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## A COGNITIVE VIEW OF MIDDLE CONSTRUCTIONS IN ENGLISH\*

### 1 INTRODUCTION

This study concerns the English middle construction, exemplified by such forms as *this book sells well* or *this book reads easily*. These sentences illustrate a variety of typical characteristics of middles; (a) a basically transitive verb occurs with a single argument; (b) that argument is not the usual active subject, but rather the logical object; (c) an adverbial (in some very loose sense) is necessary to ensure the well-formedness of the construction. This phenomenon has been discussed in various domains in linguistics: it was analyzed syntactically by Keyser and Roeper (1984), lexically by Fagan (1992), semantico-pragmatically by such researchers as van Oosten (1977, 1986), Fellbaum and Zribi-Hertz (Fellbaum (1986), Fellbaum & Zribi-Hertz (1989)). Nevertheless, this grammatical construction remains the focus of intense interest, displaying an array of as yet unsolved problems. In the present study, I intend to show that many of these outstanding difficulties can be overcome by adopting the framework of COGNITIVE LINGUISTICS.

Within cognitive linguistics, I shall devote special attention to the theory of COGNITIVE GRAMMAR established by R. W. Langacker (1987, 1991a). The ultimate goal of this field of research is to demonstrate the significance in grammar of such cognitive factors as figure/ground organization or human versatility in construing a situation, long ignored in linguistic theory. With regard to the particular application of cognitive linguistics to the analysis of the middle construction, one discovers that the cognitive approach affords an accurate description of all of the salient properties of middles sketched above, while allowing, in particular, for an insightful characterization of the class of transitive verbs which may occur with middles. In this respect, the cognitive-linguistic analysis clearly out-performs existing syntactic and pragmatic attempts to solve the problem.

Cognitive linguistics has recently undergone significant development, but unfor-

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tunately it is often misunderstood as a 'shelter' for fuzzy examples shunned by syntactic or formal-semantic studies. Indeed, cognitive linguistics can handle those vague phenomena, and, furthermore, cognition should be considered to be the ultimate, underlying determinant not only of such problematic grammatical structures but of all linguistic phenomena. Moreover, cognitive linguistics should not be understood as a theory whose foundation mixes fact with liberal speculation. It is important to keep in mind in the following discussion that cognitive linguistics is just part of cognitive science, a study of psychological reality.

Section 2 briefly introduces the properties of the middle construction and reviews previous analyses of the phenomenon. Section 3 reviews the basic notions of the cognitive grammar and the cognitive models such as the action chain (Langacker 1990) and the causal chain (Croft 1990) to be used in the rest of our discussion. As evidence of their descriptive efficiency, the distribution of psychological verbs in English, French and Japanese is also presented. Section 4 elaborates the cognitive model of the middle construction, considering the nature of the agent and the patient involved in it, together with the semantic and cognitive function of adverbs. It is also observed how the middle differs from the passive, to make the characteristics of the middle more explicit. Section 5 accounts for the reasons why some middle sentences are not accepted, with respect to the representation via cognitive models. Section 6 provides a comparative study of middles in English, French and Japanese. It is suggested that the manners of construal of events in respective languages reflect in the productivity of the middle.

## 2 PROPERTIES OF MIDDLE CONSTRUCTIONS AND PREVIOUS STUDIES

### 2.1 Properties of the Middle Construction

So far many linguists have been mystified by so-called middle constructions like (1)-(2):

- (1) This book sells well.
- (2) This car drives easily.

Among various views on the middles, there seems to be a certain agreement concerning the characteristics of this construction in some respects: first, the middle takes as its subject the patient just as the passive. But the agent cannot be expressed overtly, as in (3), unlike the passive in (4).

- (3)\* This car drives easily *by John*.
- (4) This car is driven easily *by John*.

Though the agent cannot be represented explicitly, the paraphrase of (2), presented in (5) below, indicates its implication of the agent who is not specific but rather generic.

- (5) *People in general* can drive this car easily.

Note that the subject of the middle is not only the patient but often the instrument or rarely the locative, exemplified in (6) and (7) respectively:

- (6) *This knife cuts well.*
- (7)?*This lake fishes well.*

Secondly, most of the middles occur with particular adverbs or adverbial modifiers, of which the most typical examples might be *well* or *easily*, shown in (1)-(2) above. Adverbs like *carefully* or *sufficiently* are never used in middles, while they would be properly included in passives.

- (8)\* *This car drives carefully.*
- (9) *This car is driven carefully.*

Finally, verbs possible in middles are essentially transitive, but not all transitives could take part in this construction.

- (10) *This book sells well.*
- (11)\**This book buys well.*

The contrast in (10)-(11) shows that *sell* alone is to be accepted in middles, even though the paired verbs, *sell* and *buy*, possibly denote the same transaction. The sentence (11) is just one of inappropriate middles; we cannot say, for instance, *\*this book understands easily* or *\*this cake eats nicely*, even if they are produced from transitives.

## 2.2 Previous Researches on Middles

Let us examine how the middle constructions which have the properties mentioned above have been treated so far. Keyser & Roeper (1984) claim that the 'middle verbs' are originally transitive and consider middles as sentences derived by syntactic movement which allows the 'object' to be settled in the subject position. Fagan (1992) argues, on the contrary, that the middle verbs are intransitives produced from transitives via lexical rules.

Now we can point out some problems with those syntactic and lexical analyses, since they account only for the syntactic status of middle verbs and what they deal with is a set of acceptable middle verbs, excluding the ungrammatical ones. The reason why not all transitives can be used in middles remains unsolved.

In this respect, it seems that a pragmatic analysis has more effect on the middle constructions. Van Oosten (1986) observes, taking into consideration their context-sensitivity, that they are used when we regard the agent as irrelevant to the action the verb denotes and the patient as primarily responsible for the occurrence of the action. Intuitively, we can agree that the subject of the middle (the patient) has no volition but responsibility for the action. However, only with the responsibility condition, some middle constructions would fail to be explained; for instance, the difference between *sell* and *buy*. Though she insists that items on sale have responsibility not for

buying activity but for selling activity, it is highly dubious if what is bought really has no responsibility for buying activity.

It has been shown that neither syntactic nor pragmatic analyses provide sufficient accounts for middles. In order to characterize them precisely, we adopt here the cognitive-linguistic approach, especially cognitive grammar advocated by R. W. Langacker. On this basis, it is assumed that the precise meaning of an expression resides not only in the objective situation it describes but also in how the situation is construed and conceptualized. Specifically, from the perspective of cognitive grammar, there is a certain relationship between a conceived event and the grammatical construction employed to code it linguistically. It follows that the middle construction is also triggered to express a situation recognized in a particular fashion. Taking it into consideration that acceptability of some middle sentence is very subtle and often varies from individual to individual, we are led to expect that such a cognitive approach will be revealing since the formation of the middle seems to depend on our respective conceptualization of a situation.

In the next section, we will begin by introducing cognitive models, representing conceptual structures of perceived events, together with some relevant constructs in cognitive grammar, all of which will be the basis for developing our discussion in the following. In order to explore the relation between the middle and the conceived event it describes, our concern will be confined to the cognitive structure of an event and its representation in the cognitive model.

### 3 THEORETICAL PRELIMINARIES

One of the primary claims of cognitive linguistics, which has made significant advances in this decade, is that all linguistic phenomena have conceptual import and are characterized relative to cognitive domains, or what Lakoff (1987) calls *idealized cognitive models* (ICMs). The motivation for the use of ICMs is the idea that we symbolize by means of language not only objective properties of an entity (either a thing or a situation) but also our subjective CONSTRUAL or PERSPECTIVE. The latter is demonstrably essential to grammar and interpretation; this observation underlies the essence of the cognitive approach. By utilizing ICMs, one can explicitly represent subjective construal, or how an entity is perceived through human cognitive processing, which serves as an interface between the external world and the symbolic system of language. Moreover, a semantic description of a particular linguistic form based on ICMs enables to construct insightful generalization about the constraints imposed on its use, i.e., on the nature of those ICMs with which that form may be associated. At the same time, one can account for the typically fuzzy intuitions that speakers report with regard to contextual influence on the acceptability of utterances, by referring to the fluid relation between ICMs and the real world.

An array of researchers have successfully demonstrated the utility of ICMs in linguistic analysis; these include Lakoff (1987) on word meaning as well as Langacker (1990) and Croft (1990) on grammatical relations. It is also the goal of this study to demonstrate how effectively the ICM works in describing constraints on the English middle construction. To this end, I shall introduce the ICMs that represent our subjective construal of events, especially the ACTION CHAIN in Langacker (1990) and

the CAUSAL CHAIN in Croft (1990) both introduced below.<sup>1</sup> I believe that this cognitive approach to the middle construction can offer a synthesis, providing both an account of grammatical issues and also an analysis of the considerable contextual influences on this construction.

### 3.1 Cognitive Models: Action Chain and Causal Chain

Langacker (1990) proposes two types of cognitive models to characterize our archetypal conception of the world. One of these he calls the BILLIARD-BALL MODEL:

...we tend to conceive of our world as being populated by discrete objects, each of which (at a given moment) occupies a distinct location. Some of these objects are capable of moving about and interacting with others, particularly through direct physical contact. Motion is driven by energy, which some objects are capable of supplying internally and others must receive from outside sources. When physical contact is initiated with any degree of force, energy is transmitted from mover to the impacted object; this may cause the latter to move also, and possibly to interact with additional objects. Let us call this archetypal conception the BILLIARD-BALL MODEL. (Langacker 1990: 215)

Thus, the billiard-ball model pertains to our empirical notion of energetic interaction of objects. Langacker also advocates the notion of a STAGE MODEL. This derives from the image-schematic notion that one observes a limited range of the world as if one were watching a play. Thus, we are always viewing what happens on the stage --- that is, the energetic interaction of discrete participants in a certain setting. The combination of certain aspects of these models is sketched in Figure 1, which Langacker calls the *normal observation of a prototypical action*.

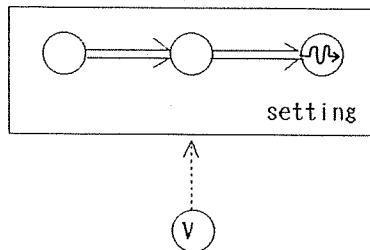


FIGURE 1: Normal Observation of a Prototypical Action (Langacker 1990: 217)

Each of the circles in the diagram represents an individual object, and they interact with each other in various ways forming an interactive network. The viewer (V) is observing the event from the vantage point outside the setting.

Provided that an event involves energetic interaction of participants on a setting,

<sup>1</sup> See also Kemmer (1993) and Nakamura (1993) for the basic notion of the cognitive model of events and also analyses of grammatical constructions utilizing the ICMs.

then suppose we try to code it in a clausal expression. We cannot, of course, describe the whole event because the energetic interaction of participants is indefinite in nature. Therefore, we are most concerned with an asymmetrical interaction, and energy transfer from one participant to the other, as sketched in Figure 2, to which the term ACTION CHAIN specifically refers. Then we limit the scope of the action chain and impose cognitive salience on certain participants. This is diagrammed in Figure 3, whose scope is indicated in an encompassing oval and salience is marked with boldly outlined vertices.

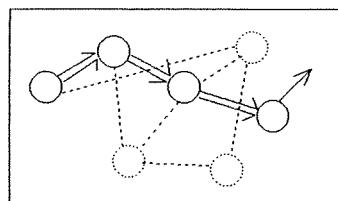


FIGURE 2: Action Chain (Langacker 1990: 219)

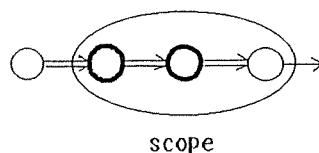


FIGURE 3: Scope of an Action Chain (ibid.)

Various expressions of a conceived event or situation reflect how we interpret it, in other words, how we limit the scope of the action chain and impose cognitive prominence. For example, (12)(a)-(d) below are based upon the same objective situation but they construe it in quite different ways respectively. This is sketched in Figure 4, where (a)-(d) correspond directly to (a)-(d) of (12).

(12) a. Floyd broke the glass with the hammer.  
b. The hammer broke the glass.  
c. The glass easily broke.  
d. Floyd hit the hammer against the glass. (Langacker 1990: 220)

In (12a), the whole of the action chain is included in the scope of the expression, with the agent (*Floyd*) the most salient and the patient (*the glass*) also salient next to the agent. (12b) excludes the agent from its scope, and the most salient participant is in turn the instrument. The scope of (12c) is limited further, and it includes only the patient, which becomes salient because there are no other participants. Finally, (12d) chooses the same scope as that of (12a), but it is the instrument that is second most highlighted participant, after the subject.

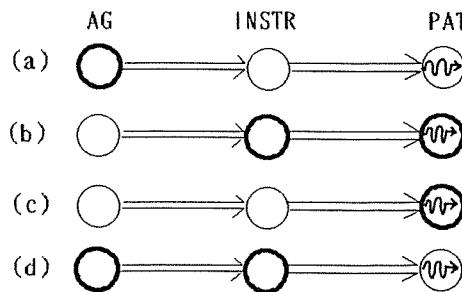
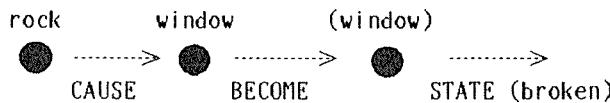


FIGURE 4

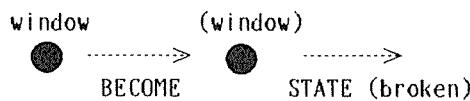
As another idealized cognitive model, Croft (1990) proposes CAUSAL CHAINS, which can be viewed as compatible with the action chain considered above. First, he claims that simple events constitute causal chains each of which has three segments: CAUSE, BECOME, and STATE. Also he assumes that types of simple verbs describing simple events fall into three categories: *causative*, *inchoative* and *stative*. Those three event-types are characterized in terms of the causal chain. The causal chain for causatives has all of the three segments, for inchoatives the last two segments (BECOME and STATE), and for statives the last segment (STATE), as illustrated in Figure 5, corresponding to the three sentences in (13):

(13) a. The rock broke the window. (causative)  
b. The window broke. (inchoative)  
c. The window is broken. (stative) (Croft 1990: 53-54)

(a) *The rock broke the window;*



(b) *The window broke;*



(c) *The window is broken.*



FIGURE 5

It is evident from these examples that the same simple event can be expressed in causative, inchoative, or stative forms, depending on the scope of the causal chain.

Croft's notion that a single event has a causal structure which consists of three segments seems revealing about the fundamental aspect of causal relations common to our everyday experiences, which Langacker's action chain fails to describe. However, this causal chain is not obvious as to the sorts of transmission; as depicted in Figure 5, there is no distinction of the arrows between entities. Apparently, however, there should be some difference among them because the first one represents the energetic transmission to cause some change on the part of the window while the rest has no such causal effects (it is no doubt unbelievable that the window causes itself to change its own state by energy transfer).

In this paper, I would like to adopt Langacker's action-chain model basically, implementing it with Croft's notion of causal structures. In the beginning, see Figure 6 below which sketches a canonical transitive event in which the agent causes the mover to traverse along a spatial path by energy transfer, as in *John drove the car* or *Mary opened the door*:

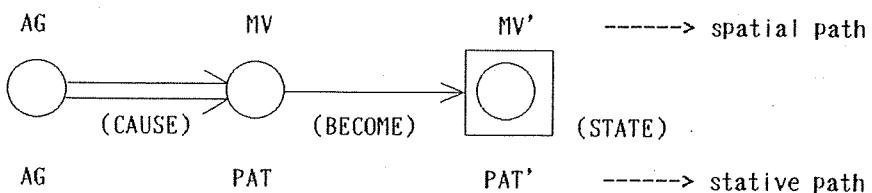


FIGURE 6: Canonical Transitive Relation

The double arrow in the diagram indicates energetic transition (causation), and the single arrow stands for non-energetic transition, a change of location in the above case. The rightmost square enclosing the mover represents its final location as a result of receiving energy transfer from the agent. Thus the model in Figure 6 is motivated by a transitive event including a spatial path, but it can also represent a transitive event of a stative path in which the agent causes the patient to change its state, i.e. *Mary broke the vase* or *John washed the car*, via metaphorical extension.<sup>2</sup>

In either case, Figure 6 portrays a prototypical transitive event, which directly corresponds to the causal structure in Croft's model: CAUSE, BECOME and STATE. I will employ these terms in order to label each segment of the transitive event, as already shown in the figure above. Henceforth the action chain of this configuration will be referred to as a CANONICAL TRANSITIVE RELATION.

<sup>2</sup> I assume that the stative path is extended from the spatial one by such metaphor as 'CAUSES ARE FORCES plus STATES ARE BOUNDED AREAS (Lakoff 1990: 63)'. Since the spatial and physical transitive relation is considered to be more basic, I will use the term 'mover' to refer to the semantic role of a participant which undergoes a change of location or state (what is traditionally called a 'theme'), subsuming the 'patient' within it.

### *3.2 Related Cognitive Abilities and the Linguistic Consequences*

*3.2.1 Figure-ground.* It is psychologically attested and confirmed that our perception is not always uniform. Even watching an object as a whole, one does not perceive all the subparts equally; some of them are the focus of attention and hence salient, whereas others draw back to the periphery. This perceptual differentiation is called *figure/ground organization*, of which 'figure' refers to the prominent part and 'ground' to the non-salient background.

We can find an array of instances of the figure/ground organization in our everyday experiences. When we read a book, the letters on the pages are the 'figure' and the rest is the 'ground'. Then when we put the book on the desk and observe it, the whole book becomes the 'figure' and the desk functions as the 'ground' in turn. The cocktail party phenomenon is also derived from figure/ground; someone's talk about ourselves becomes the 'figure' once we notice it, and all the other conversations are merely the 'ground'. Hence, we tend to perceive as the 'figure' what is important informationally and thereby of focus of attention.

*3.2.2 Relative Cognitive Salience and Grammatical Relations.* Suppose we are going to express a simple event, which can be represented by the action chain previously introduced. Due to the figure/ground organization, some participant (entity) of the action chain becomes more salient than others. Such relative salience reflects what we select as the subject or object in a clausal expression to describe the perceived event.

Now, let us introduce some terminology concerning the cognitive salience, used in cognitive grammar. First, the term *trajector* refers to the most salient participant, the 'figure' in a cognitive model. Note that the trajector has originally a spatial sense, but it refers only to its cognitive status. The other is the *landmark*, which refers to the secondary figure (or, the most prominent in the 'ground') and functions as a reference point to situate or evaluate the trajector. The importance of the selection of the trajector/landmark is demonstrated in the analysis of the semantics of 'above' and 'below' in Langacker (1987, 1988), who shows that these two lexical items invoke the same objective situation but differ just in the choice of the trajector.

Let us survey the correlation between the alignment of the trajector/landmark and grammatical relations. When we describe a transitive relation involving energy transfer from the agentive participant to the patient, the agent is regarded as the most natural candidate for the subject, the instrument or even the patient are qualified with this grammatical status, as shown in (12) above. Similarly, the object is typically the patient but can be the instrument. That is why many linguistic researchers have considered that such grammatical relations cannot be defined in terms of their meanings, especially semantic roles, and that they are purely syntactic constructs. However, cognitive grammar posits a symbolic relation in any linguistic units, either lexical or grammatical, and assumes that any linguistic category can be precisely characterized in terms of the 'prototype' and the 'schema'. In this regard, we can say that the prototypes for the subject and the object are the agent and the patient respectively; then, what is the schematic characterization of the subject and the object, that is capable of displaying commonality of all the members of the category? According to Langacker (1990), the subject is schematically the trajector ('figure') and the

object is the landmark of the profiled portion of the action chain. Concerning the action chain of a canonical transitive relation, a participant is recognized as the 'figure' if it is energetic and occupies the 'head' of the action chain. Therefore, the prototypical subject, or the 'figure' in the profiled action chain, will be both the agent and the topic, though there can be some deviation from such prototype. As to the object, it will be schematically characterized as the secondary figure, which lies in the 'tail' of the action chain. Table 1 summarizes both the prototypical and schematic characterization of subjects and objects. It is shown that grammatical relations have a cognitive basis, thus can be defined semantically if one applies a subjective and cognitive view of semantics and grammar.

	schema	(action chain )	prototype
subject	trajector (primary figure)	'head' of the profile	agent and topic
object	landmark (secondary figure)	'tail' of the profile	mover (patient)

TABLE 1

3.2.3 *An Example of Descriptive Applications of the Action Chain.* Given the basic conceptions of cognitive grammar, I will illustrate how effectively the cognitive model proposed above works in describing linguistic phenomena. Considered here is a class of the 'psychological verb' in English, French, and Japanese.

- (15) a. The news surprised John. (causative)  
b. John was surprised by the news. (inchoative)  
c. John was surprised at the news. (stative)
- (16) a. La nouvelle a étonné Jean. (causative)  
b. Jean s'est étonné de la nouvelle. (inchoative)  
c. Jean a été étonné de la nouvelle. (stative)
- (17) a. sono sirase-ga John-o odorok-ase-ta (causative)  
that news-Subj John-Acc orodok-Caus-Past  
b. John-wa sono sirase-ni odoroi-ta. (inchoative)  
John-Subj that news-at ororoi-Past  
c. John-wa sono sirase-ni odoroi-tei-ta. (stative)  
John-Subj that news-at oroi-State-Past

In all the three languages, the psychological phenomenon of 'surprising' can be expressed in causative, inchoative, and stative forms. But we find that the basic verbs employed in the languages are different in nature; in English, the basic verb is a transitive *surprise* in the causative form in (15a) from which the inchoative and stative are derived. French has a couple of general forms: a transitive *étonner* and an intransitive with a reflexive clitic *s'étonner* as in (16b); we shall regard here the inchoative in French as a conventionally established lexical item. Finally, in Japanese, the underlying verb is intransitive *odorok-* in the inchoative form in (17b), and the

causative and stative are derived from it by the suffixation of causative or stative morphemes.

In sum, English and French have the unmarked causative, while French and Japanese have the unmarked inchoative.<sup>3</sup> Moreover, French differs from Japanese in that French employs the device of reflexive clitics in inchoatives. The inchoative in French is originally the causative with a reflexive; if (16b) is replaced in English, it corresponds to such a sentence as 'John surprised himself'. Therefore, it implies some causative relation, which leads us to speculate that reflexive clitics in French express the 'internal causer' who exerts mental force upon the experiencer himself. This is sketched in Figure 7:

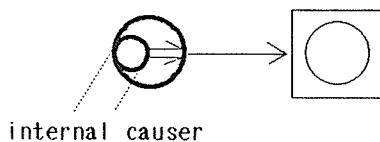


FIGURE 7

The characteristics observed above will be described precisely by the action-chain models, provided that the experiencer receives the mental energy from the causer. The diagram below shows that those three languages construe the same psychological event in differing ways.

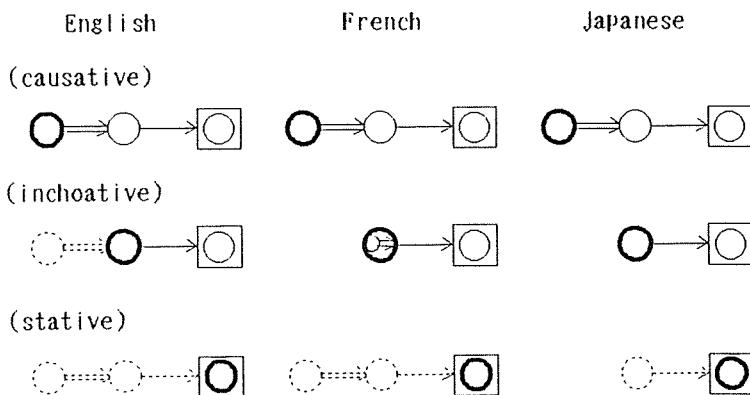


FIGURE 8

<sup>3</sup> In general, this paper follows the definition of markedness and unmarkedness in Croft (1992), which is summarized as below:

(i) structural markedness:

the marked member consists of additional morphemes associated with the lexical root.

(ii) behavioral markedness:

the unmarked member is able to take various inflections morphologically, and also able to occur in various circumstances.

(iii) textual markedness:

the unmarked member occurs frequently in text.

## 4 ACTION CHAIN OF THE MIDDLE CONSTRUCTION

In this section, I will investigate how the middle construction in question is characterized in terms of the action chain introduced previously. The main objective here is to elaborate the action-chain-representation of middles enough to predict the difference in acceptability of an array of examples of this construction.

4.1 *The Action Chain Representing Middles*

Langacker (1990) briefly refers to the middle construction comparing with the transitive and ergative sentences, as in (18):

(18) a. Andrea opened the door.  
 b. The door opened (all by itself).  
 c. The door opened only with great difficulty. (Langacker 1990: 228)

(18)(a)-(c) correspond to Figure 9 (a)-(c) respectively (the diagram is one of Langacker's, modified with the notation proposed here):

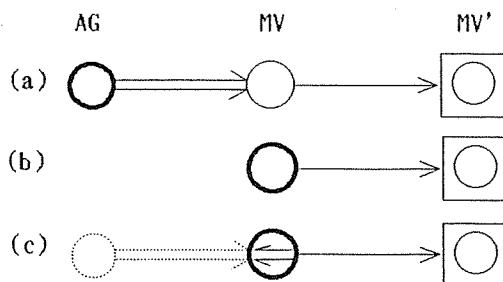


FIGURE 9

The transitive (18a) portrays an event where the agent (*Andrea*) transmits energy to the mover. The ergative (18b) limits the action chain to the last two segments and excludes the agent from its scope; the mover (*the door*) is hence the only salient participant in the action chain and is selected as the subject. The middle (18c) is similar to the ergative in selecting the mover as the subject, but different from it in that the middle includes the agent in its scope yet keeping it unprofiled. The most salient participant in the profiled portion of the action chain is again the mover, and selected as the subject. Langacker himself accounts for middles as follows:

...it seems apparent that sentences like these often do imply an agent. ...The agent is however relatively non-salient and is left unspecified. ...In particular, the resistance it offers to the agent's exertions (or in other examples, its facilitation of those efforts) comes to the fore in this construction, as indicated by the double arrow internal to the subject. Though volition is not involved, the resistance or facilitation makes the mover agent-like to some degree.

(Langacker 1990:228)

His observation seems true, but not enough to describe the various aspects of this construction. To make the action chain in Figure 10(c) more effective, let us examine and elaborate it in detail.

*4.1.1 Non-specificity of the Agents in Middles.* The paraphrase in (19) indicates that the agent in the middle is understood as non-specific and generic.

- (19) a. This car drives easily.
- b. People, in general, can drive this car easily.

The question here is why the agent in the middle cannot designate a specific participant though it is inevitably included in the scope of the action chain.

I will consider non-specificity of the agent as a presupposition in order for the mover to be salient enough to be coded as the subject in this construction. According to the cognitive principle of the figure/ground organization, what is specific will be more salient than what is generic, thus the former will be the figure and the latter the ground; it is so because our attention is usually focused on specific and concrete things rather than the non-specific and abstract ones.

In the middle construction, the subject is always the mover, which should be most salient among the participants involved; in other words, the mover should be the 'figure' in the action chain. Suppose that the agent and the mover are both specific participants in the action chain of middles. As noted previously, the more energetic participant will be prominent, other things being equal. Therefore, a specific agent would deprive the mover of the status of subject which accords with the 'figure' in the action chain. Otherwise, if the agent is non-specific and the mover still specific, the agent will draw itself back to the 'ground' and the mover will be salient relative to the agent, thus becomes the 'figure' in the action chain coded as the subject. Hence, non-specificity of the agent in middles is required to provide the status of the 'figure' for the mover.

Note, however, that the agent is not allowed to be totally excluded from the action chain of the middle regardless of its non-specificity. This means that the middle construction is essentially based on the canonical transitive relation, as sketched in Figure 6. It also suggests that the intransitive cannot be used in the middle because it does not involve a transitive energetic interaction between the agent and the mover needed for the basis of this construction, as illustrated below:

- (20) a. \*This bed sleeps well.
- b. \*This road runs easily.

*4.1.2 The Mover's Exertion of Energy.* As argued in Langacker (1990), what makes the middle contrast with the ergative or the passive is that the mover exerts energy to resist or facilitate the force from the non-specific agent. This idea will be attested by the example below:

- (21) This book became the best *seller* last year.

The function of suffix *-er* is to make deverbal nouns that mean 'agents' of the action

denoted by the root verbs, *runner* or *swimmer*, for example. It is assumed therefore that the deverbal noun with *-er* is possible when it is regarded as some agentive, energetic participant in the denoted action.<sup>4</sup> In (21), *seller* is made up by combining the middle verb *sell* and the suffix *-er* because it obviously refers to the book that is to be sold. It goes to show that the mover, the subject of the middle construction, is recognized as an agent-like participant exerting some energy.<sup>5</sup>

But it will be problematic to think that the mover's energy is physical as the agent's, for lack of volition on the part of the mover. Then let us suppose that the mover's force is reactive or facilitative to the energy of the agent, due to its property. It is probable that some property of an object affects the performed action. For example, a flow of water will be compelled to run in another direction if a board blocks in it, even though the board itself does not emit any force. In such a situation, however, it looks as if the board relatively exerted some energy, due to some property of that board concerning its hardness or thickness.

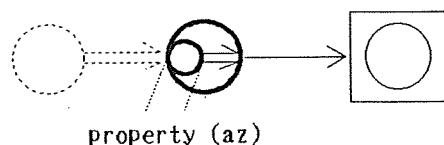


FIGURE 10

Figure 10 illustrates that the property of the mover gives rise to some energy for or against the energy from the agent. As suggested here, the 'active zone (az)' of the mover is its property.<sup>6</sup> Someone might doubt the existence of such an active zone within the mover, but there are at least two reasons to posit it; one is a generally-accepted intuition about the middle that this construction describes the attributes of their subjects (Fellbaum 1986). The other reason is found in French middles:

(22) Ce roman *se* lit facilement.  
(this book reads easily)

In French, the middle construction involves the reflexive clitic *se*. Recall that the reflexive is also used in the psychological predicate, e.g. *Jean s'étonne de la nouvelle*,

<sup>4</sup> Here is a piece of evidence of the function of *-er*. A noun with this suffix was called *nomina agentis* and originally referred to people who are engaged with manufacture or official affairs (e.g. *butcher*, *carpenter*, *executioner*, *justicer*), and also to those who live in the city (e.g. *Londoner*). It extended to designate inanimate things analogically (e.g. *clapper*: tongue of bell), and further to instruments (e.g. *roller*, *cutter*) in Modern English.

<sup>5</sup> We can see another middle verbs with *-er* in Rappaport and Levin (1992): *broiler*, *fryer*, *roaster*, *steamer*. Ackema and Shoorlemmer (1995) also show the Dutch examples of the nominals of this sort, and argue that the middle verbs are unergative at least in Dutch. Their proposal also supports the agent-like nature of the subject of the middle construction.

<sup>6</sup> The term *active zone* refers to the limited portion of the trajector or landmark which is directly accessible into a certain relation. See Langacker (1991b: chapter 7) for details.

as discussed in the previous section, where it was assumed that reflexive clitics denote the internal causer of the participant in the subject position. If the function of the reflexives can be extended to represent some internal entity of a participant, we may well assume that the reflexive in the French middle denotes an internal entity of the mover such as its property. Since the English system of grammar does not include the class of reflexive clitics as a device of coding the internal entity, English middles fail to express the mover's active zone, i.e. its property explicitly.<sup>7</sup>

#### 4.1.3 *The Settings for the Action Chain of the Middle Construction.*

4.1.3.1 *The Semantics of Adverbs in Middles.* Let us examine the adverbs (or adverbial phrases) in this construction. The possible adverbs are reduced to two categories, as Fellbaum (1986) also suggests. One type of adverbs refers to the 'facility' of the action involved, in which the most prototypical one is *easily*. Examples in (23) are all including the facility adverbs: *smoothly* or *quickly* are regarded as focusing on some facet of facility in performing an activity. The other type pertains to 'achievement' of the action, exemplified in (24), in which the adverb *well* is representative.<sup>8</sup>

- (23) a. This book reads *easily*.
- b. This car handles *smoothly*.
- c. This umbrella folds up *quickly*.
- d. Russian novels read *like mysteries*.
- (24) a. This book sells *well*.
- b. She photographs *beautifully*.

I will consider the functional difference between those two kinds of adverbs concerning what part of the described action they modify. It will be proved that the facility adverbs are *process-oriented* while the achievement adverbs are *result-oriented*. Compare the examples in (25):

- (25) a. This book sells *well*.
- b. This book sells *easily*.

The utterance (25a) will be appropriate when the speaker reading newspapers comes across the book-charts and finds the book ranking high. It shows that the result of the action is only evaluated when the adverb *well* is used. In (25b), on the other hand, the possible situations of the utterance would not be limited to those in (25a); one could evaluate that *the book sells easily* even if the activity of selling the book

<sup>7</sup> The paraphrase below seems more instructive in this regard:

(i) This metal hammers flat *easily*.  
 (ii) People can hammer the metal flat *easily* because of an inherent quality of the metal.  
 (Goldberg 1995: 184)

<sup>8</sup> I agree with the characterization of adverbs in Fellbaum (1986), but I do not accept her claim that *beautifully* pertains to the facility: as I will mention afterwards, it is not process-oriented as the facility adverb *easily*.

has not finished yet and he does not know the final result of it.

Another supporting example is in (26):

(26) a. She photographs beautifully.  
 b. She photographs easily.

Obviously, whether *she photographs beautifully* or not is judged from the picture, the result of taking photographs. Thus the speaker of (26a) is not needed to be identified with the photographer himself, because the speaker has only to look at the picture to evaluate whether or not *she photographs beautifully*. However, (26b) implies that the speaker himself took the picture without much effort (for example, the model is easy for the photographer to pose as he likes); it suggests that the evaluation for 'easily' is made in the midst of performing the action, rather than made from the result.

So far I have demonstrated that the adverbs in middle constructions fall into two categories: the facility adverb (like *easily*) and the achievement adverb (like *well*), and that the former is process-oriented while the latter is result-oriented.<sup>9</sup> The discussion here will underlie the following part.

**4.1.3.2 Adverbs as Cognitive Settings.** The objective here is to incorporate the function of adverbs into our cognitive models. In cognitive grammar, the adverbs are regarded as providing some 'scale' for a relational predication.

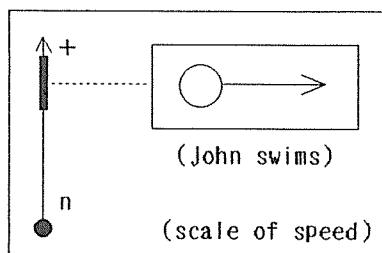


FIGURE 11: 'John swims fast'

Figure 11 illustrates the semantic content of 'John swims fast'; the activity of John's swimming corresponds to the positive area in the scale of speed. The upward arrow indicates the positive pole of the scale, and the point (*n*) represents the norm value of the scale.<sup>10</sup>

<sup>9</sup> This argument is supported by the distribution of compounds involving these adverbs:

(i) *well-conditioned*, *well-done*, *well-dressed*, *well-educated*, *well-formed*, *well-tempered*,  
*well-judged*, *well-known*, *well-timed*.

We find an array of examples of [well + V-p.p.] like (i). The semantic function of the past participle is to profile the final state of the process denoted by the verb stem (Langacker 1982, 1986). The compounds above show that the adverb *well* concerns only the final and resultant state of the process. By contrast, the same kind of compounds with the facility adverb *easily* (or the adjective *easy*) are hardly seen; rather, it accords with the present-participle (e.g. *easy-going*) as far as I know.

<sup>10</sup> The negative pole of the scale will be indicated by the downward arrow, though it does not appear in the diagrams.

In the middle construction, the relational predication is represented in the action chain previously presented, where the agent is non-specified and the mover exerting some energy is the trajector and thereby selected as the subject. The contribution of adverbs to the middle is to represent some kind of scale, as the 'setting' of the action chain. Following the discussion above, the middle construction is considered to have a setting of a scale which pertains either to facility or to achievement of the action.

Then a question arises: what motivates the necessity of such a setting in the middle construction? To reply to this, I would like to assume that the mover's energy for or against the agent affects the facility or achievement of the denoted action, otherwise the action would take the normal course and there would be nothing specific with respect to the facility or achievement. It is hence the mover that determines the facility or achievement of the action, i.e., the position on a scale to which the action chain corresponds. If the mover's energy resists the agent's, the action chain will be located in the negative pole, and conversely, if the mover facilitates the energy from the agent, the action chain will be situated in the positive pole, as illustrated in Figure 11. Among the adverbs of positive value are *easily* or *well*, and negative adverbs are *badly* or *poorly* for example.

Recall the difference between the facility and achievement adverbs in terms of their modification: the former is process-oriented while the latter is result-oriented. This should be incorporated into the cognitive model proposed here. I maintain that the 'active zone' of the action chain, which directly participates in the relation to the scale, is also different in each of them. In the case of the facility adverb, the 'active zone' is the whole action chain and it corresponds to a region on the scale of facility, because of its process-orientedness. As for the achievement adverb, on the other hand, the 'active zone' is limited to the last segment of the action chain, i.e., the STATE-segment, which stands for the mover's final state as a result of the denoted action. Figure 12 shows the differing 'active zones' of the action chain in the facility adverb and the achievement adverb:

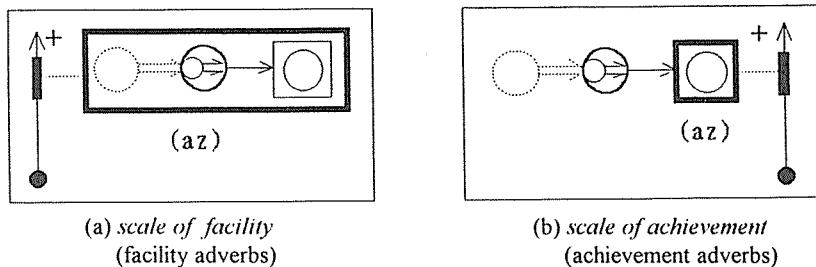


FIGURE 12

As a consequence, an adverb denoting either facility or achievement is required in the middle construction to indicate the effect the mover has upon the action due to its energetic exertion. Although most of the middle constructions obligatorily accompany such adverbs, some middles are exceptionally acceptable without them.

(27) a. The metal recycles.  
 b. This dress won't wash.

The examples above are not problematic because the action itself displays a certain particularity with respect to the facility or achievement of that action, information on which would not be needed to be explicated. Thus, the metal's property that it can be recycled should be what other metals do not have, and we do not have to describe the particularity of the metal by the use of adverbs. I suspect therefore that (27a) might be unacceptable if all the metals could undergo recycling by virtue of technological development, since the recyclable property would be normal and have no special status.

Finally, a general observation that the adverbs like *carefully* or *skillfully* cannot be used in middles will be accounted for straightforwardly in our analysis.

(28) a. \*This car drives carefully.  
 b. \*This book sells skillfully.

As argued in 4.1.1, the agent implied in this construction should not be specific in order to be perceived as the background. The adverbs included in (28) refer to the nature of specific agentive participants, which inevitably contradict the non-specificity of the agent.

We have elaborated the action chain of the middle in order to represent their characteristics more precisely. On the basis of foregoing proposals and discussion, I will examine how the middles differ from the passives and articulate the importance of cognitive factors in their proper use in the following.

#### 4.2 Some Differences between Middles and Passives

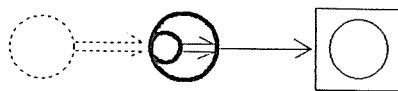
*4.2.1 The Responsibility Condition.* Van Oosten (1986) argues that the subject of the middle construction has responsibility for the expressed action. We can agree with her claim intuitively, but she does not explain what the responsibility comes from especially in this construction. Here, I will prescribe what the notion of responsibility is exactly in order to incorporate it into our cognitive model. I define the participant who is responsible for the action in (29), with respect to the action chain proposed here:

(29) *Definition of Responsibility*

It is the Primary Energy Source, the participant whose energy is crucial to the whole event represented in the action chain, that has responsibility for the expressed action.

In the middle construction, the participant responsible for the described action can be seen in its action chain illustrated in Figure 13. We could recognize that either the agent or the mover is energetic in this diagram, as the double arrows indicate. But the agent could not be identified with the Primary Energy Source, because the non-specific, implied agent is not salient and thereby its energetic exertion would not be

prominent as well. On the other hand, the mover will be qualified with the Primary Energy Source, since how its energy resists or facilitates the relevant action determines the nature of the setting, as discussed in the previous section. Hence, from the definition in (29), it is the mover that bears responsibility for the action in the case of the middle construction.



Primary Energy Source

FIGURE 13

Next, let us examine what participant is responsible in passives. Consider a pair of the active and the passive sentences below:

(30) a. The President drives this car every day.  
 b. This car is driven by the President everyday.

Following the cognitive analysis of the English passive in Langacker (1982), one of differences between the active and the passive resides in their choice of the trajector, in other words, the 'figure' in the profiled relation, though they are often regarded as semantically equivalent. Representation of (30) via the cognitive model is shown in Figure 14:

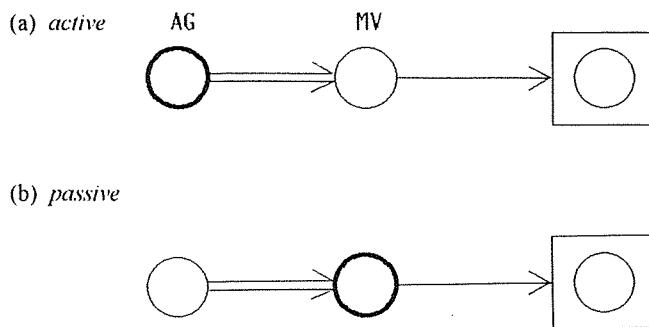


FIGURE 14: Active and Passive

The diagram indicates that each of them is based on the same action chain. The most salient participant in (30a) is the agent (*the President*), which is a prototypical choice of the subject. The cognitive salience shifts from the agent in the active voice to the mover in the passive (30b), but the passive inherits the basic configuration of the action chain from the active and there is no change as to the energy source. Thus, the responsible participant is the agent both in the active and the passive, because it is the Primary Energy Source in each case.

Using the action chain, we have seen that the responsible participant is the mover in middles and the agent in passives. Whether the agentive participant has responsibility for the action or not reflects on the sanction of prepositional *by*-phrases. Middles never allow the implied agent to be expressed in *by*-phrases, unlike the passives.

(31) a. \*This car drives easily *by any people*.  
 b. \*She photographs well *by professional cameramen*.

Here, in order to overview the discussion of the semantic value of *by* in Langacker (1982), let us consider some examples of *by*-phrases. In the expression *the house is by the tree*, *by* refers to a stative relation, where the trajector (*the house*) is located in the neighborhood of the landmark (*the tree*) within the spatial domain. Next, in the expression *this symphony is by Mozart*, *by* indicates that the creation of that symphony is responsible for Mozart, and the *by*-phrase designates a proximity relationship not in the spatial domain but in the domain of 'responsibility', where the trajector (*this symphony*) is situated in the neighborhood of the landmark (*Mozart*). In this case, the landmark functions as a source of responsibility, not the spatial reference-point like the previous example. Finally, in the expression *bragging by the officers will not be tolerated*, *by* also pertains to responsibility and the trajector, the bragging activity, is located in the neighborhood of the landmark (*officers*).

Through these examples, the essential semantic value of *by*-phrases comes to be explicit; it designates a proximity relation, with the trajector located in the neighborhood of the landmark, in a domain either of space or of responsibility. Furthermore, the *by*-phrase which appears in passives is the same as that of responsibility; for example, the *by*-phrase in *Bill was approached by Alice* designates that *Alice* is actually responsible for the described event (see Langacker (1982) for further arguments).

Let us return to the issue of middles and passives. The reason why the passive alone is allowed to involve a *by*-phrase is accounted for straightforwardly now. Following the precedent discussion, it is the agent that has responsibility for the action in the passive. Representing the agent of the passive sentence in the *by*-phrase should be reasonable, because one of the semantic values of *by* is to represent that its prepositional object bears responsibility, and in the passive the agent is actually responsible for the action, being the Primary Energy Source. In the middle, however, representing the agent in a *by*-phrase should be incorrect semantically, because the agent is not the Primary Energy Source and hence not responsible for the action; it does not accord with the preposition *by* which invokes the source of responsibility.

It has been shown that the notion of responsibility which van Oosten uses to explain middles is a result of our construal that the mover is the Primary Energy Source in the action chain of the middle. Additionally, the argument here also suggests that the preposition *by* is not a mere syntactic, meaningless device to represent the demoted subject. A view which lacks semantic and cognitive factors would make the middle construction more problematic, finding it impossible to posit the demoted subject in a *by*-phrase unlike the passive. Such a difference between the middle and the passive as to the sanction of *by*-phrases could not be explained unless we take into consideration their difference with respect to cognitive status of the

agent and the semantic value of 'grammatical' morpheme such as *by*.

4.2.2 *The Implied Agent*. As observed in 4.1.3, the adverb appearing in the middles refers either to the facility (*easily*) or to the achievement (*well*) of the described action. Adverbs which pertain to some nature of a particular agent should be excluded, while they would be allowed in passives:

- (32) a. \*The umbrella folds up skillfully.
- b. \*The dog food cuts and chews slowly.
- c. \*The car drives carefully.
- (33) a. The umbrella is/was folded up skillfully.
- b. The dog food is/was cut and chewed slowly.
- c. The car has been driven carefully.

Although both the middles (32) and the passives (33) do not express the agent explicitly, it is the former, and not the latter, that does not permit such manner adverbs as *skillfully*, *slowly*, and *carefully* due to the non-specificity of the agent. If the agents of the passives in (33) are understood to be non-specific as well, how are they different from the middles in (32)?

Then, consider the action chains of the middle and the passive again, sketched in Figure 15:

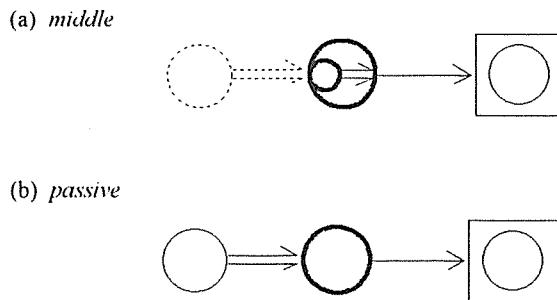


FIGURE 15

First, one crucial point is that the middle requires the agent always to be non-specific in order to highlight the mover in the action chain. The passive, on the other hand, is neutral with respect to the specificity of the agent. In fact, examples in (34) may or may not involve specific agents.

- (34) a. The umbrella was folded up skillfully by John.
- b. The umbrella was folded up skillfully even by children.

Even if the agent in the passive sentence is non-specific, it is possible to be expressed overtly like (34b). But it will be preferred not to represent the non-specific agent even in passives, as follows:

(35) French is spoken in Canada (by people).

In this regard, the passive comes to be close to the middle when it involves the non-specific agent, still keeping the possibility of expressing it. Note that the responsible participant in the passive sentence is nevertheless the agent, even if it happens to be non-specific as in (35), and the representation by the action chain is basically the same as Figure 15(b). For the reason why the responsible, non-specific agent is often backgrounded, I would speculate that responsibility is weakened when it is shared, to the extent that it does not appear explicitly into the foreground.

To sum up, the distinction between implied agents in the middle and the passive is made by looking into whether the non-specificity of the agent is obligatory or arbitrary. We will consider some relevant issues in what follows.

*4.2.3 The Mover's Property.* Looking at Figure 15, we find another difference between (a) and (b) with respect to the status of movers. Adding to the non-specificity of agents observed in the precedent section, the middle's mover exerts some energy from its active zone. Hence, the middle differs from the normal active sentence in many ways, whereas the passive can be altered easily into the active just with a shift of the 'figure' from the mover to the agent.

I mentioned in the previous section that the middle construction invokes a 'property reading' since the property of the subject (the mover) functions as the 'active zone'. It is not only the middle but also the passive, however, that induces a property reading.

(36) a. ??This book is read by John.  
 b. This book is read even by John, who is bookphobic.  
 c. This book is read by the President Clinton.

The examples above indicate that a passive sentence would be odd if it did not describe a property of the subject-participant. Admitting that unacceptability of (36a) pertains to a functional matter regardless of its 'grammaticality', the subject of the passive also requires something characteristic for the appropriate use. This is so because the participant which lies downstream from the agent in the action chain would not be salient unless it has something special and gains our focus of attention.

Crucially, however, the passive differs from the middle with respect to the role of the participant in the subject-position; the subject of the middle is a somewhat energetic mover, whereas that of the passive can be any participants other than the mover (zero-role participant, for example). In this regard, we will find later that the middle needs for its base much higher transitivity than the passive due to the energeticity of the mover.

We have discussed the middle thus far in comparison with the passive, as to the responsible participant, the non-specificity of the agent, and the property reading. Although the two kinds of constructions crucially diverge from each other in many respects, they sometimes come to be close. Note that their designations are nevertheless not equal despite their proximity. A situation will be coded in a middle construction if we recognize in the situation that the mover is energetic and the agent is not specific, otherwise it will be coded in a passive sentence. This proves that different

ways of construals lead to different linguistic forms.

#### 4.3 Summary

In this section I have examined how the middle construction is represented by the action chain in order to capture the structure of the event this construction portrays. In short, the action chain of the middle is based upon the canonical transitive relation consisting of three segments (CAUSE, BECOME and STATE), and requires some factors as below:

- (i) The agent is understood to be non-specific (or generic) in order to be backgrounded and make the mover salient (or the 'figure').
- (ii) The mover exerts some reactive energy which facilitates or resists the energy of the agent. This energy is considered to come from the property of the mover, which functions as the 'active zone'.
- (iii) The energy of the mover contributes to the facility or achievement of the denoted action. Adverbs are required, therefore, to refer to particularity as to the facility or achievement.

Employing the action chain, I will explain in the next section what verbs are possible in middle constructions and why they are regarded as acceptable, and deal with some problems left unsolved hitherto.

### 5 ANALYSIS BASED UPON THE ACTION CHAIN

So far we have noticed that, represented in the action chain, the base of the middle construction corresponds to a *canonical transitive relation* including the non-specific, implied agent and the somehow energetic mover. In this section, I will demonstrate that the middle construction in English strictly presupposes a canonical transitive relation, and deviations from it crucially affect the acceptability of this construction. I will also handle some remaining problems with the middles and their variants.

#### 5.1 A Canonical Transitive Relation Presupposed as the Base

5.1.1 *Affectedness and the Action Chain.* It has been said that a predicate undergoes the middle formation if it has an 'affected' argument (Keyser & Roeper 1984).

- (37) a. This fabric launders nicely.
- b. The Latin text translates easily.
- c. This clothes wash easily.
- d. This meat cuts easily.

(38) a. This car drives easily.  
 b. These weeds pull out easily.  
 c. Small packages ship easily.  
 d. The door opens only with great difficulty.

(Fellbaum 1986)  
 (Fagan 1992)

In (37a), for example, *this fabric* is caused to change the state by the activity of laundering and recognized as an affected argument. This affectedness constraint seems convincing at a glance, though the notion 'affectedness' is quite vague and stipulative in any frameworks.

If it is safe to realize simply that affectedness implies some change of the participant which appears in the subject-position of the middle, this notion has already seen in our model; BECOME and STATE segments in the action chain display the affectedness of the mover.

Hence, the affectedness constraint provides support for establishing a generalization as follows:

(39) *Presupposition of Middle Constructions*

the action chain of the middle presuppose a canonical transitive relation which consists of three segments (CAUSE, BECOME and STATE), and therefore involves a participant's change of location or state (thus to be affectedness).

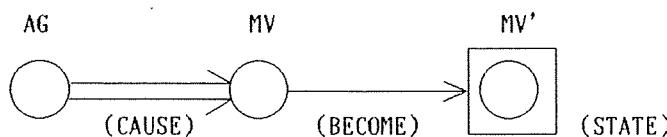


FIGURE 16: Canonical Transitive Relation

To confirm the validity of this presupposition, I would like to examine various examples of middles in terms of their structures of the action chain.

5.1.2 'Sell' and 'Buy'. I would like to examine in detail why we cannot say (40b) while (40a) is perfectly acceptable, which is one of the most mystifying problem on the English middles.

(40) a. This book sells well.  
 b. \*This book buys well.

I suppose that this question arises from our empirical notion that these two activities are, as it were, just two sides of the same coin: when someone sells something, there must be someone else who buys it. Thus, *sell* and *buy* are regarded as based on the same transaction chain, but *buy* could never be used for the middle construction.

As mentioned earlier, van Oosten (1986) accounts for (40b) saying that *this book* (an item on sale) cannot be responsible for the activity of buying. Her claim seems insufficient, however, because those goods do have responsibility, otherwise we would not be induced to buy them or would not purchase on impulse just looking at

them. I dare say therefore that 'responsibility' is not a sufficient condition of the middle construction. Rather, following the argument in 4.2.1, responsibility of the subject of the middle is derived as a result of perceiving a situation involving a mover which is the Primary Energy Source.

We have to shift our point of view from the notion of responsibility and seek the reason in another aspect. First, I will consider the difference between *sell* and *buy* with respect to their internal cognitive structure in a lexical level. Figure 17 shows the action chains of those two verbs.

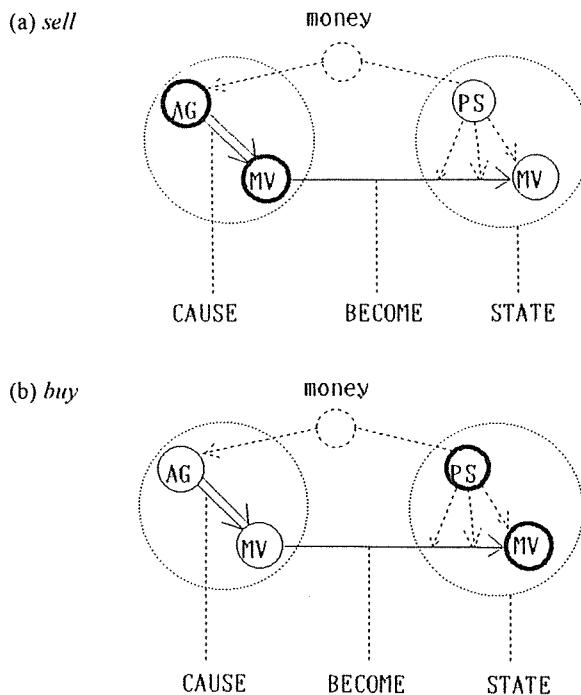


FIGURE 17

Figure 17 (a) and (b) are based upon the same action chain of transaction. Energy asymmetrically flows from the seller in the source domain to the buyer in the goal domain, hence the latter would not be recognized as the agent in terms of the energy flow, since it does not occupy the 'head' of the action chain. Nevertheless, it takes mental contact with an item on sale as indicated in dashed arrows in the diagram, and it is called the *possessor* instead. The mover in each diagram refers to the item on sale, which moves from the agent to the possessor.

Other things being equal, *sell* and *buy* differ in the imposition of cognitive salience on the same base. In the case of *sell* which is illustrated in Figure 17(a), the most prominent participant (the trajector) corresponds to the agent, and the mover is selected as the secondary figure (the landmark). In a normal transitive clause, such relative salience will be reflected in the choice of the subject and direct object; the trajector goes to the subject position and the landmark to the direct object.

In Figure 17(b), which sketches the structure of *buy*, it should be the possessor in turn that is selected as the trajector, the subject of *buy*. Recall the argument in section 3 that the most prototypical candidate for the subject is the agent, that is, the 'head' of the action chain. Compared with the prototypical case, the lexical structure of *buy* is quite marked; it selects as the subject the possessor which is neither energetic nor the head of the action chain. In terms of the internal structure of the action chain, the contrast regarding relative salience will be interpreted as follows: *sell* designates a canonical transitive chain and a canonical alignment of the trajector/landmark, but *buy* deviates from it. That is why *buy* cannot satisfy the presupposed condition of the English middle.<sup>11</sup>

Generally, a class of verbs whose subjects (trajectors) are the 'recipients' would be hard to occur in the middle constructions, due to their marked coding.

(41) a. \*Flowers receive with pleasure.  
 b. \*Certain titles inherit automatically in France. (Fellbaum 1986)

I propose that there is another factor that makes (40b) crucially unacceptable. Let us consider the combination of *buy* and *well* shown in this example. I observed in 4.1.3 that the adverb *well* is result-oriented referring to the achievement of the described action and thereby only the STATE-segment functions as the 'active zone' in relation to the setting. However, in the structure of *buy* in Figure 17(b), the trajector is the possessor who lies in the STATE-segment of the overall action chain of transaction. It means that *buy* already determines the STATE-segment; in other words, it lexically designates the result of the transaction. Then the expression *buy well* is impossible, since the result of the action is already fixed in the verb *buy*, and not something the result-oriented adverb can modify.

That brings us to assume that why *buy* cannot be used in the middle construction is partly because the combination of *buy* and *well* is inappropriate, not because *buy* itself cannot undergo so-called middle formation nor because the item on sale cannot be responsible for the action of buying. This idea will be supported by the example below:

(42) The low mortgages on these houses means that *they buy easily*. (O'Grady 1980; my emphasis)

When a middle construction involves *buy* together with *easily*, it is more acceptable than (40b) (albeit marginality). Although *buy* has a marked structure which specifies the tail of the action chain, it is possible to modify the mental contact of the possessor by the process-oriented facility adverb like *easily*, if we focus on the mental contact *per se* and regard it as processual. Japanese examples also show the

<sup>11</sup> The asymmetrical relation of *sell* and *buy* is inspired by the analysis of the contrast between *give* and *receive* in Langacker (1990). However, the role of the possessor in the case of *buy* should be more complex than that of *receive* since the possessor also initiates the path along which 'money' traverses, as indicated by the dotted arrows in the diagram. Nevertheless, I maintain that the trajector of *buy* lies in the tail of the action chain with respect to *sell*. The process initiated by the possessor is profiled in the verb *pay*, but not included saliently in *sell* and *buy*.

same contrast as regarding *buy well* versus *buy easily*.

(43) a. \*Kono hon-wa yoku ka-eru  
 this book-Subj well buy-Mid  
 (this book buys well)  
 b. Kougai-no ie-wa kantanni ka-eru  
 suburb-at house-Subj easily buy-Mid  
 (houses in suburbs buy easily)

To sum up, the reasons why we cannot use *buy* in a middle sentence are as follows: (i) its structure of the action chain is marked in that it highlights the tail of the chain, and the combination with an achievement adverb like *well* is prohibited due to its specification of the STATE segment, and (ii) its marked structure described above does not match the canonical transitive relation presupposed for middles. *This book buys well* is absolutely unacceptable because of both (i) and (ii), while *these houses buy easily* is a little better than the former example since it escapes from (i), but the other reason (ii) makes it still peripheral.

5.1.3 *Perception Verbs*. A class of perception verbs are not compatible with the middles in general, as below:

(44) a. \*The mountain sees clearly from a distance.  
 b. \*The loud noise hears easily.

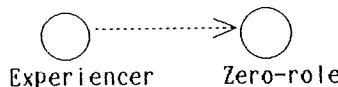


FIGURE 18: Perception Verb

These examples are not sanctioned simply because the perception verbs do not form a presupposed action chain; in Figure 18, the dashed arrow represents 'mental contact' of the Experiencer, and the object of perception would not be caused to change its state (thus called a zero-role participant<sup>12</sup>). It would be hard, if possible, to interpret the experiencer metaphorically as exerting some energy, just as in the psychological predicates, and causing the object to change.

5.1.4 *Surface-contact Verbs*. Next, verbs of surface-contact like *hit* or *kick* do not occur in the middle, but with a resultative secondary predicate it can be an appropriate middle sentence.

(45) a. \*This nail hammers easily.  
 b. This kind of metal hammers flat easily.

<sup>12</sup> The term *zero-role* is defined in Langacker (1991b). It refers to a participant whose change after receiving energy is of zero-value.

As Figure 19(a) illustrates, the action chain of *hammer* has no implication of the last two segments, BECOME and STATE, and the object of hammering activity might not suffer any change, perceived merely as a zero-role participant. Although the state of the object could be changed by hammering, such a potential transition is excluded from the scope of *hammer* in a lexical level, and clearly its action chain does not accord with the presupposed transitive relation. In (45b), on the other hand, the added resultative predicate *flat* implements the STATE-segment which *hammer* lacks, as sketched in Figure 19(b), and the object of *hammer* (*flat*) is fully understood to be caused to change its state. Hence, a surface-contact verb with some resultative predicate automatically satisfies the presupposed condition of the canonical transitive relation.

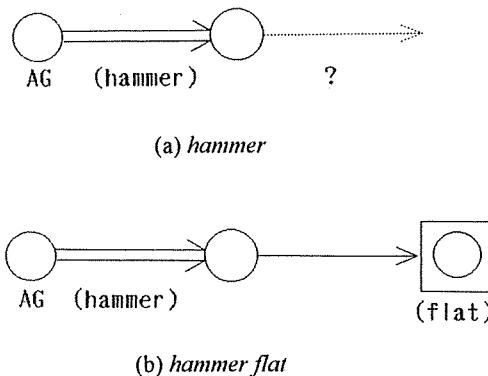


FIGURE 19: Surface-contact Verb

Note that the resultative specifying the STATE-segment does not conflict with our discussion in the previous section, where we found that the unacceptability of *this book buys well* is partly due to the marked structure of *buy* specifying the STATE-segment. In the case of *buy*, specification of the STATE-segment comes to be problematic when it is combined with *well*, which is a result-oriented adverb. Similarly, the connection of the resultative and the adverb *well* is expected to be wrong, and so it is in fact.

(46) \*The metal hammers flat well.

Thus, it has to be mentioned that the specified STATE-segment itself does not matter unless we try to modify it with an achievement adverb like *well*.

*5.1.5 Verbs of Creation.* A class of verbs of creation cannot take place in the middle constructions, as below:

(47) a. \*These cabinets build easily.  
 b. \*Wool sweaters knit easily.  
 c. \*Those shoes are manufacturing in Brazil.

(Fellbaum 1986)

Such creation-verbs as *build*, *knit*, *manufacture* do not form the presupposed canonical transitive relation. In Figure 20, which portrays their structures in a representative action chain, the agent does exert creative energy but its recipient is null at first. The created objects *these cabinets*, *wool sweaters* and *those shoes* will correspond to the participant of the last segment in the action chain, because they are all embodied in accomplishing the creation activity. As indicated in the diagram, these creative verbs are represented as lacking the intermediate participant, hence do not satisfy the presupposition.

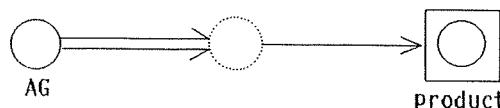


FIGURE 20: Creation Verb

Note that pseudo-creative verbs are readily used in middles.

(48) a. Those toys assemble easily.  
 b. Black-and white film develops easily. (Fellbaum 1986)

The objects of *assemble* and *develop* are not null but still present in another form before performing the described activity. (One might doubt, for example, that the object of *knit* in (47b) should be present as well. But it must be merely substance and different from the objects in (48)). They implement the participants which the creative verbs in (47) miss, and thereby pass the presupposed condition.

Lastly, middles with verbs of deconstruction seem to be unacceptable, as exemplified below:

(49) \*The cathedral destroys easily.

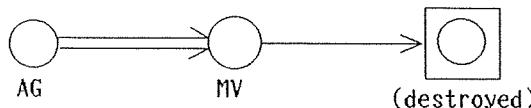


FIGURE 21: Deconstruction Verb

A deconstructive verb such as *destroy* is recognized no doubt as forming the presupposed action chain. The reason why (49) is unacceptable is that the situation it describes cannot take place in our experiences; the evaluation of whether a building destroys easily or not would be impossible while it keeps standing, though (49) itself is quite well-formed. Another example shows that the use of *destroy* in the middle will be possible if the situation is evaluated in a non-factual domain.

(50) The cathedral *will* destroy easily.

It is proved that the cognitive implausibility has an effect of lowering acceptability

of the middle sentence, even if it satisfies the action chain required for establishing the middle constructions.

*5.1.6 Deviation from Affectedness in Another Aspect.* Here is a well-known counter-example to the affectedness constraint:

(51) This book reads easily.

It has been pointed out that reading activity does not affect on the state of the book, though the middle verb *read* is perfectly accepted as in (51). This is a problem for our analysis as well; if the state of the book undergoes no change at all through reading, the action chain of *read* would not involve a participant which is identified with the mover, and would not match the presupposed action chain. But is it really impossible to recognize that *read* also has the action chain involving the mover? Compare the following examples:

(52) a. This book reads easily.  
 b. \*This book understands easily.

In (52b), *understand* is analogous to the perception verb dealt with previously, whose relevant participants are the experiencer and the zero-role object, and therefore they could not take part in the middle construction. If the book, the object of *read* were also the zero-role participant equivalent to the object of *understand*, acceptability of (52a) and (52b) would make no difference. That leads us to assume that the status of the book in (52a) and (52b) differs from each other, and nevertheless *the book* in (52a) is perceived as a mover. In fact, reading activity involves a sort of motion; that is, the movement of pages or even our eye-contact with the book. In this regard, (52a) designates that the pages move quickly from the first to the last as we read it due to its plainness, although it is still deviant from the prototypical mover that undergoes physical or stative change. However, schematically it could be categorized as a mover in that its subparts are caused to move as a result of receiving energy. Under those assumptions, *read* properly forms a canonical transitive relation presupposed for middles and is eligible to occur in this construction.

*5.1.7 Summary.* So far we have examined unacceptable middle verbs and accounted for why they are not compatible with this construction in terms of the action chain. It has been attested that a canonical transitive relation is presupposed in order to function as the base of the middle, which is considered to be a real motivation of the affectedness constraint proposed by previous researches. In the analysis proposed here, we can predict that a transitive verb can be used appropriately in the middle if the event described by that verb accords with the presupposition; when it deviates from a canonical transitive relation, it can still occur in this construction with some implementation of the deviation (like *hammer* and *hammer flat* in 5.1.4). This presupposition of the middle construction also suggests that it requires 'high' transitivity to the extent that it matches a canonical transitive relation, provided that

there is varying degree of transitivity among transitive verbs.<sup>13</sup>

### 5.2 *Residual Issues*

5.2.1 *Instrument-subject Middles.* Although the sentences below are interpreted as middles, yet they deviate from what we have seen so far; each of them has a subject which is identified not with the mover but with the instrument:

- (53) a. This knife cuts well.
- b. This pen writes well.
- c. This cream polishes nicely.

As illustrated in Figure 22, the instrument intermediates between the agent and the mover and transmits energy through it.

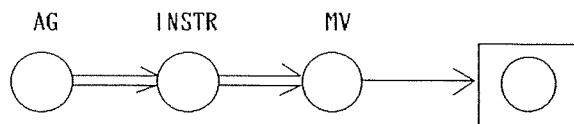


FIGURE 22

The representation above suggests that we can analyze the instrument-subject middle parallel to what we have dealt with. In Figure 23, the property of the instrument facilitates or resists the energy from the agent, who has to be non-specific again in order to function as the 'ground'.

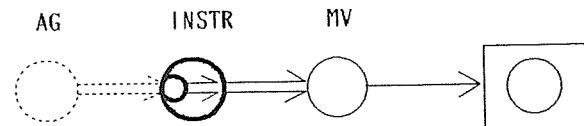


FIGURE 23

Note that the instrument is originally an energetic participant who transfers energy, as indicated in the double arrow in the diagram.<sup>14</sup> That is why the instrument is easily selected as the subject of the middle construction, and the instrument-subject middles are more productive than the mover-subject ones.

<sup>13</sup> Also I have to mention the insufficiency of the analyses based on the temporal aspect of the transitive verbs. Fagan (1992) argues that the transitive verbs of 'activity' and 'accomplishment' can undergo the middle formation. However, it is apparent that not all the acitivity and accomplishment verbs can be used properly in this construction; for example, *\*the house builds easily*.

<sup>14</sup> The instrument is sometimes regarded as a kind of the agent. See Schlesinger (1989) and Nishimura (1990) for this discussion.

5.2.2 *Locative-subject Middles.* Some middles take locatives as their subjects as seen below, although they are often considered marginal.

(54) a. ??This lake fishes well.  
 b. This (golf) course is just playing tough today.<sup>15</sup>

Such locative-subject middles are greatly deviant from what we have seen, including the instrument-subject ones, in that the locatives are identified not with the 'participant' but with the 'setting' of the action chain.

The distinction between participants and settings is crucial (Langacker 1990), especially to the following phenomenon originally discussed in Rice (1987):

(55) a. Marsha was rushed to by Fred, who needed advice.  
 b. \*The countryside was rushed to by Fred, who needed advice.

In (55a), the sequence [V + P] is reanalyzed into a complex V and *Marsha* in the subject position is essentially the direct object of the complex V and hence licensed to be passivized. In (55b), on the other hand, passivization is impossible because *the countryside* in the subject position is not a participant, unlike *Marsha* in (55b), but a setting in which the action chain is located. Then the reanalysis of [V + P] does not take place and *the countryside* is not regarded as a direct object.

Langacker (1990) also proposes that the setting might be selected as the 'figure' of the overall event, as exemplified below:

(56) a. Many historical events have been witnessed at Independence Hall.  
 b. Bees are swarming in the garden.  
 (57) a. Independence Hall has witnessed many historical events.  
 b. The garden is swarming with bees.

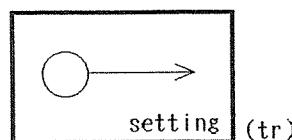


FIGURE 24: Setting-subject Construction (Langacker 1990: 231)

Expressions in (57) are called *subject-setting constructions*, and they focus on the relation between the setting and the process (represented by the action chain), rather than the interaction of participants. (57a) and (57b) will be paraphrased approximately as follows, respectively:

<sup>15</sup> This example is brought to my attention by Michael T. Wescoat.

(58) a. Independence Hall has been the setting for {witnessing many historical events}  
 b. The garden is the setting for {swarming of bees}

Considered in a similar way, the sentences in (54) might be interpreted as below:

(59) a. This lake is the setting for {fishing well}  
 b. This course is the setting for {playing tough}

But we find that each of (54) conveys more information than each of (59) does (specifically (59b) is quite deviant from the putative proper translation of (54b)). What (54) describe is not merely that the subject is the setting for the action, but that the facility or achievement of the action depends on the nature of the setting. Thus, it is assumed that in (54) the setting affects the denoted action, just as the mover and the instrument in the foregoing analysis. If we are allowed to suppose that the setting is the Primary Energy Source in the sense that it is responsible for the denoted action, as sketched in Figure 25, expressions like (54) will be interpreted as a kind of the middle construction.

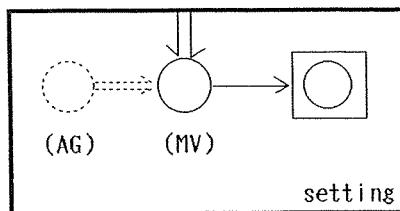


FIGURE 25

However, the construal of a situation like Figure 25 would be rare, possibly because the role of the setting is fairly far from participating in the energetic interaction, if we presume a kind of energeticity hierarchy (agent > instrument > mover/patient > zero > setting).

*5.2.3 Genericity of Middles.* It is often observed that middles are generic or stative, in that the tense is almost limited to the simple present.

(60) a. ?This car drove easily yesterday.  
 b. \*This book is reading easily.

However, I regard the genericity of middles as a matter of degree, just as the 'stativity' of stative verbs. There are some evidence to think so, in Fellbaum (1986):

(61) a. Her latest novel is selling like hotcakes.  
 b. The truck is handling smoothly.  
 c. The steaks you bought yesterday cut like butter.  
 d. The paint we were persuaded to buy sprayed on evenly.

Stative verbs also permit the present progressive in particular situations.

- (62) a. The baby is resembling his father day by day.
- b. I am knowing the Professor better and better, through reading his works little by little.

Nevertheless, the prototypical tense of middles is the simple present as we have seen so far.

What makes the middles somehow generic may pertain to the ‘active zone’ of the mover (subject). I argued earlier that the property of the mover works as the ‘active zone’ and thereby the middle induces the property reading. In addition, I will assume that the function of the middle is to present the speaker’s evaluation of the property. If some property of an entity is assumed to be stable through time, it is not necessary to represent its time-reference and the default-tense, the simple present, will be used (e.g. *The sun rises in the east.*). But conversely, if the property or its evaluation is changeable through time, some time-reference is required in order to articulate when the object in question is evaluated. In (60a), the property of the car with respect to the facility of one’s driving it will not change unless the steering wheel or gearshift lever get improved. Hence, the property is regarded as stable and the time-reference is not needed. In (61a), it is true that the property of the book might be the same through time concerning its content or whatsoever, but the reader’s evaluation of that book will change; then it is necessary to make the time of evaluation explicit. In many cases the property of the object is stable and therefore the simple present tense is preferred to describe it. Still, the tense of middles depends on whether we recognize the property or its evaluation to be variable or not.

5.2.4 *For-phrases in Middles.* Occasionally, middle constructions accompany *for*-phrases as follows:

- (63) This book reads easily *for Mary*.

Stroik (1992) argues that *Mary* in the *for*-phrase is the agent in (63), and tries to explain that this is a syntactically demoted argument.

I will object Stroik’s view, and account for the status of *for*-phrases in the cognitive framework. We will begin by considering the semantic value of *for*, which might have various usage forming a lexical network. Since the elaboration of the lexical network is beyond our immediate task, I just look at some of the usage of *for* which seem to be quite close to the one in (63).

- (64) a. He is tough for his age.
- b. This dress is too big for me.

Each *for*-phrase above designates a reference-point for evaluating the clausal trajector (the subject) relative to the scale of toughness in (64a) and size in (64b). In (64a), for example, the trajector *he* occupies the positive value on the scale of toughness, the norm point of this scale corresponding to his age. This situation is illustrated in Figure 26. It implies that, although the man might not be ‘tough’ if

evaluated objectively, shifting the reference point up to his age enables him to be 'tough' relatively.

I assume that the *for*-phrase in the middle is akin to what we have just seen; it also functions as denoting the reference point of evaluation.<sup>16</sup> As we observed before, in middles the action chain is evaluated relative to the scale of facility or achievement which the adverbs *easily* or *well* represent. Thus it is reasonable to think that the *for*-phrase in the middle also alters the value of the norm of the scale, as sketched in Figure 27. Such a function of *for*-phrases as indicating reference points might correspond to what Zribi-Hertz (1993) calls the *point-of-view*, and I agree with her in this respect.

Then, why is the participant in the *for*-phrase considered to be the agent of the middle construction incorrectly? I would attribute the reason to the agentive nature of the participant. Especially in middles, if the *for*-phrase is involved it will denote the reference point of a particular individual, like *Mary* or *John*. Apart from the preposition *for*, they often play the role of the agent which is prototypically energetic and volitional. What is misleading might be the inherent character of the prepositional objects of *for*, but we could find they are not agents at all, with a little consideration of the semantic value of *for* itself.

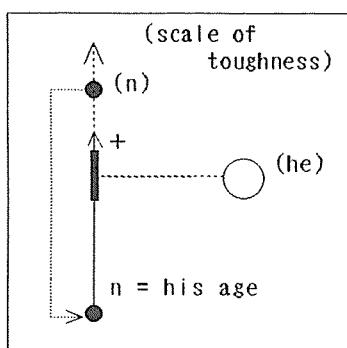


FIGURE 26

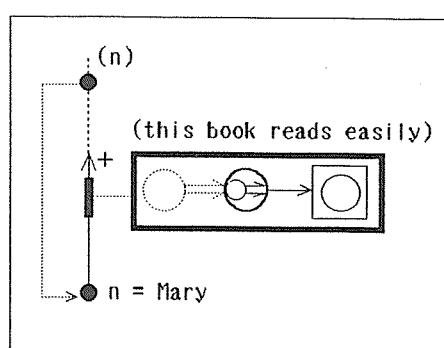


FIGURE 27

<sup>16</sup> Someone might doubt the central meaning of *for*, bringing a counterexample like below, where the *for*-phrase represents the logical subject of the infinitive:

(i) it is easy for Mary to play the piano.

I would like to propose that the *for*-phrase above is not a mere grammatical marker of the infinitival subject but a reference point of evaluation essentially. Historically, the construction in (i) took the form like (ii), in which the adjective precedes the dative object directly:

(ii) It is possible *me* to come.

In the next stage, when the juxtaposition of the adjective and the object became impossible with the decline of the dative object, the preposition *for* was required:

(iii) It is possible *for me* to come. ([: pause])

The *for*-phrase was thus associated with the adjective inheriting the construction of (ii). It shows that the *for*-phrase originally meant the reference point, and was not associated with the complement. It is not until the Modern English that the *for*-phrase and the complement is reanalyzed semantically and the pause is shifted to the place between the adjective and the *for*-phrase.

### 5.3 Conclusion

We observed in 5.1 an array of instances of middle construction, and it has been shown that their acceptability is properly predicted in terms of the action-chain representation. It was also proved in 5.2 that another facets of this construction are characterized precisely in our framework. I suppose the efficiency of a cognitive approach is fully attested here; in the following chapter I will propose that the cognitive approach reveals typological differences as well, and its efficiency will be intensified.

## 6 COMPARATIVE STUDY

Not only English but almost every language has in its linguistic system what is called a 'middle construction' or 'middle voice'. However, its productivity greatly varies from language to language. In this section I will examine the Japanese and French middles and investigate how they differ from the English middle, in terms of their conventional manners of the construal of situations.

Middles in French represent almost the same properties as those in English, except for the reflexive clitic which is characteristic of Romance languages but absent in English.

- (65) a. *Cette revue se vend bien.*  
this book REFL sells well
- b. *Ce livre se lit facilement.*  
this book REFL reads easily

First, generally the French middle also invokes a property-reading and it cannot be used to describe a particular event.

- (66) \**Ce livre s'est lit facilement hier.*  
(this book reads easily yesterday)

Secondly, the agentive participant cannot be expressed overtly.

- (67) \**Ce livre se lit facilement par les enfants.*  
(this book reads easily by the children)

However, the paraphrase of (65b) indicates that the agent is implied, and the personal pronoun *on*, which refers to the non-specific subject, also represents the non-specificity of the agent in French middles as well as the English ones.

- (68) *On lit ce livre facilement.*  
(people read this book easily)

Despite those shared properties, it is observed that the French middles involve

some transitive verbs which would not be accepted in English middles, as below:

(69) a. La Tour Eiffel se voit bien de ma fenêtre.  
(\*the Eiffel Tour sees well from my window)  
b. Ce poème se comprend facilement.  
(\*this poem understands easily)  
c. Cet obstacle s'évite facilement.  
(\*this obstacle avoids easily)

(Fellbaum & Zribi-Hertz 1989)

The English counterparts above are all unacceptable and they would be better in passives rather than in middles.

Japanese also has a class of middle constructions, in which the transitive verbs are changed into another forms added a morpheme *-(r)eru*.

(70) a. Kono hon-wa yoku ur-eru  
this book-Subj well sell-Mid  
(this book sells well)

b. Kono hon-wa kantanni yom-eru  
this book-Subj easily read-Mid  
(this book reads easily)

c. Kono hon-wa kantanni yakus-eru  
this book-Subj easily translate-Mid  
(this book translates easily)

d. Kono houchou-wa yoku kir-eru  
this knife-Subj well cut-Mid  
(this knife cuts well)

Although *-(r)eru* can be attached freely to any verbs and used to represent potentiality and the passive voice as well, we are concerned only with what is considered to display the same property as the English middle: the implication of the non-specific agent, the salience of the mover(instrument), and the genericity of the described situation. Japanese middles, as well as French middles, are compatible with some of the verbs which could not be used in English.

(71) a. Ano yama-wa tookukara-demo yoku mi-eru.  
           that mountain-Subj from-a-distance-even well see-Mid  
           (\*that mountain sees clearly even from a distance)  
       b. Kare-no joudan-wa waraw-eru.  
           He-Gen joke-Subj laugh-at-Mid  
           (\*his jokes laugh at (easily))

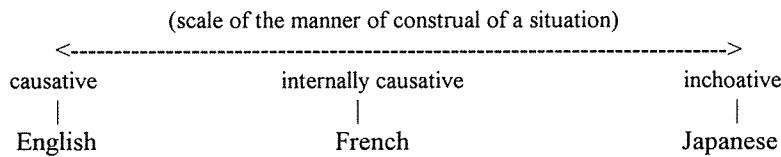
I would like to seek the reason why the middle verbs in French and Japanese are less limited than in English with respect to their differing manners of the construal of a situation.

Recall the observation of the psychological verbs in 3.2.3 again. In English, the inchoative and the stative are derived from the causative, and the agent in the

CAUSE-segment is always included within the scope of expression even if it is not described overtly in the prepositional phrase. This pattern of construal suggests the importance of the CAUSE-segment in English, and the construal of the inchoative is dependent on the causative. On the other hand, the French inchoative form does not include the CAUSE-segment any more. Thus, in French, the CAUSE-segment is not so significant in the construal of the inchoative as in English. Furthermore, the reflexive clitic in the inchoative indicates the internal 'causer', and preserves a causal relation within it. In the case of the Japanese inchoative, it underlies all the forms and the CAUSE-segment is recognized as a marked element. This suggests that the construal of the inchoative in Japanese is highly autonomous, even though any internal causal relation is not recognized unlike in French. These patterns of construal are summarized as follows:

(72) The basic manner of construal of situations:

- a. English: *causative*
- b. French: *internally-causative / inchoative*
- c. Japanese: *inchoative*



In the case of French, its manner of construal is called *internally-causative / inchoative*, in that the inchoative form keeps a causal relation internal to the relevant single participant, and the causative form is also established independently; in this respect, French construes the causative form more autonomously than Japanese, whose manner of construal is purely inchoative.

If the generalization in (72) also holds in the middles in these languages, we can explain their varying productivity of this construction straightforwardly. Consider the action chain of the middle again; what it describes is practically an event of the inchoative form, although its presupposed base is a canonical transitive relation of the causative form. Hence, it is assumed that the middle construction will be unmarked and productive if the construal of the inchoative form is also unmarked in a language. Thus, English middles are so restricted unlike French and Japanese ones because the construal of the inchoative form in English is considered to be marked as we noted in (72). Furthermore, we can predict that the English manner of construal will prefer the causative form to the inchoative form in describing the event denoted by the middle; it would be hard to scrape an inchoative event out of the causative one as in the middle, against its strong inclination to the latter. That is why there is a constraint on the English middle verbs that they should accord with a canonical transitive relation. I speculate that whether it is possible to construe the event as inchoative resides in the interpretation of the mover as a somehow energetic participant. To recognize the mover's energy as a reaction of the force from the agent, high transitivity is required to create such a reactive effect in the English middles. This constraint is not imposed on middles in French and Japanese, since their

manners of construal suggest that the inchoative form can be established easily.

Note that, if the inchoative construal of some events is fully conventionalized, they can be described in the middle construction easily even in English. The ergative verbs represent the established autonomous construals of the inchoative form, and they all have proper middle sentences, as below:

- (73) a. The door opened (all by itself).
- b. The boat sank (all by itself).
- (74) a. The door opens easily (\*all by itself).
- b. The boat sinks easily (\*all by itself).

As the adverbial phrase *all by itself* in each of (73) indicates, no agent (the CAUSE-segment) is implied in the ergative. Just with the adverb *easily*, the ergative sentence turns to be middle and its implication of the agent contradicts the phrase *all by itself*. This alternation of ergatives into middles supports our proposal that the unmarkedness of the inchoative pertains to the unmarkedness of the middle. If an inchoative form is conventionalized, the formation of the middle is not so hard; it does not require transitivity any more to attribute the energetic effect of the mover to a reactive effect, since it can be construed autonomously *per se*.

In summary, it has been brought ultimately that each language has its own manner of the construal of situations; the causative in English, the internally-causative and inchoative in French, and the inchoative in Japanese. It has also been confirmed that productivity of middles also depends on these manners. As for the contrast seen in English and Japanese, Ikegami (1981) characterizes English as a 'DO-language' and Japanese as a 'BECOME-language' respectively. His observation will be incorporated directly into our proposal that the basic manner of construal is the causative form in the former and the inchoative form in the latter.

Hence, the significance of differences of cognitive factors such as the construal of situations should be noticed in linguistics. Although these differing patterns of construal are not something like 'rules' and might be the inclination of the language, that would not be the valid reason to deny that such a cognitive contrast reflects the different distribution of a certain linguistic expression in languages.

## 7 CONCLUSION.

In this paper I have analyzed the English middle constructions in the framework of cognitive grammar, especially employing a cognitive model called the action chain which reflects fundamental aspects of our perception and image-schematic notions of the world. It has been shown that the action chain properly describes their properties, and accounts for acceptability of various middles. It also suggests possibilities of typological analysis of middle constructions as regarding their productivity in a language. Hence, we can conclude that the formation and understanding of middle constructions greatly reside in how we construe an event or a situation; that is why the cognitive approach proves to be revealing. It would be impossible to characterize middles precisely, as long as those cognitive factors are ignored in linguistic researches.

As a concluding remark, I would like to refer to varying acceptability of an expression in terms of the cognitive model. We have already noticed that, if there are some unacceptable middle sentences, the reasons for their inappropriateness are not always the same, and there are some levels at which the expressions are judged as unacceptable, as follows:

(i) An expression is not accepted if the described situation does not match the cognitive model of the construction employed.

(75) a. \*This book buys well.  
 b. \*This car drives carefully.

(75a) is excluded because the marked coding of *buy* does not satisfy the required canonical transitive relation, and because the combination of *buy* and *well* is semantically impossible. (75b) is against the presupposition that the agent in middles must be non-specific in order to make the mover salient. Thus those examples are predictable from the action-chain model.

(ii) An expression is not accepted if the described situation is not plausible cognitively, even if it matches the cognitive model.

(76) a. \*This house destroys easily.  
 b. ?This floor paints easily.

In (76a), for example, *destroy* accords exactly with the proposed action chain of the middle and there seems to be no violation. But, in reality we could not evaluate whether a house is always easy to destroy unless we destroy it. Note that the acceptability of this sentence will be improved only if a modal auxiliary is inserted, *this house will destroy easily*, in which the evaluation takes place only in the speaker's mind. In those cases, it is not the conflict with the action chain but lack of cognitive plausibility that lowers the acceptability.

(iii) An expression is not accepted if the information it conveys contains nothing particular, even if the described situation satisfies the cognitive model and plausibility.

(77) a. This metal recycles.  
 b. \*This dress buttons.

(79b) is not acceptable at all, though it matches the cognitive model and might also be plausible. But, the utterance of (77b) provides no particular information because it is quite natural for anyone to be able to button the dress. If it should be assumed in our world that the dress was generally difficult to button, (77b) could tell something about the property of the dress in question. Conversely, the negative counterpart of (77b), *this dress won't button*, is accepted without problem since the described situation is regarded as unusual and particular.

Thus, we can conceive at least three levels of acceptability of an expression, and it seems quite problematic to label all the unaccepted sentences 'ungrammatical' regardless of why each of them is excluded.

Especially, it will be attributed to the second reason (*ii*) that acceptability of middles often varies from individual to individual, since we do not necessarily share exactly the same perspective on the world. Someone might regard a situation as plausible enough, whereas others not; for instance, (76b) would be acceptable for people who are engaged with painting. Thus the cognitive plausibility depends on the context surrounding each of us respectively. Besides, a fact that middles require a marked construal of situations in English makes them more subject to the context.

Then someone might suppose that the middle sentences acceptable without context should be analyzed in the context-free linguistic theory, while others, which need a particular context for interpretation as in (76), would be of interests of the context-bound theory. But, my claim is that *every* sentence is inevitably context-bound. If an expression needs no special context for its interpretation, it means that it has only to invoke a prototypical context which is shared by everyone; otherwise, an expression would require a more specific context deviant from the prototypical one for interpretation. In this regard, there is no expression that would be independent from the context, prototypicality of which is considered to be varying.

Incidentally, here is an interesting observation that the utterances of children involve more middles, though they would be excluded from the adults' grammar.

(78) a. We have two kinds of corn: popcorn, and corn. Popcorn: it crunches. And corn doesn't crunch; it eats!  
 b. They don't seem to see. Where are they? (Pinker 1989: 299)

Examples above indicate that the formation of middles is much easier if the manner of the construal (the causative form) is not yet imprinted into children of English speakers, who might be viewing a situation from a free, non-fixed perspective.

As observed in section 6, the middles are marked especially for English speakers because of their causative-oriented manner of construal. Nevertheless, whenever they achieve such a marked cognition, they will select the middle construction superior to others to describe the conceived situation that matches the action chain of the middle. Note that the information a middle sentence conveys cannot be fully expressed in a more basic construction.

(79) a. This book sells well.  
 b. The property of this book enables us to sell it well.

The approximate semantic content of (79a) may correspond to that of (79b), but we find the latter quite lengthy and explanatory. Thus, the selection of a grammatical construction pertains to the representation of a conceived situation in the most economical way. Surveying the middle constructions, we have recognized the importance of cognitive aspects in analyzing them, and it should be found in analyses of other linguistic phenomena. Investigating how the middle differs from its analog (the *tough*-construction for example) with respect to cognitive organization will help us to articulate the properties of middles further.

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