Implicit Arguments in English Middles*

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Chung, Taegoo. 2001. Implicit Arguments in English Middles. *Korean Journal of English Language and Linguistics* 1-2, 331-347. In this study I investigate two implicit arguments in English middles: discharged argument and event argument. I argue that in middle formation external argument is discharged and event argument is suppressed. The proposal can account for the problems with the previous studies (Williams 1981; Keyser and Reoper 1984; Roberts 1987; Fagan 1988, 1992; Chung 2000). When a middle derives from the corresponding transitive verb, the subject argument is discharged, being an implicit argument. Argument discharge is different from argument suppression in the passives and argument deletion in the ergatives. I also argue that event argument is suppressed in middle formation. Event argument suppression is supported by the following: (i) The transitive verbs are always eventive but the corresponding middles are stative, and (ii) the middles are underlyingly eventive, (iii) the middles are "adorned" by certain manner adverbials.

1. Introduction

The goal of this paper is to investigate into the implicit arguments in English middles.[1] The sentences in (1) illustrate English middles:

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[1] Here I do not deal with PRO or pro, which are classified as implicit arguments by Roeper (1987). Roeper (1987:267) defines the implicit arguments as the ones which do not appear in explicit positions but retain syntactic functions. See Stroik (1992, 1995) for the PRO approach to middles, and Hoekstra and Roberts (1993) for the pro approach, and Chung (1996) for their problems.

(1) a. The vase breaks easily.
    b. This book sells well.
    c. This paper doesn't cut.
    d. The hand-made clothes could sell.
    e. This dress BUTTONS.

It is known that a middle is derived from its corresponding transitive sentence. That is, the middles in (2b) and (3b) below are derived from the transitives in (2a) and (3a), respectively:

(2) a. John broke the vase.
    b. The vase breaks easily.

(3) a. They sold this book.
    b. This book sells well.

The middle formation (MF), derivation of the middles from the transitive verbs, has several properties. First, the subject argument of the transitive is missing in the derived middle. Second, the object argument of the transitive becomes the subject argument in the middle. Third, the eventive aspect of the transitive changes to the stative one in the middle. Fourth, middles are 'adorned' by some materials like the manner adverb *easily*. Fifth, middles are agentive or eventive underlyingly.

To account for the properties of English middles, I propose that MF involves the three operations: discharge of the external argument, externalization of the (direct) internal argument, and suppression of event argument. This proposal is different from the previous studies (Williams 1981; Keyser and Roeper 1984; Roberts 1987; Fagan 1988, 1992), and it also differs from my earlier research, Chung (2000).

This study is organized as follows. Section 2 examines the previous studies of the implicit arguments in English middles.

Section 3 suggests a proposal to account for the properties of the middles. Section 4 is a conclusion.

2. Previous Studies

When a middle is derived from a transitive verb, the subject argument is missing. The missing argument has been dealt with differently in the literature. Several linguists suggest their views of the missing argument. Based on the views of the missing argument, the approaches to MF can be classified to suppression approach, chômeur approach, saturation approach, and deletion approach, which are termed by the present author.

2.1. Suppression Approach

Williams (1981) and Keyser and Roeper (1984) belong to the suppression approach. Williams (1981:94) suggests the following rule for MF:

(4) E(∅): erase the underline in the argument structure giving
       an argument structure with no external argument.

Let us take an example how the rule in (4) works. (5a) below is the corresponding transitive verb construction to the middle in (5b), and (6a) is the argument structure of the transitive verb and (6b) is the one of the middle verb.

(5) a. They sell these books well.
     b. These books sell well.

(6) a. sell: (Actor, Theme)
     b. sell: (Actor, Theme)

Williams (1981) marks the external argument by underlining it:

In (6a) Actor is the external argument and Theme is an internal argument. (6b) is a result after the rule E(Ø) applies to (6a). The argument structure in (6b) does not have the external argument and the two arguments are internal. Williams (1981) does not clearly specify the status of Actor argument in (6b). Since he argues that the same rule E(Ø) applies to the verbal passives where the external argument is suppressed, [2] he seems to assume that Actor argument in the middle (6b) is suppressed.

Keyser and Roeper (1984) treat MF exactly like passivization where the missing argument is suppressed, following the passivization of Chomsky (1981).[3] The suppressed argument may appear in the *by* phrase, and the remaining argument moves to the subject position to get case. In this respect, Keyser and Roeper's approach (1984) is not different from Williams' (1981).

However, the suppression approach cannot account for the contrast between passives and middles in (7) and (8):

(7) a. The vase was broken by John.

    b. The vase was broken [PRO to buy a new one].

(8) a. *The vase breaks easily by John.

    b. *The vase breaks easily [PRO to buy a new one].

The missing external argument of the passive verb may appear in the *by* phrase as in (7a), but that of the middle verb may not

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[2] The following shows how Williams' rule works in verbal passivization:

  i) Fred saw Bill.
  ii) Bill was seen by Fred.
  iii) E(Ø): see --→ seen
      (A, Th)   (A, Th) (Williams 1981, (28), (29))

[3] Keyser and Roeper (1984:401) present the following operations for passivization:

  i) [NP, S] does not receive a θ-role.
  ii) [NP, VP] does not receive case within VP, for some choice of NP within VP.

as in (8a). And the missing external argument of the passive verb can control PRO as in (7b), while that of the middle verb cannot as in (8b). The data in (8) suggest that the missing argument in the middle is different from that in the passive, and thus we cannot say that the missing external argument in the middle is suppressed.

2.2. Chômeur Approach

Roberts (1987) differentiates MF from passivization and thus his MF is different from Williams' (1981) and Keyser and Roeper's (1984). Roberts (1987) adopts the rule E(Th) for MF. E(Th) is one variant of the general rule E(X) of Williams (1981: 92) below:

(9) E(X): erase the underline on the external argument, if there is one and underline X. If X=0, then underline nothing.

When X is Theme, rule E(X) applies to the argument structure with Theme. For example, E(Th) applies to adjectival passivization, according to Williams (1981), and thus only the verbs with Theme may undergo adjectival passivization. And Roberts (1987) claims that only the verbs with Theme may undergo MF.

On the other hand, Roberts (1987) claims that a middle does not have an implicit argument (or suppressed argument), while a passive does. He proposes that in passivization the agent theta-role is assigned to the passive morpheme -ed, while in MF the agent theta-role becomes a chômeur ('unemployed', a term of Relational grammar), not assigned to any argument. Let us look at the operation in (11) proposed by Roberts for the middle in (10b) derived from (10a):

(10) a. They kill those chickens.

    b. Those chickens kill easily.

(11) *kill*: [θ_{agent}, θ_{theme}] → [{θ_{agent}}, θ_{theme}] (Roberts 1987:189)

The verb *kill* has the theta-roles θ_{agent} and θ_{theme}. The underlined external theta-role becomes a chômeur, {θ_{agent}}, after E(Th), which is not deleted but cannot be realized structurally as an argument.

However, Roberts's (1987) rule, E(Th), referring to the theta-role Theme, cannot explain MF which does not involve Theme. For example, the following middles do not have Theme:

(12) a. This book reads easily.

    b. Greek translates easily.

    c. The knife cuts well. (Chung 1995:275)

The surface subjects in (12) do not undergo 'change of state' or are not 'affected', but they form grammatical middles.

2.3. Saturation Approach

Fagan (1988) proposes that the external argument in the middles is assigned *arb*, adopting Rizzi's (1986) idea. The *arb*-assigned argument is not projected to syntax, being a saturated argument in the lexicon, and this argument has the generic interpretation 'people in general.' Let us call Fagan's proposal saturation approach. Fagan (1988) presents the following rules for MF:

(13) a. Assign *arb* to the external θ-role.

    b. Externalize the direct θ-role. (Fagan 1988:198)

Fagan (1988, 1992) explains the properties of the middles by the rules in (13). (13a) explains not only the agentive and

generic interpretation of the middles, but the missing argument's not playing a role in the syntax. (13b) indicates that MF is lexical, not syntactic. The rules in (13) do not refer to a specific θ-role like Theme, and thus Fagan does not face the problem that Roberts (1988) encounters in (12).

However, Fagan (1988) has a problem with a non-generic middle in (14) where the agent is specific, not generic:

(14) a. Latin texts do not translate easily for Bill.

   b. This kind of cheese cuts easily for experienced cooks.
      (Rapoport 1999, (9b), (18a))

The underlying agents of the middles in (14) are not generic since the missing argument is associated with the agents (or experiencers) in the *for* phrase.

2.4. Deletion Approach

Chung (2000) proposes that the subject argument of the transitive verb is deleted in middle formation. But this deletion approach does not distinguish middle formation from ergative formation with respect to the missing argument. Chung differentiates middles from ergatives by the event argument; the event argument in the middles is suppressed, whereas the one in the ergative is not, as shown below:

(15) Ergative formation (EF):

   $e, x <y> \rightarrow y < >$

(16) Middle formation (MF):

   $e, x <y> \rightarrow y < >, *e$

The difference between EF and MF is the presence and absence of the suppressed event argument, $*e$. As for the

external argument, x, it is deleted in EF and MF both. A problem with MF in (16) is that the deletion of external argument is not compatible with the suppressed event argument since an event may have an agent if the verb is an action verb.

3. Proposal

I propose that MF involves the operations in (17):[4]

(17) Middle Formation
    a. Discharge the external argument.
    b. Externalize a direct internal argument.
    c. Suppress event argument.

Rule (17a) states that the external argument is discharged in MF. A discharged argument cannot be projected to any syntactic argument position. Here 'discharge' is different from 'suppression' and 'deletion'. I distinguish the three operations in the following ways:

(18) a. Suppression: argument → adjunct
    b. Discharge: argument → chômeur
    c. Deletion: argument → Ø

Suppression deprives an argument of its argument status, changing it to an adjunct. The derived adjunct, or the adjunct associated with the suppressed argument, still plays a syntactic role as in the verbal passives below. The data in (7) are repeated as (19), where the suppressed argument may appear in the *by* phrase or it may control PRO:

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[4]Chung (2000) proposes the operation "Delete the external argument" instead of (17a). The other two operations in (17) are the same as those of Chung (2000).

(19) a. The vase was broken by John.

b. The vase was broken [PRO to buy a new one].

On the other hand, MF makes the subject argument of a transitive verb a chômeur argument, according to Roberts (1987). Consider the following middle formation:

(20) a. The boy cut the paper.

b. The paper cuts easily.

The subject argument *The boy* is missing in the middle, which is a chômeur. Here I claim that the missing argument is discharged in (20b). The discharged argument does not play any syntactic role like a suppressed argument, as shown below:

(21) a. *The vase breaks easily by John.

b. *The vase breaks easily PRO to buy a new one.

The discharged argument, however, affects the semantic interpretation. Thus, the sentence in (20b) has the underlying agent, 'people in general' and the sentence implies an event.

However, discharge operation differs from deletion in ergative formation. Let us consider the following ergative formation:

(22) a. John broke the vase.

b. The vase broke.

It is known that the subject argument of the transitive verb in (22a) is deleted completely in (22b). The deleted argument does not play any syntactic role like a suppressed argument:[5]

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[5]The data in (23) suggest that the event argument does not license the purposive clause or the *by* phrase since the ergative sentences always have the event argument. The more complicated data below are observed by Roeper (1987:299):

(23) a. *The vase broke by John.

   b. *The vase broke [PRO to buy a new one].

Furthermore, the deleted argument in an ergative does not play any semantic role. The ergative sentence in (22b) does not have any underlying agent. This is a difference between the two operations, discharge and deletion. Thus, discharge is different from suppression and deletion both. The three different operations on arguments are illustrated below:[6]

(24) Verbal Passivization:

   x <y> → <y>, (*x)

   (*x: suppressed argument)

(25) Middle Formation:

   e, x <y> → y < >, {x}, *e

   ({x}: discharged argument,[7] *e: suppressed event argument)

(26) Ergative Formation:

   e, x <y> → e, y < >

   (x: deleted)

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i) Flamingo are pink to attract the opposite sex.
ii) Animals may be unattractive to scare enemies.

[6]Chung (2000) presents the following for the three operations:

   i) Verbal Passivization:
       x <y> → <y>, *x (*x: suppressed argument)
   ii) Middle Formation:
       e, x <y> → y < >, *e (*e: suppressed argument)
   iii) Ergative Formation:
       e, x <y> → e, y < >

I will not discuss this problem here.

[7]I adopt the notation { } that Roberts (1987) uses for the chômeur argument.

The rule in (17a) does not refer to any specific θ-role and thus it does not have the problem that Roberts (1987) faces. Roberts's rule, E(Th), refers to Theme and thus it could not account for the grammaticality of the middles in (12), repeated as (27), where the subjects are not Theme:

(27) a. This book reads easily.
     b. Greek translates easily.
     c. The knife cuts well.

Finally, the rule in (17a) does not contain the rule assigning *arb* to the external argument, as in Fagan (1988). The missing argument in the middles, however, is not always generic, although the *arb*-assigned argument should be generic. Thus, the middles in (16), repeated as (28) below, where the missing argument is specific, are not problems with rule (17a):

(28) a. Latin texts do not translate easily for Bill.
     b. This kind of cheese cuts easily for experienced cooks.

Now let us consider the rule in (17b). This rule implies that MF is lexical, not involving syntactic NP movement. Fagan (1988) argues that the middle in (29a) is bad, which is a different judgement from Keyser and Roeper's (1984):

(29) a. ?John laughs at easily.
     b. John was laughed at. (Fagan 1988:194)

(29b) is a verbal passive which involves the syntactic process, 'reanalysis'. If the middle in (29a) is good, one may argue that MF is syntactic. However, judging that the sentence in (29a) is bad, Fagan (1988) claims that the above data support the lexical approach to MF. And rule (17b) forces the surface subject of the middle to be a direct internal argument of the transitive, not an

indirect internal argument, which does not matter in the passives as in (29b). This is another reason for the ungrammaticality of the middle in (29a).

The rule in (17b) can also explain the contrast between a middle and a passive. The rule states that the surface subject of the middle should be an argument of the verb which undergoes MF. But this is not the case in the passive, as shown in (30) and (31):

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

(31) a. *These problems consider easy at MIT.
     b. These problems are considered easy. (Roberts, 1987:190)

This is an advantage of the lexical approach to MF.[8]

The final rule in (17c) refers to event argument. The concept 'event argument' comes from Davidson (1967), and later Kratzer (1989), Higginbotham (1985), and Parsons (1990) adopt the idea. Here the event argument is based on Kratzer (1989): In general, action or eventive predicates have the event argument, whereas the stative predicates do not. Rule (17c) states that event argument is suppressed in MF. Note that the transitive verbs corresponding to the middle verbs are always eventive,[9] while the derived middles are stative:

(32) a. ?Yesterday, the mayor bribed easily, according to the newspaper.

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[8]See Keyser and Roeper (1984), Roberts (1987), Fagan (1988, 1992), Ackema and Schoorlermmer (1995), Chung (1996) for the lexical or syntactic approaches to MF.

[9]Roberts (1987) argues that the middles verbs are derived from the accomplishment verbs, and Fagan (1992) claims that the middle verbs are derived from the accomplishment and activity verbs. Note that the accomplishement and activity verbs all are eventive.

   b. ?At yesterday's house party, the kitchen wall painted
      easily.

(33) a. *Bureaucrats are bribing easily.

    b. Bribe easily, bureaucrat! (Keyser and Roeper 1984:384-385)

Middles are not compatible with spatio-temporal adverbs, the progressive and imperative forms as in (32) and (33). This indicates that the middles are stative, not eventive (Keyser and Roeper 1984; Roberts 1987; Fagan 1992).

One interesting property in the middles is that the middles have the underlying agent or agentive interpretation, although the construction is stative aspectually. The event suppression approach in (17c) can explain the understood agentivity of the middles. Here I will use the term eventiveness rather than agentivity. As Rapoport (1999) points out, not all middles are agentive. Consider the contrast in (34) and (35):

(34) a. This kind of bread cuts easily.

    b. *This kind of bread cuts easily all by itself.

(35) a. This wood carves easily.

    b. *This wood carves easily all by itself. (Rapoport 1999:150)

The expression *all by itself* is compatible with non-agentivity. The data above show that the middles above are agentive. But some middles allow *all by itself*:

(36) a. This kind of glass breaks easily all by itself.

    b. Milk chocolate melts smoothly all by itself. (Rapoport 1999:151)

The compatibility of *all by itself* with the middles in (36) indicate that they are not agentive.[10]

We have found that not all middles are agentive underlyingly. But we can say that the middles are all eventive underlyingly, when we consider the middles in (34), (35) and (36). This underlying eventiveness of the middles supports the event suppression in (17c). Some event may contain an agent and others may not, and thus some middles are agentive and others are not.

Another supporting evidence to the event suppression is the adverbs appearing in the middles. The manner adverbs like *easily* or *smoothly* are modifiers of some process or event. These adverbs need some event or process to modify. Although the event argument is required by the adverbs, it may not surface since the middles are stative, not eventive. Thus I propose that event argument is suppressed. This suppressed event argument may be associated with the discharged argument if the event has an agent.

One may argue that the following middle gives rise to a problem related to the discharge of the external theta-role:

(37) Latin texts do not translate easily for Bill. (Rapoport 1999:151)

The discharged argument seems to play a syntactic role in the above sentence, which is associated with the agent or experiencer in the *for* phrase. Then, one may argue that the external argument is suppressed, not discharged. And Rapoport (1999) assumes that the middle with the *for* phrase is agentive and the *for* phrase is compatible with agentivity.

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[10]Rapoport (1999) classifies the middle verbs to two groups: one group contains the I/M(Instrument and Manner) component and the other does not. The IM verbs necessarily implies a protoagent, whereas those without the I/M component do not. The verb *cut* contains the I/M component and thus the middle in (34) is agentive, but the verbs *break* and *melt* does not contain the component and thus the middle in (36) are not agentive.

But the assumption that the argument in the *for* phrase is construed as the agent is not convincing, as pointed out by Ackema and Schoolemmer (1995) since the *for* phrase may appear in other constructions:

(38) a. That book is too thick for Mary.

b. As far as translation is concerned, no Latin text poses a problem for Bill. (Ackema and Schoolemmer 1995:179)

In (38) the argument in the *for* phrase is interpreted as the reader and the translator. But the agents, reader and translator, are not related to the argument structure of the main predicates, *thick* and *pose*. Therefore, the claim that the agent of the *for* phrase in (37) is the suppressed argument cannot be true. I suggest that the relation between the agent of the *for* phrase and the discharged argument is determined contextually or pragmatically.

4. Remaining Questions and Conclusion

There are two questions I have not discussed here. The first one is related to the so-called affectedness constraint on MF. That is, the verbs with Theme only may undergo MF, as Roberts (1987) argues (Hale and Keyser 1987; Roberts 1987; Fagan 1988; Chung 1995).[11] This issue is not considered here.

The other issue is about 'adorning' materials in English middles. One question is why the middles need the materials and the second question is in diversity of the materials, as shown in (1): manner adverbials, modals, negation, and focus. It seems difficult to find their common properties (Roberts 1987).

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[11]Hale and Keyser (1987:7) presents the following condition:

Condition on English Middle Formation: A dyadic transitive verb V may form a middle if and only if its object is TH-committed by the central participant in the LCS.

These two issues are not discussed in this study and require more study.

In this study I have looked at the implicit arguments of English middles: discharged argument and event argument, and I have made a proposal which is different from the previous studies of MF: discharge of the external argument and suppression of event argument. We have seen that the invisible arguments play important roles in the syntax and semantics of the English middle constructions.

References

Ackema, P. and M. Schoorlemmer. 1995. Middles and nonmovement. *Linguistics Inquiry* 26, 173-198.

Chomsky, N. 1981. *Lectures on Government and Binding*. D. Reidel, Dordrecht.

Chung, T.-G. 1995. A semantic condition on English middles: a causative approach. *Korean Journal of Linguistics* 20.4, 271-288, Linguistic Society of Korea.

Chung, T.-G. 1996. On English middle formation. *Studies in Generative Grammar* 6.2, 281-317.

Chung, T.-G. 2000. Argument structure of English intransitive verbs. *Studies in Generative Grammar* 10.2, 389-425.

Davidson, D. 1967. The logical form of action sentences. In N. Rescher. ed., *The Logic and Action*, Pittsburgh: University of Pittsburgh Press.

Di Sciullo and E. Williams. 1987. *On the Definition of Word*. Linguistic Inquire Monograph 14. Cambridge, Mass.: MIT Press.

Fagan, S. M. 1988. The English middle. *Linguistic Inquiry* 19, 181-203.

Fagan. S. M. 1992. *The Syntax and Semantics of Middle Constructions: a Study with Special Reference to German*. Cambridge: Cambridge University Press.

Hale, K. and S. J. Keyser. 1987. A view form the middle. *Lexicon Project Working Papers* 10, Cambridge, Mass.: Center for Cognitive Science, MIT.

Higginbotham, J. 1985. On semantics. *Linguistic Inquiry* 16, 547-593.

Hoekstra, T. and I. Roberts. 1993. Middle constructions in Dutch and English. In Eric Reuland and Werner Abraham eds., *Knowledge and Language*. Vol. 2: *Lexical and Conceptual Structure*. 183-220, Dordrecht: Kluwer.

Keyser, S. J. and T. Roeper. 1984. On the middle and ergative

constructions in English. *Linguistic Inquiry* 15, 381-416.

Kratzer, A. 1989. Stage-level and individual-level predicates, Ms. University of Massachusetts, Amherst.

Parsons, T. 1990. *Events in the Semantics of English: A Study in Subatomic Semantics.* Cambridge, Mass.: MIT Press.

Rapoport, T. R. 1999. The English middle and agentivity. *Linguistic Inquiry* 30, 147-155.

Rizzi, L. 1986. Null objects in Italian and the theory of *pro. Linguistic Inquiry* 17, 501-557.

Roberts, I. G. 1987. *The Representation of Implicit and Dethematized Subjects.* Dordrecht: Reidel Publishing Company.

Roeper, T. 1987. Implicit arguments and the head-complement relation. *Linguistic Inquiry* 18, 267-310.

Stroik, T. 1992. Middles and movement. *Linguistic Inquiry* 23, 127-137.

Stroik, T. 1995. On middle formation: a reply to Zribi-Hertz, *Linguistic Inquiry* 26, 165-171.

Williams, E. 1981. Argument structure and morphology. *The Linguistic Review* 1, 81-114.

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