status:

(35) a. *This poem understands easily.
   b. *The answer knows easily.
In (35a), the definite NP condition is met since the subject of *understand* is the definite NP *this poem*. However, *this poem* cannot have the event of understanding easily as its intrinsic characteristic or property since it is an abstract noun, which is in concordance with the abstract noun constraint, hence the ungrammaticality of (35a). Exactly the same can be said of (35b). In (35b), the sentence meets the definite condition since the subject of *know* is the definite NP *the answer*. However, (35b) is ungrammatical due to the abstract NP constraint that an abstract noun cannot be the subject of a middle verb. Thus, *the answer* cannot have the event of knowing easily as its intrinsic characteristic or property.

Also, the following sentence lends its support to the claim that an abstract noun cannot be the subject of a middle verb:

(36) *That issue discusses easily.

Even though the definite NP condition is met in (36), the definite NP *that issue* cannot have the event of discussing easily as its intrinsic characteristic or property since *that issue* is an abstract noun, which clearly indicates that for sure, an abstract noun cannot be the subject of a middle verb.

Now let us observe the following example:

(37) *That idea communicates.

In (37), the definite NP condition is met since the subject of *communicate* is the definite NP *that idea*, but *that idea* cannot have the event of communicating as its intrinsic characteristic or property since *that idea* is an abstract noun. Another reason why (37) is ungrammatical is that there is no adverb which is necessary for the formation for middle constructions. It is thus reasonable to hypothesize that an abstract noun cannot be the subject of a middle verb and that only material nouns, proper nouns, and common nouns can be the subject of a middle verb.

**Further Syntactic Constraints on Middle Constructions**

In this section, we briefly illustrate the syntactic constraints on middle constructions. First, as pointed out by Bassac and Bouillon (2002), one constraint is that the agent theta role is not constrained. Christian Bassac and Pierrette Bouillon (2002) points out, however, this adverbial paradigm is strongly constrained, as indicated in (42):

(42) a. Neutrogena rinses away completely/easily/well.
    b. *Neutrogena rinses away carefully/professionally/patiently.

We thus conclude that this kind of evidence indicates that middle constructions are syntactically constrained.

**CONCLUSIONS**

To sum up, we have maintained that an intransitive verb can occur in the middle construction only when a definite NP has an event which is an intrinsic characteristic or property of the definite NP. In section 2, we have examined two main hypotheses of middle constructions. Fellbaum & Zribi-Hertz (1989) claim that an argument A of a verb or predicate is affected by the action or process P referred to by the verb. However, Fellbaum & Zribi-Hertz’s hypothesis works when the internal argument is a material noun or proper noun. On the other hand, Chung (1995) proposes the causative constraint hypothesis that unless there is a cause for an event, the caused event cannot take place. However, all middle constructions do not show that there is a cause-effect relationship. In section 3.1, we have contended that the subject of middle constructions must be a definite NP. In section 3.2, we have proposed the middle construction formation condition that an intransitive verb can occur in the middle construction only when a definite NP has an event which is an intrinsic characteristic or property of the definite NP. In section 3.3, we have contended that an abstract noun cannot be the subject of a middle verb. In section 3.4, we have provided some evidence that middle constructions are syntactically constrained.

**References**


