

A Cognitive Construction Grammar View of English Middles: Resistant and Facilitative Sub-constructions*

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Abstract: This paper examines middle constructions in English from a theoretical viewpoint of Cognitive Construction Grammar, and offers a claim that this construction actually comprises two sub-constructions: affirmative “facilitate” middles and negative “resistant” middles. Furthermore, it will be shown that the resistant middle can be considered to be central in terms of the usage-based model of language acquisition.

Keywords: middle constructions, usage-based language acquisition, Cognitive Construction Grammar

1. Introduction

The middle construction in English, as in “This book sells well” “This book reads easily” has long attracted linguists’ attention for its intriguing grammatical and semantic properties. One notable characteristic is so-called “dispositional” meaning or “property” reading, in which the attributes of the subject referent either facilitate or impede the action of the implied agent. For example, “This car drives easily” conveys that anyone can drive the car without difficulty due to its efficiency, regardless of their driving skill. On the other hand, this construction often appears in a negated form like “This door doesn’t open,” meaning that one cannot open the door because of its attributes such as weight, shape, or material. This paper refers to the former as “facilitative” middle and the latter as “resistant” middle, as exemplified in (1) and (2) respectively:

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(1) Facilitative Middle:

- a. This car drives easily.
- b. This book sells well.

(2) Resistant Middle:

- a. The bread doesn't cut.
- b. The door won't open.
- c. This paper prints badly. (Yoshimura 2020: 292)
- d. The gears on his bicycle shift poorly. (Yoshimura 2020: 304)

The "facilitative" middle occurs with adverbs such as "easily" and "well" which indicate that the subject referent makes the implied agent's action easier to perform or achieve. The "resistant" middle may also involve similar adverbs such as "badly" or "poorly" in (2c-d), but such difficulty of performing an action is expressed most frequently by a simple negative marker as in (2a), accompanying the modal *will* as in (2b). Thus, hereafter the "resistant" middle mainly refers to the negated forms such as (2a-b).

In fact, an array of previous studies on middle constructions, irrespective of their theoretical standpoints, seems to have an unspoken understanding that affirmative sentences such as (1) are normative while negated sentences such as (2a-b) are derived from their affirmative counterparts by adding negative markers. The present paper challenges this view, and will show that the "resistant" middles with negative forms are actually more fundamental. The primary rationale for this view stems from theoretical and descriptive considerations, as observed in what follows.

2. Grammatical and Semantic Properties of Middle Constructions

This section reviews the grammatical and semantic properties of middle constructions as described in previous studies, and shows that the "resistant" middle does not always conform to these properties, especially in the unique characteristics of the "resistant" middle concerning modality. Finally, the necessity of the distinction of "resistant" and "facilitative" middles will be validated in the theory of Construction Grammar.

2.1 The Event Construal Encoded by Middle Constructions

To begin with, let us look at the event construal represented commonly by the "facilitative"

and “resistant” middles. As shown in the action-chain model in Figure 1, middle constructions exhibit marked encoding of a transitive event that focuses on the patient participant while leaving the agent participant unprofiled and implicitly included in its scope of predication. Such a construal of a transitive event is considered to be a limited case since, by default, encoding of a transitive event would make the human agent most salient. The implied agent of the middle is often understood as generic (e.g., *people in general*) or the speaker herself so that it could avoid receiving focal attention, but unlike passive constructions, it is impossible to be specified explicitly (e.g., “*This car drives easily by everyone”).

Langacker (1991) characterizes the patient subject of middle constructions as exerting some form of force on the agent. Based on this, Taniguchi (1994) represents the patient participant’s attributes as the active zone that directly influences the agent’s actions, as shown in Figure 1. Such forces operate in opposite directions in the “facilitative” middle and “resistant” middle, as in Figure 2 (a) and (b).¹

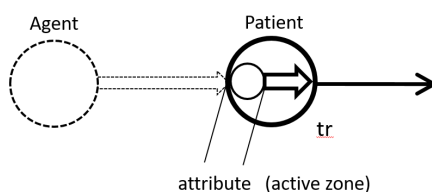


Figure 1: Action-chain representation of middle construction

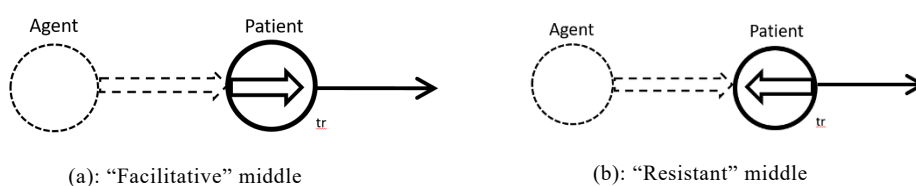


Figure 2

Additionally, another significant feature of middle constructions is the notion of “responsibility” borne by the patient subject in the realization of the event. Lakoff (1977)

¹ In the figures, double arrows and single arrows represent transmission of force and change of state or location, respectively. Relative salience accords with thickness of lines, and “tr” (trajector) indicating the most prominent participant in the described event corresponds to the sentential subject.

notes that, although grammatical "subjecthood" is paired with primary responsibility, control and volition that are typical semantic properties of agents as summarized in (3), the patient subject of a middle construction carries the property of "primary responsibility" as cited in (4).

(3) SUBJECTHOOD	(grammatical property)
pairs with	
┌ PRIMARY RESPONSIBILITY	(semantic properties)
CONTROL	
└ VOLITION	

(Lakoff 1977: 248)

- (4) In "The car drives easily," it is claimed that properties of the car are more responsible for the way it drives than is anything the agent does. Whereas normally PRIMARY RESPONSIBILITY is an agent property, in patient-subject sentences, it is a patient property.

(*ibid.*)

The concept of responsibility often plays a role in analyzing the acceptability of middle constructions (cf. van Oosten 1986), and exhibits a significant divergence from passive constructions, particularly in relation to the use of *by*-phrases that indicate the locus of responsibility.² While passives can specify the agent participant in a *by*-phrase, middles do not allow for this, as it is the patient subject who bears primary responsibility of the occurrence of the event.

- (5) a. The door was opened easily by John.
b. *The door opens easily by John.

2.2 Grammatical and Semantic Properties of the Middle Construction

Having observed the event construal encoded by middle constructions, we would like to demonstrate the reasons why this construction needs to be categorized into the

² As for the *by*-phrase in passives, see Langacker (1982) who analyzes it as denoting the proximity relation between the trajector and the landmark in the domain of responsibility.

“facilitative” and “resistant” middles. Among many grammatical and semantic properties of middle constructions identified in previous studies, three aspects will be addressed in which the “facilitative” and the “resistant” middles behave differently.

One of these aspects is, as already noted, the obligatory co-occurrence of adverbs or adverbial phrases that indicate the difficulty or degree of achievement of the action. In the “facilitative” middle, deleting the adverb renders the construction unacceptable as in (6b), or acceptable only in special contexts as in (7) where the speaker B emphasizes the reality of their experience of cutting the bread in contrast to what the speaker A expected.

- (6) a. This car drives easily.
- b. *This car drives.
- (7) A: I told you it would be hard to cut bread with a fork.
- B: But the bread did cut!

(Newman 2020: 14)

This indicates that the “facilitative” middles without adverbs are restricted, whereas it is quite natural for the “resistant” middle to occur without similar adverbs.

Second, middle constructions frequently function as generic statements and do not describe past episodes as in (8b). This is related to the implication of the generic agent as shown by the paraphrase in (9), as well as foregrounding the patient subject’s attributes as discussed in Section 2.1, since such attributes are unlikely to change over short periods, making them incompatible with one-time past events.

- (8) a. This car drives easily.
- b. *This car drove easily yesterday.
- (9) a. This car drives easily.
- b. People in general can drive this car easily.

However, the “resistant” middle includes not a few instances that deviate from such grammatical and semantic properties. Consider the examples in (10):

- (10) a. I took a self-portrait, but it would not develop.
- b. The association broke new ground, but it did not build on the new ground.

- c. He tried to tear the program, but it would not tear.

(Bassac and Bouillon 2002: 34)

The sentences in (10) are regarded as the "resistant" middles of negated forms, and do not require the co-occurrence of adverbs or adverbial phrases as has been observed so far. In addition, the sentences in (10) are all in the past tense, describing particular episodes. The implied agent can be specific, such as the speaker in (10a) and "he" in (10c).³

Finally, the "resistant" and "facilitative" middles exhibit differences regarding modality. It is characteristic of the "resistant" middle, as previously demonstrated, that it frequently accompanies the negated form modal auxiliary *will*, as in "the door won't open." Huddleston and Pullum (2002) provide the following interesting explanation on the use of the modal auxiliary *will* of this sort:

- (11) Volition implies a human or animate agent, but something akin to a metaphorical extension of volitional *will* is found with inanimates when it is a matter of satisfying human wants, as in "The lawnmower won't start" (someone is trying to start it) or "The books won't fit on one shelf." These again appear freely in conditionals: "Give me a call if the engine won't start."

(Huddleston and Pullum 2002: 194)

According to the above description, in the case of the "resistant" middle, the volitional use of *will* is metaphorically extended and applied to inanimate subjects wherein human desires play a crucial role. It is important to note that an inanimate subject co-occurs with the volitional *will* only when a human agent's (actor's) desire is obstructed. To confirm this, let us take a look at the following examples collected from the Corpus of Contemporary American English (COCA), where the middle predicate "won't start" takes

³ Note that "this book sold well last year" is acceptable since it describes attributes that held over a limited period in the past. Also, some "facilitative" middles can be episodic according to Bruening (2024):

- (i) a. The butter spread easily after I microwaved it.
b. The elliptical machine is assembling more easily than I anticipated.

(Bruening 2024: 38)

These examples are episodic because they describe the attributes of the subjects (the butter and the elliptical machine) newly created or discovered by the speaker.

an inanimate subject. In each case, the context suggests that the actor is attempting to activate the referent of the inanimate subject (e.g., *car*, *Windows*):

- (12) a. If your car *won't start* and you look at only material reasons—
is it out of gas?
- b. What to do if Windows *won't start* correctly / Because troubleshooting system problems is a complex process.
- c. Hurry up! We have to go!—Start the car. —It *won't start*, sir. Quick as
you can, man. It *won't start*, sir. It *won't start*.
- d. Well, I wish I could, but it *won't start*. Gentlemen, I need a push here!
(COCA, italics mine)

Note that, although the modal auxiliary *will* is sometimes used in the "facilitative" middle, it functions as epistemic modal rather than volitional one. In (13), since the fragility of the cathedral cannot be determined without actually destroying it, the absence of epistemic *will* in (13a) renders it unacceptable:

- (13) a. *This cathedral destroys easily.
b. This cathedral will destroy easily.

On the other hand, the fact that *will* used in the "resistant" middle is not epistemic is supported by its occurrence in conditional clauses, as shown by Huddleston and Pullum's (2002) explanation in (11) as well as the collected data in (12a, b).

Thus, the "resistant" middle significantly differs from the "facilitative" middle in that it can accompany volitional *will*, strongly supporting the necessity of establishing a subcategorization of these two sub-constructions. The present paper explores why volitional *will* is frequently used in the negated form of the "resistant" middle, drawing evidence from language acquisition. As Huddleston and Pullum (2002) suggest, the use of volitional *will* with inanimate subjects in middle constructions reflects a metaphorical interpretation, where the inanimate entity is perceived as if it possessed intention. Our later discussion will examine why such metaphorical interpretation is specifically possible in the "resistant" middle.

2. 3 Middle Constructions in Construction Grammar

Lastly, we would like to examine how to formulate middle constructions in the framework of Construction Grammar (Goldberg 1995), which treats surface forms and their constructional meanings as fundamental units without assuming syntactic derivations. As for the formal generalization, the most typical middle construction (that is, the “facilitative” middle) will be captured in Construction Grammar roughly as in (14):

(14) Facilitative Middle: [SUBJ Vt Adv] <patient>

As observed earlier, the obligatory occurrence of the sentence-final adverb is one of the significant characteristics of this construction, though adverbs are generally treated as adjuncts that are not requisite elements in grammatical sentences. Moreover, the position of the adverb seems to be fixed in the case of middles, unlike the passives:

(15) a. This book reads easily.

b. *This book easily reads.

(16) a. This book was read easily.

b. This book was easily read.

(Newman 2020: 10)

This is where the advantage of adopting Construction Grammar lies, as it can accommodate idiosyncrasies regarding the occurrence of the adverb by formulating the constructional template as in (14). On the other hand, the pattern in (14) clearly does not apply to the negated forms of “resistant” middle; even if the negative marker *not* can be seen as negative adverb, its morphosyntactic nature radically differs from that of the adverb in “facilitative” middle. Therefore, the negated form of the “resistant” middle needs to be represented independently as follows:

(17) Resistant Middle (Negation): [SUBJ Vt-NEG] <patient>

Even if these two types of surface generalization are acknowledged, a problem still remains regarding their acquisition. Construction grammar posits a usage-based model in which syntactic constructions are abstracted from actual uses of linguistic items in a

bottom-up manner (Tomasello 2003). While the "resistant" middle is relatively productive and commonly used in everyday contexts, instances of the "facilitative" middle are difficult to detect as they are mostly found in advertising contexts (Sakamoto 2008).⁴ This gap in register suggests that the "resistant" and "facilitative" middles are acquired on the basis of differing usage experiences, and that the "resistant" middle is central to language acquisition as shown in the following section.

3. Middle Constructions in Language Acquisition: The "Resistant" Middle Comes First

This section will show the developmental stages and contexts in which children use middle constructions. Keyser and Roeper (1984), which analyzes middle constructions within the generative grammar framework, briefly mentions the acquisition of middles as follows:

- (18) We have in fact assembled preliminary evidence for two-year-olds indicating that they have ergative structures (whereas the similar middle structures do not appear until about the age of six.)

(Keyser and Roeper 1984: 410, n31)

Keyser and Roeper (1984) does not provide specific data regarding this, but if their reference to middle constructions pertains solely to the "facilitative" middle, the "resistant" middle of negated forms such as "the door doesn't open" may be regarded as ergative structures, suggesting its earlier acquisition.

Indeed, children's utterances involving the "resistant" middle have been observed as early as the age of two (Taniguchi 2011), and their usage conditions have been studied by Budwig, Stein, and O'Brien (2001) which examined the use of "non-agent subjects" in the spontaneous speech of six English-speaking children (ages 20 to 32 months). Below is a summary of their findings on the children's use of middles:

⁴ In fact, it is hard to detect instances of the "facilitative" middle in corpora. For example, we find no "X drives easily" expression and only eight samples of "X reads easily" in Corpus of Contemporary American English.

- (19) Non-agent subjects found in middle constructions linked up with utterances that functioned to mark goal-blocking or resistance from the environment. These spontaneous mentions most occurred when children were manipulating objects, but also often were found just after the children stopped manipulating objects.
(Budwig et al. 2001: 61)

Although Budwig et al. (2001) do not present detailed examples of children’s utterances, (19) suggests that middles are used when children’s intentional actions are obstructed by external factors in the environment—in this case, the object of the child’s action.

To quantitatively verify the tendency observed by Budwig et al. (2001), Taniguchi (2011) extracts child and adult utterances containing the unaccusative intransitive verb "open" with inanimate subjects from CHILDES (MacWhinny 2000) and analyzes their distribution. These utterances are categorized into affirmative, negative, and interrogative; as Figure 3 shows, the result reveals that affirmative forms are relatively rare (27% for children, 16% for adults), while non-affirmative forms are more frequent.

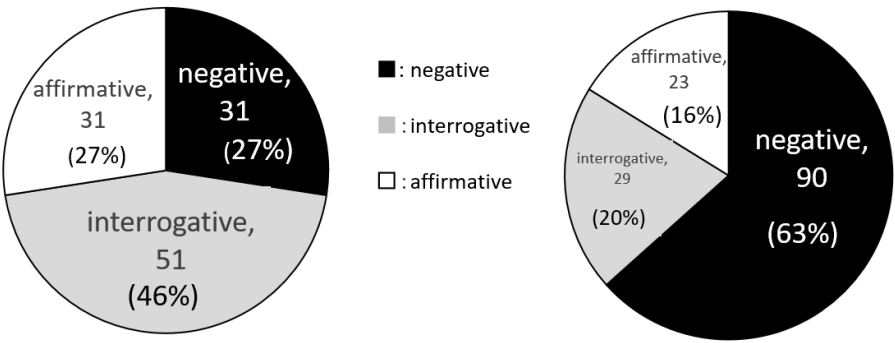


Figure 3: Utterances using intransitive *open* with inanimate subjects

Listed below are children’s utterances of interrogatives in (20), of negatives in (21) and adults’ utterances of negatives in (22).⁵

⁵ Information about the data is added at the end of each example. The child's age is indicated in square brackets [Year; Month; Day]. For adult utterances, [MOT] and [INT] stand for "mother" and "investigator," respectively. The chat ID and sub-corpus of the utterance are shown in parentheses.

- (20) a. big nest. /a what? /does it opens? /mhm. /does dat one open? [3;01;09]
(adam22, Brown)
- b. Mom open this. does this open? /well I don't I don't know. [2;10;05]
(pop33, Feldman)
- c. what is that? /does this open? do these open? do these open? [2:06:05]
(21a, Valian)
- (21) a. that door doesn't open. /nope it doesn't. /this one opens [2;10;22]
(ben09, Weist)
- b. mhm. oh. hey./ this doesn't open. /no. not all of them do Dominic. [2;9;19]
(domin31a, Manchester)
- (22) a. oh no it doesn't open. you play with it that way [MOT]
(adam19, Brown)
- b. no. it doesn't open. no. /yeah. /it doesn't open Becky. [MOT]
(becky04b, Manchester)
- c. don't open Chi. /it doesn't open. what happened? [INV]
(stnet3, HSLLD)

As shown above, children often use interrogative forms, whereas adults predominantly use negative forms. This distribution can be explained by the contexts of their interaction: children ask permission to open (e.g., "Does it open?") or ask how to open (e.g., "How does this open?") while adults intend to prohibit the action of opening (e.g., "It doesn't open"). These contexts align with the event construal of middle constructions where the agent (corresponding to the child) is implicitly involved in the event described. Therefore, the children's and adults' utterances of negative forms can be regarded as instances of "resistant" middles.

CHILDES data also include utterances of the "resistant" middle with volitional *will*. (23) and (24) are part of such instances of children's and adults' utterances.

- (23) a. I remember it *won't open*. That *won't open*. / Yes. / Here is the lid. This./
Oops. / I want / www. I wonder what is in here? [2;06]
(mac30, Feldman)
- b. That one *won't open*. No. It *won't open* all the time. It'll open as it goes round.

There. Go. Yes! Oh, nearly. [3;01;12]

(0-3, 3-01-12.150, Lara)

- (24) a. You're trying to look in this book? And this book *will not open* for baby.
 don't know why this book *won't open* for babies. Let's see! Let's see! I
 think we read up to this part anyway. [MOT]

(t1-1126, Brent)

- b. Lid shut. / The lid's shut? Yes, the lid's shut on the bottle, isn't it? / Yeah. Open.
 / It *won't open*, Thomas. I'll try, but no, it's stuck. I'm sorry. [MOT]

(2-04-17, Thomas)

These utterances are also produced in contexts where the children have experienced difficulties opening something, or where adults stop their children from opening something by saying like (24a).

Thus, the quantitative analysis based on CHILDES aligns with the tendencies described by Budwig et al. (2001): "resistant" middles, i.e., negative unaccusative sentences, are used in contexts involving "obstruction of intentional action." The high frequency of negated forms in adult speech also ensures that children receive a substantial amount of input for the "resistant" middle, facilitating its early acquisition. Such construal of an event is exactly what the "resistant" middle depicts as sketched in Figure 4, where children, who are both the agents of the action and the speakers of the utterances, focus more on the attributes of the object that impede their action.

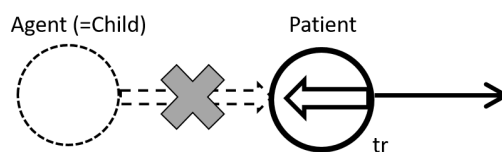


Figure 4: "Resistant" middle (children as agents)

Let us examine this situation in terms of the properties of the middle construction observed in Section 2. The notion of "responsibility" observed in Section 2.1 may also be relevant, as children attribute their failure to the object of the intended action, rather than to their own skills or performance. Also, when children encounter difficulties while trying to act on something, it would be probable that they perceive as if it were intentionally

exerting counterforce to hinder their action; if so, it is reasonable that the volitional *will* occur metaphorically in the “resistant” middle. Perceiving volition of the patient participant also plays a role in subject selection, as it is one of the three typical semantic properties paired with “subjecthood” noted in (3). Thus, the “resistant” middle in children’s utterances is actually an outcome of their recognition of the patient participant as somehow agent-like, possessing both volition and responsibility for their failure to carry out the intended action.

4. Concluding Remarks

This paper has demonstrated so far that (i) the middle construction should be classified into two sub-constructions of the “resistant” and “facilitative” middles based on their differences in descriptive and theoretical respects; (ii) the “resistant” middle of negated forms is the central use of middle constructions in terms of usage-based language acquisition. The hypothesized order of acquisition is summarized in Figure 5.

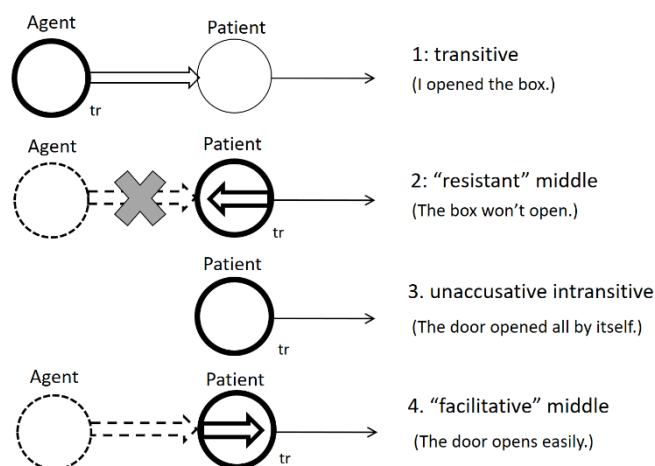


Figure 5: Hypothesized order of acquisition

Children first acquire transitive sentences, which correspond to the default interpretation of agent-focused transitive events. Regarding verbs like “open,” children must learn that some transitive verbs can also be used intransitively taking inanimate patient subjects, without any explicit morphological cue. The early acquisition of the

"resistant" middles suggests that children can shift their focus from the human agent to the inanimate patient when it hinders their intended action by exerting counterforce. The "resistant" middle serves as a starting point from which children learn to foreground the patient and background the agent participant, such as unaccusative intransitives (e.g. "The door opened all by itself"). Other linguistic forms that foreground the patient are acquired later. For example, *get*-passives and *be*-passives are produced by children at around the ages of three and four, respectively (cf. Budwig, Stein and O'Brien 2001, Slobin 1994, Taniguchi 2014). Subsequently, if Keyser and Roeper's (1984) observation in (18) is correct, the "facilitative" middle enters children's grammatical knowledge at the age of six along with some "resistant" middles that use adverbs *poorly* or *badly*.⁶ What Figure 5 presents is merely a rough sketch of the developmental path, and further analysis is needed in order to validate it.

Finally, the discussion presented in this paper also shows that negative forms are acquired earlier than affirmative forms, contrary to the standard view that negatives are secondarily derived from affirmatives by adding markers of negation. Notably, most utterances of the "resistant" middles of children and their adult interlocutors include contracted forms such as "won't" and "doesn't," in which the negative marker "not" is not highly salient. These contracted forms may function not as negation but rather as indicators of other grammatical processes like intransitivization in the early stage of acquisition. Further investigation into children's use of negation will serve to elucidate how grammatical constructions are acquired, and how adults' grammatical knowledge is formed through complex developmental pathways.⁷

⁶ One possibility of acquiring the "facilitative" middle is that the highly frequent chunk "X sells well" functions as a central exemplar of this sub-construction. In fact, 688 instances of "X sells well" are found in COCA, while other "facilitative" middles are quite rare as observed in note 4. Note also that the middle use of "sell" is so entrenched that it behaves like an unaccusative intransitive, such as "Does this book sell?" "This book is really selling this month."

⁷ Many studies have been conducted on acquisition of negation since Brown and Bellugi (1964), who pointed out the negation in the early stage of acquisition often involves sentence-initial markers, not sentence-medially as in "No I see truck." ([2;03;04] adam01, brown, CHILDES) Thus, the children's instances of the "resistant" middle presented in this paper need examinations in terms of their use of negation in general.

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認知構文文法理論からみた中間構文：
「抵抗型」と「促進型」の下位構文

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本稿は、英語における中間構文を認知構文文法の観点から捉え、「促進型」と「抵抗型」の下位構文に区別する必要性を論じる。中間構文は主語である被動者の属性を描写すると言われるが、その属性によって行為が容易になる場合を「促進型」、逆に阻害される場合を「抵抗型」と呼ぶ。先行研究では “This car drives easily.” のような「促進型」がしばしば典型例として挙げられ、その文法的特性として副詞の義務性が指摘されるが、否定形の「抵抗型」 (“This door won’t open.”) ではそのような副詞が必ずしも共起しない。そのほか意志用法の法助動詞 *will* が「抵抗型」にのみ生じることなど、両者には文法的・意味的に異なる点が多い。さらに「促進型」と「抵抗型」ではその使用域と頻度にも相違があり、低頻度の「促進型」の構文を具体例から抽出する可否についても使用依拠モデルの点から問題となる。本稿では言語発達の知見および CHILDES による調査に基づき、否定形の「抵抗型」が早期に獲得されることを示し、被動者を焦点化する構文の原型として機能していることを論証する。